

THE PROPOSED PLAN FOR SOIL AND DRY
SEDIMENT AT THE RVAAP-49
CENTRAL BURN PITS

RAVENNA ARMY AMMUNITION PLANT
RAVENNA, OHIO

ORIGINAL

PUBLIC MEETING
December 16, 2008

Newton Falls Community Center
52 E. Quarry Street
Newton Falls, Ohio

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1 **APPEARANCES:**

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3 Jackson Tittle, Facilitator

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5 W. Kevin Jago, P.G.

6 Science Applications International Corporation

7 Assistant Vice President

8 Senior Scientist

9 Engineering & Infrastructure

10 151 Lafayette Drive

11 Post Office Box 2501

12 Oak Ridge, Tennessee 37831

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14

15 **ALSO PRESENT:**

16 Ellen J. Rager, SAIC

17 Jed Thomas, SAIC

18 Tia Rutledge, SAIC

19 Todd Fisher, Ohio EPA

20 Mark Patterson, U.S. Army Co-Chairman

21 Derek Kinder, U.S. Army Corps of Engineers

22 Nick Stolte, U.S. Army Corps of Engineers

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1 **MR. TITTLE:** Good evening. I
2 don't see anyone streaming through the door
3 anymore, so I think this is probably the group we
4 are going to have tonight. I would like to
5 welcome you to the public meeting to discuss and
6 hear about the proposed plan for soil and dry
7 sediment at the Central Burn Pits of the Ravenna
8 Arsenal Ammunition Plant, or as most of us know
9 it around here as "The Arsenal." And we are
10 going to discuss these particular things
11 tonight. We will have a presentation, and then
12 we will have a time for question and comment at
13 the end.

14 My name is Jack Tittle. I live on the other
15 side of The Arsenal in Windham, and I am a
16 private citizen. I am not in any way working for
17 the Army or anyone else. I am here to make sure
18 that everyone who has a question or a comment
19 concerning the proposed plan that we are talking
20 about tonight will have an opportunity to do so.

21 And since I used to be a high school
22 teacher, there will be no gum chewing. I am
23 watching you, Tom. And no note passing. And you
24 guys over there, you know, anything bad, I am
25 going to call your mother.

1 All right. So here is what we are going to
2 talk about. We are going to talk about the
3 proposed plan for the Central Burn Pits at the
4 Ravenna Army Ammunition Plant. Now, we are not
5 going to talk about groundwater or surface
6 water. Those are different subjects which will
7 be covered at other meetings at other times in
8 the future. And you will have an opportunity to
9 see those as they come along and make your
10 comments about that at a different time.

11 I should point out that there are exits at
12 every corner of this room. So in the unlikely
13 event that we have hurricanes or floods of locust
14 or emergencies of some sort, if it gets too
15 boring, you can run out of any door that you
16 see. There are rest rooms and drinking fountains
17 in the lobby on the other side. Afterward, there
18 are cookies and goodies back there, and coffee.
19 Feel free to help yourself.

20 On the table in the back is the proposed
21 plan that we are talking about tonight. If you
22 really want to get into the details, that is
23 available for you. After the meeting, if you
24 think of something on the way home and you want
25 to make a written comment, you can do that on one

1 of these cards which is in the back. And they
2 can be mailed in. Just make sure that they are
3 postmarked by January 7th.

4 So we will go on with the presentation. Our
5 speaker tonight is Kevin Jago. And Kevin Jago is
6 from the Science Applications International
7 Corporation. And he is going to give us a status
8 report on the soil and dry sediment at the
9 Central Burn Pits. Afterward, I will open up the
10 comments for the -- and questions on the floor.
11 So, Kevin --

12 **MR. JAGO:** Thank you, Jack.
13 First, again, I want to thank you all for braving
14 the elements this evening and coming out and
15 attending this public meeting. It is an
16 important forum for the public to be able to
17 review and participate in a decision-making
18 process here at The Arsenal for environmental
19 restoration. It is a meeting that is prescribed
20 by CERCLA, by the law. And we are here tonight
21 in accordance with those laws and because we want
22 to share the fruits of our work and our labor
23 with you folks and have you all provide
24 opportunity for input on the decisions that we
25 are in the process of making to remediate or

1 clean up the soils at the Central Burn Pits at
2 the Ravenna Army Ammunition Plant.

3 First of all, can everyone hear me okay? We
4 have got a great sound system this evening. I
5 see some thumbs up. If during the presentation
6 you are not able to see some item on the screen
7 and you need me to clarify something, I will be
8 glad to do so. Just let me know and I will be
9 able to clarify any items that show up on that or
10 any text that you may not be able to focus on.

11 As Jack mentioned, I am Kevin Jago. I am
12 with the Science Applications International
13 Corporation office out of Oak Ridge, Tennessee.
14 I have been working here at Ravenna for about 12
15 years now. Since about the late '90s time frame
16 I started with the project.

17 We have a number of other representatives of
18 the company here tonight. Tia Rutledge is going
19 to help us out. Tia is out of our Twinsburg,
20 Ohio office. Also out of our Twinsburg, Ohio
21 office is Ellen Rager in the back. Heather Ann,
22 Jed Thomas, and all out of the local Twinsburg,
23 Ohio office.

24 So without further ado, I will move on with
25 the presentation. Tia, the next slide.

1 We are here tonight to present a remedial
2 decision to the public for soil and dry sediment
3 at the Central Burn Pits area of concern.
4 Earlier in 2008, we conducted a removal action of
5 some debris piles and other materials at the
6 Central Burn Pits. That information was provided
7 to the RAB in a presentation.

8 Also, Mr. Patterson conducted a tour of The
9 Arsenal earlier in the year where the RAB had an
10 opportunity to come out and view some of the
11 activities ongoing at The Arsenal. One of the
12 stops on that tour was actually at the Central
13 Burn Pits where the public had a chance to really
14 see the remedial activities that have been done
15 there.

16 That is an important topic, because tonight
17 we are addressing the rest of the area of concern
18 outside of the debris piles that we had removed
19 earlier in the year. So just a little bit of
20 context, those debris pile removals were part of
21 a separate public participation process at
22 earlier points in time. And we are here to
23 address the remainder of the soil at the Central
24 Burn Pits.

25 My agenda this evening, I will give a site

1 description, a refresher on the Central Burn
2 Pits, talk a little bit about the historical
3 operations and some of the investigations that
4 have been done, give a scope of the response
5 actions, both those that have been completed
6 previously and the one we are here to discuss
7 tonight. And then outline the proposed plan for
8 the remainder of the soil and dry sediment at the
9 Central Burn Pits. And then lastly, as Jack
10 mentioned, we will open the floor for any
11 comments that you might have.

12 Tia, the next slide, please.

13 The Central Burn Pits is located in the
14 east-central portion of The Arsenal. It is at
15 the intersection of Paris-Windham Road and Lumber
16 Yard Road. There is a T-intersection here. The
17 Central Burn Pits, if you go onto the Ravenna
18 Public web site and pull up the Installation
19 Action Plan, you will see it designated as the
20 area of concern number RVAAP-49.

21 The next slide, please.

22 The Central Burn Pits was used in the early
23 days of The Arsenal history as a lumber and
24 building material storage area. It is bordered
25 by railroad tracks to the north and south known

1 as Tracks 33 and 39. And I will show you a map
2 of that in just a second.

3 Sand Creek, one of the major drainages on
4 The Arsenal, borders the AOC to the west and
5 northwest. The Central Burn Pits is about 20
6 acres. It is relatively flat because it was used
7 to lay down the storage materials. And over the
8 years, gravel, soil, fill material, et cetera,
9 had been placed at the Central Burn Pits.
10 Historically, those are basically what you call
11 fill or debris materials, and are still there at
12 the AOC.

13 Following its use as a lumber and building
14 material storage area, there was an open burning
15 of material conducted at the Central Burn Pits.
16 Those include wooden boxes, pallets, lumber, non-
17 explosive wastes, wire and some other electrical
18 components and then just other general
19 combustible scrap materials were open burn
20 there.

21 A little more recently in The Arsenal's
22 history, as I mentioned, some of these fill
23 materials, construction debris materials, were
24 placed there at the Central Burn Pits. And those
25 include the excess fill dirt, gravel, corrugated

1 metal pipe and some other construction type
2 debris, gravel, that were placed in various piles
3 and berms throughout the area of concern.

4 The next slide, please.

5 Again, the map shows track 39 boundary to
6 the north. Track 33 boundary to the south.
7 Paris-Windham Road along the east. And then Sand
8 Creek is the border on the west/northwest. So
9 the area within this polygon represents the
10 boundary of the Central Burn Pits. There is an
11 access road that runs through the center of it.
12 And as I mentioned, some various debris piles and
13 berms, mostly along the access road, still remain
14 there at this point in time.

15 The next slide.

16 Two phases of investigation have been
17 completed at the Central Burn Pits. As of 2005,
18 there was a remedial investigation completed.
19 That remedial investigation included the
20 collection of soil samples throughout the Central
21 Burn Pits.

22 And also a subsequent investigation was
23 completed by SAIC more recently, about 2006, was
24 to investigate debris piles and berms
25 specifically within the Central Burn Pits area.

1 Those gravel and excess soil piles were there.
2 The analytical work that was completed showed
3 that we had some metals and explosives present in
4 some of the soils there at comparatively low
5 concentrations.

6 What these investigations also showed was
7 that two of the 12 debris piles that were
8 investigated did contain some metals that were of
9 a concern. Therefore, we pursued an engineering
10 evaluation and cost analysis to address the
11 contamination in those two particular debris
12 piles. They are known as Pile M and Pile N.
13 Pile M had concentrations of lead that were of
14 concern. And Pile N had some hexavalent chromium
15 within some burn residues and other material that
16 were of concern.

17 On the basis of the presence of these
18 contaminants, there was a potential there that
19 they might migrate or other potentials for
20 exposure to people that might have a need to be
21 on the Central Burn Pits. So we proceeded with a
22 removal action under a non-time critical process
23 under CERCLA to remove these two debris piles.
24 And that work was documented in Action Memorandum
25 that was made available for public review. The

1 Action Memorandum was following the EE/CA, the
2 Engineering Evaluation and Cost Analysis. And
3 that work was started in the spring of 2008, and
4 we wrapped up the site restoration in the late
5 summer of this year. So those two debris piles
6 were removed.

7 I have a little bit more detail on the
8 activities there. Tia, the next slide.

9 Again, our site map showing the piles and
10 berms. The two piles that were removed. Pile M,
11 a height of about 3 feet and about 38 feet in
12 diameter, is shown with lead concentrations in
13 that material were about 8,500 parts per million,
14 or milligrams per kilogram, which does meet a
15 regulatory definition in part for
16 characteristically hazardous material.

17 Pile N, a smaller pile, about 4.5 feet in
18 height, about 10 feet in diameter, contains
19 hexavalent chromium above a risk-base criteria
20 that we have used at Ravenna over the years to
21 screen our data. So it was also of a concern.
22 So the removal action proceeded to take these two
23 piles out and dispose of them.

24 Tia, the next slide.

25 And those activities consisted of the

1 removal of about 50 tons of material from the
2 pile of -- the upper portion of Pile M. That is
3 the pile that contained the lead. About 50 tons
4 of that was disposed as characteristically
5 hazardous waste due to regulatory definition and
6 concentrations that were present.

7 Those 50 tons of material were transported
8 and packaged by our waste management contractor
9 and transported to a disposal facility in
10 Canada. Additional concrete and soil were
11 encountered that still contained some elevated
12 levels of lead above a U.S. EPA residential
13 criteria of 400 milligrams per kilogram. So we
14 removed another approximately 500 tons -- just a
15 shade under 500 tons of material that contained
16 lead. Those materials were nonhazardous but
17 classified as solid wastes and then went to an
18 American landfill here within the region.

19 The Pile N, the pile that contained
20 hexavalent chromium, we removed approximately 157
21 tons of soil and burning residue. All of those
22 materials were classified as nonhazardous wastes
23 and were transported to an American landfill, as
24 well.

25 We documented the containment of our cleanup

1 goals, which includes 400 milligrams per
2 kilogram, or parts per million for lead. That is
3 the U.S. EPA residential criteria. And we
4 documented the containment, which basically met
5 the goals for hexavalent chromium of 16 parts per
6 million.

7 To verify the containment of those levels
8 through sampling of the excavations, both at the
9 bottom and around the periphery of the
10 excavations as work proceeded, so we collected
11 those samples and determined that we have
12 obtained the goals. We removed all the necessary
13 soil and had completed the activity.

14 **MR. THOMAS:** Kevin, could you
15 just speak up a little?

16 **MR. JAGO:** I am going to get
17 a little louder so our court reporter can hear
18 better. Okay. Very good.

19 Following the removal action of the two
20 piles, we had to address the remainder of the
21 soils and dry sediment at the Central Burn Pits.
22 This is done through a Remedial Investigation
23 Addendum that followed the investigations of
24 2005. Specifically, this Remedial Investigation
25 Report Addendum included a risk evaluation of the

1 remaining soils, piles and berms, an updated
2 ecological risk assessment and we developed
3 risk-base cleanup goals for the soil and dry
4 sediment.

5 The purpose of the addendum was to determine
6 if we needed to do further investigation, or some
7 engineering feasibility studies for additional
8 cleanup, if needed, or if no further action was
9 necessary. And that means if the contaminant
10 concentrations in the soils outside of the piles
11 and berms were less than these risk-base cleanup
12 goals.

13 The next slide.

14 Our Remedial Investigation Addendum was
15 based on the population samples that had been
16 collected over time at the Central Burn Pits.
17 The evaluation included looking at numerical
18 monitoring -- computer monitoring to see if
19 contaminants might leach or migrate from the
20 soils to groundwater.

21 We evaluated the possibility of whether
22 these contaminants might be transported through
23 surface water runoff or potentially impact the
24 wetland areas of Sand Creek. And we also looked
25 specifically at the human health risk exposure

1 and ecological risk exposure.

2 Our results show that chemicals in the soil
3 were not predicted to impact groundwater. Did
4 not predict it to leach from the soil to the
5 groundwater. And, again, at intervening periods
6 of time at the Central Burn Pits, the water
7 monitoring was there, samples had been done of
8 the groundwater over time. But we always had
9 computer monitoring results that -- quantitative
10 results of the groundwater to verify the results
11 of that monitoring.

12 The human health risk assessment for soil,
13 we evaluated a range of possible land use
14 scenarios for future use of the Central Burn
15 Pits. And these include a National Guard
16 training scenario, which is the intended land
17 use. Most folks, I think, are aware that the
18 Ohio National Guard has a training logistic site
19 and activities are ongoing there. So the likely
20 future land use does involve some National Guard
21 training mission.

22 We also looked at a security guard and
23 maintenance worker land use. And then the
24 maintenance of that, you have mowing or
25 maintenance of access roads, people going in and

1 out on a periodic basis, a few times a month,
2 perhaps, or a few times per year.

3 We also evaluated a fire/dust suppression
4 worker. In the event that a brush fire were to
5 occur and firefighters were called out to
6 extinguish that, we would evaluate exposures
7 under that type of scenario, which would be
8 short-term and very intermittent.

9 A trespasser scenario primarily involves
10 poaching, someone who intrudes upon The Arsenal
11 and illegally hunting.

12 And then lastly, the most stringent land use
13 scenario is actually a resident subsistence
14 farmer located on the Central Burn Pits as a
15 hypothetical land use. And that is a baseline
16 that we always look at compared to these other
17 land uses.

18 Our results show that the contaminants in
19 the remaining soils and dry sediment at the
20 Central Burn Pits were less than the risk-base
21 cleanup goals for both the National Guard
22 trainee, the intended land use, as well as
23 residential land use.

24 For ecological cleanup goals, we evaluated
25 the status of the ecosystem at the Central Burn

1 Pits and determined it was healthy, functioning
2 well. There are data that have been collected
3 from the adjacent Sand Creek, from other studies
4 conducted in about the 2006 time frame. Those
5 studies show that the ecological health of Sand
6 Creek, as well, is very good. And there is no
7 evidence that contaminants have moved from the
8 Central Burn Pits to Sand Creek and have impacted
9 the ecosystems there in that vicinity.

10 The low levels of soil contamination that
11 are present and result in a low level of
12 ecological risk due to exposure or direct
13 exposure to the soils for, say, terrestrial
14 mammals that are present, rabbits, et cetera,
15 that might be there on the Central Burn Pits.

16 There is a low likelihood of contaminant
17 movement from the soil to the adjacent wetland
18 areas in the future. The site is flat. It is
19 heavily vegetated, and there is no direct ditch
20 lines or runoff routes from the interior of the
21 Central Burn Pits out to Sand Creek. There are
22 quite a bit of buffer zones, if you will.

23 And then lastly, there is an enormous amount
24 of high-quality habitat that surrounds the
25 Central Burn Pits. And what that means is that

1 animals have an opportunity to move about in
2 high-quality habitats both within and adjacent to
3 the Central Burn Pits. So they are not likely to
4 be residing at any one spot within the area of
5 concern for any length of time. They will be
6 moving around to clean habitats to migrate to.
7 There is plenty of food. And that does have an
8 effect on what we call the home range of the
9 animals.

10 So all the bases of all of these lines of
11 evidence, ecological cleanup goals were
12 determined not to be necessary. And no
13 excavations would be required to protect the
14 ecological resources at the Central Burn Pits.

15 The next slide.

16 So in summary, the conclusion of the RI
17 Addendum, and that which is listed in the
18 proposed plan which has been made available for
19 your view, is a recommendation for no further
20 action for soil and dry sediment beyond the
21 removals that have already been done.

22 And the reasons for this recommendation is
23 that the risk profiles and the ecological, both
24 human health and ecological, do not indicate that
25 there is a risk related to soils and dry sediment

1 for the most restrictive land use assumption that
2 we evaluated, and that is for residential, as
3 well as for National Guard training land uses.

4 One thing I would point out is that this
5 decision does not address what we call wet
6 sediments in flowing streams or wetland areas.
7 It does not address groundwater and it does not
8 address surface water. Those will be future
9 decisions, as Jack mentioned a minute ago, and
10 will be addressed as required under the CERCLA
11 process -- decision documents for those meetings
12 specifically -- and the public will be given an
13 opportunity to review those and comment on those
14 at that particular point in time.

15 I will mention that the remaining chemicals
16 currently in the soil do not exceed our cleanup
17 goals even for residential or the training land
18 use. So this recommendation of no further action
19 would be considered protective under our risk
20 assessment results.

21 And as I mentioned just a second ago, a
22 healthy ecosystem currently exists at the Central
23 Burn Pits, and we do not see the need or the
24 requirement to do additional remediation to
25 protect the ecological receptors.

1 So in summary, no additional action required
2 for soil and dry sediment for the balance of the
3 Central Burn Pits. And at this point in time, I
4 will open the floor up for questions. And I
5 thank you for your attention.

6 **MR. TITTLE:** Thank you, Kevin.
7 Now, if you have a question or a comment, I would
8 appreciate it if you would limit it to the
9 information that we have discussed tonight, the
10 things that you have seen, things we have heard.
11 If you picked up the information back there, if
12 you have a question or a comment about that,
13 fine.

14 If you wish to comment or question, I ask
15 that you raise your hand and I will call on you.
16 And come up to the microphone, state your name
17 and what town you are from and then give your
18 comment or question. And please limit it to the
19 things that we have discussed, because we are not
20 here to discuss other things. So if you want to
21 complain about the mayor of Newton Falls, this is
22 not the time.

23 Okay. Any questions or comments? Yes?
24 Please tell us who you are and where you are
25 from.

1 **MR. FISHER:** My name is Todd
2 Fisher and I work with the Ohio EPA Division of
3 Emergency & Remedial Response in Twinsburg, Ohio.

4 The Ohio EPA has reviewed the final proposed
5 plan for soil and dry sediment at the Central
6 Burn Pits. And we concur with the no further
7 action recommendation pending any public
8 comments. Thank you.

9 **MR. TITTLE:** Anyone else?

10 **MR. TADSEN:** Yes. Tom Tadsen
11 of Franklin Township. The Human Health Risk
12 Assessment that was mentioned in the presentation
13 and the Ecological Risk Assessment are based on
14 the risk of the potential future users of this
15 Central Burn Pit area.

16 Now, if I can, I would like to direct this
17 question to the Department of the Army
18 representative?

19 **MR. TITTLE:** Sure.

20 **MR. TADSEN:** Mark?

21 **MR. PATTERSON:** Yes, sir.

22 **MR. TADSEN:** In the event that
23 you wanted to do cleanup beyond the standard
24 required based on the user, would you be
25 permitted to do that under fiscal law -- under

1 the budgetary guidelines that you have?

2 **MR. PATTERSON:** In general, the
3 policy regarding cleanup beyond the current
4 proposed land use which, if you are not all
5 familiar, will be for a specific National Guard
6 use, that they have taken over responsibility at
7 this point and most of the installation will be
8 used for a variety of training.

9 We can look at cleanup levels beyond what is
10 proposed for the future land use. But depending
11 upon the costs and the effort and time that it
12 takes to clean it up, we may be restricted on how
13 clean we can make it.

14 In some instances where there is only an
15 additional amount, a small amount of cleanup that
16 is required to get to a residential or an un-
17 restricted land use, in most cases we often can
18 spend some additional funds to get to that point.

19 In part because sites that are restricted
20 for certain land uses, you would have to do
21 additional cleanup, there is a requirement for
22 the Army to essentially monitor those sites for a
23 very long time, until there is essentially no
24 risk of future land users. That monitoring can
25 oftentimes carry a substantial amount of cost to

1 govern it.

2 So in cases where we can spend a little bit
3 of money upfront, get to an unrestricted use and
4 essentially not have to do that long-term
5 monitoring, oftentimes the Army will be able to
6 spend additional funds.

7 **MR. TADSEN:** Thank you. And I
8 would like one follow-up if I could?

9 **MR. TITTLE:** Sure. Go ahead.

10 **MR. TADSEN:** Kevin, you
11 mentioned that there were previous tests done on
12 fauna that were found in Sand Creek. Do you know
13 if there was any tissue sampling done to those
14 fish and the invertebrates that were taken from
15 Sand Creek?

16 **MR. JAGO:** I don't have the
17 information on hand. I know that that was a
18 study that was commissioned by the Army. And the
19 Army Corps of Engineers and the Ohio EPA both
20 participated in that study. Benthic surveys were
21 done, water quality samples were collected, but I
22 do not know if there were tissue samples
23 collected. We can research that and get back to
24 you.

25 **MR. TADSEN:** Thank you. Or

1 possibly our EPA representative might have that
2 information? Thank you.

3 **MR. FISHER:** The Sand Creek
4 basin has been essentially sampled water quality-
5 wise. Also, like Kevin said, for benthic
6 organisms. Several legacies were developed by
7 the Ohio EPA. And based on those results, it
8 shows that Sand Creek is a very healthy stream
9 based on the results from our biologists that
10 have extensively studied that stream.

11 **MR. TITTLE:** Are there any
12 other comments or questions? Yes?

13 **MR. BURTON:** Excuse me. Hello.
14 I am Jim -- I am Jim Burton from Norfolk,
15 Virginia. And I have a couple of questions.
16 And, I guess, first for Mr. Jago.

17 The Central Burn Pits represent what
18 percentage of total burn pits within The
19 Arsenal?

20 **MR. JAGO:** The area of the
21 Central Burn Pits is approximately 20 acres. The
22 Ravenna installation itself is approximately
23 22,000 acres. So it is a relatively small area
24 of concern within The Arsenal.

25 **MR. BURTON:** Right. I was

1 talking specifically about other burn pits. For
2 instance, there is a Winklepeck Burning Grounds
3 and the Erie Burning Grounds and you have
4 mentioned specifically the Central Burning
5 Grounds. And I am wondering are they one and the
6 same? Are there other burning pits on this
7 22,000 acres? I am assuming there are. The last
8 I checked, there was something like 55 different
9 such pits.

10 So my question to you is, the results of
11 this particular endeavor represents what
12 percentage of the overall total of burn pits
13 within the 22,000 acres?

14 **MR. JAGO:** Specifically, my
15 knowledge of the burning grounds that were
16 present at the Ravenna installation include
17 Winklepeck Burning Grounds, which is
18 approximately 200 areas, and the Erie Burning
19 Grounds, which is in the ballpark of 60 to 70
20 acres, roughly.

21 Those two particular areas of concern had a
22 different usage in the past. They were used
23 specifically for open burning of munition
24 components or bulk explosives.

25 The Central Burn Pits was originally used as

1 a contractor lay down yard for the construction
2 materials. And the nonhazardous, nonexplosive
3 wastes were burned at this particular site in
4 years past.

5 **MR. BURTON:** Thank you. So --

6 **MR. PATTERSON:** Yes. If I could
7 step in? Again, Mark Patterson. I am the Army
8 representative for the cleanup, project manager.

9 When Kevin gives you those numbers, he is
10 correct. There are other sites that we did
11 burning. Those are the acres that were
12 originally established when we identified the
13 area of concern. They did not necessarily
14 represent the burn -- the Central Burn Pits, that
15 that entire 20 acres was used for burning. You
16 probably have a better estimate than I would.
17 But actually a very small percentage of that 20
18 acres of the Central Burn Pits site was used for
19 actual burning.

20 **MR. BURTON:** Okay. So then I
21 guess the last one on that particular burn pit
22 thing is that -- have the other ones been dealt
23 with? Are we finished with the Winklepeck and
24 Erie Burning Ground? Is that a wrap on those?

25 **MR. PATTERSON:** No. We have --

1 there were originally 51 areas of concern
2 identified at the installation. Those are sites
3 that are being, for the most part, managed under
4 what they call the Installation Restoration
5 Program. It has been ongoing since 1995.

6 All of the sites we currently have
7 identified and have moved forward on are now
8 under contract to either be fully investigated
9 and closed out, as far as no further action, or
10 if there is some type of remediation cleanup
11 required, that will be done under current
12 contracts.

13 So we have closed out some sites, are very
14 near closing out others, rainproof the main
15 production lines where we produced munitions, and
16 others -- we just issued the last large contract
17 last year to deal with the rest of those
18 environmental sites.

19 Now, we do have a separate program, which I
20 won't go into detail, because it is outside the
21 boundary of the Central Burn Pits, but it is
22 called the Munitions Response Program. That is
23 specifically for sites that have explosive
24 munitions.

25 This is dealing primarily with chemicals --

1 chemicals that have gotten into the soil or
2 groundwater or surface water.

3 **MR. BURTON:** Thank you. And
4 that is my final question. I tried to do some
5 research on line before I got here. And I saw a
6 mention of RDX, DNT, different munition
7 constituents, if you will. But I didn't see any
8 mention, not one time, for perchloric. And then
9 my question is open to anyone here. Has there --
10 has anybody tested for and have they found any
11 perchlorate in the dry soil and sediment at the
12 Central Burn Pits, at the other burn pits or in
13 any of the surface water or groundwater? And
14 where can I find that -- those results? Can I
15 actually -- can you give me an e-mail address
16 or a --

17 **MR. PATTERSON:** First off, if you
18 are interested, The Repository -- The Public
19 Repository with our documents that we -- are
20 available to the public are in the plan, so you
21 can find that. I believe it is in the front of
22 the proposed plan, our one site here. The Newton
23 Falls Library --

24 **MR. BURTON:** Uh-hum.

25 **MR. PATTERSON:** The other is at

1 Reed Memorial Library in Ravenna. And also you
2 can even come to my office if you will make an
3 appointment ahead of time. Also, just about
4 every one of those documents is on the public web
5 site.

6 MR. BURTON: Okay.

7 MR. PATTERSON: Kevin, is that in
8 your presentation? RVAAP.org?

9 MR. JAGO: Yes, that is how
10 they printed off. It is on all the corners.

11 MR. PATTERSON: So you already
12 have it on the handout?

13 MR. BURTON: Right.

14 MR. PATTERSON: You can find that
15 information there. Perchlorate specifically, we
16 have done limited sampling for that based upon
17 the guidelines that were given by the Department
18 of Defense and the Army.

19 In general, perchlorates are associated when
20 it comes to munitions with rockets and
21 pyrotechnic. Ravenna did not handle much of that
22 type of munition. We handled primarily high
23 explosives like the RDX and DNT, like you
24 mentioned, that were used in large caliber
25 munitions and general purpose bombs.

1 We did not actually produce anything in
2 Ravenna that involved large amounts of
3 perchlorates of any kind.

4 **MR. BURTON:** The reason that I
5 mentioned that is that there are a number of
6 nations in the world -- for instance, the
7 Russians had a number of large caliber munitions
8 that were 89 percent perchloric by volume.
9 So there is a number of U.S. manufactured
10 munitions -- high explosive conventional
11 munitions that have, by volume, large percentage
12 of perchlorate.

13 Now, the recipe has changed over the years
14 and with different munitions, and so forth. So
15 if you have high explosives -- for instance,
16 perchlorates are found in 400 sites in 35
17 different states across the U.S. That is where
18 they contaminated the aquifers -- an untold
19 number of communities surrounding those
20 aquifers.

21 So perchlorates are a big deal. And they
22 will always be associated with rocket fuel. And
23 of those 400 sites, they have almost no
24 documentation of any exposure to rocket fuel, but
25 almost every one of them has got a documented

1 history of high explosives.

2 So this particular arsenal produced more
3 munitions than all the 400 other ones during
4 World War II. This is like -- from what I pulled
5 up on the web, this is one of the most productive
6 sites for, you know, large caliber -- medium to
7 large caliber munitions.

8 So perchlorate to me -- and I don't know. I
9 am just kind of new looking in on this, and I am
10 wondering if -- you know, I am thinking
11 perchlorate could be found here. And it should
12 be something that is, you know, clearly evident.
13 And it probably is. I don't know. But I found
14 it kind of stunning that I didn't see perchlorate
15 anywhere in anything that I pulled up.

16 But of course now I have got more
17 information and I will pull that up. But to say
18 that -- and this is for everybody's information --
19 that perchlorates are only associated with rocket
20 fuel, that is pretty -- that is pretty weak. In
21 reality, perchlorate is associated with a lot of
22 stuff.

23 And whether or not -- as you say, maybe we
24 didn't make the stuff that was 50 percent
25 perchlorate by volume here in Ravenna. But to

1 say there is no perchlorate here and that it is
2 only associated with rocket fuel is a bit of a
3 stretch.

4 So -- and I am kind of shocked that -- and,
5 of course, I am not a scientist. But I am
6 wondering why are we deciding that we are okay
7 with our remedial action on the dry soil and
8 sediments before we completed the wet soil and
9 sediments, unless your dry soil and sediments
10 have a big tarp over it so that when it rains
11 nothing filters through.

12 I mean, am I off base here?

13 **MR. TITTLE:** Well, I think you
14 are asking questions about a different portion of
15 the operations and a different portion of the
16 cleanup procedures. We are only --

17 **MR. BURTON:** Oh, absolutely. I
18 recognize that.

19 **MR. TITTLE:** We are only
20 talking about one particular area tonight and the
21 dry portions of that. Now, there are other
22 things that are ongoing and will come up in the
23 future. And those items, like water and such,
24 will be addressed at some different time in the
25 future.

1 **MR. BURTON:** Well, I thank you
2 very much. And thank you all for doing such a
3 great job. I am not the bad guy. I think you
4 are all doing wonderful project work here, and I
5 am especially impressed with the Ohio EPA. For
6 you to come here and give testimony that you
7 agree with their recommendation, that means a lot
8 to me. Because I have met a lot of Ohio EPA
9 guys. I am a munitions expert. I go all over
10 the world and I deal with munitions primarily
11 with water -- I am an underwater expert.

12 And one of the things that I am here to look
13 into is whether or not some of the stuff that
14 showed up here for this assembly didn't wind up
15 in Lake Erie, which a lot of it is. I have
16 identified sites in all the Great Lakes --

17 **MR. TITTLE:** Oh, we are on the
18 wrong side of the Continental Divide. Do you
19 know about the Continental Divide that runs
20 through Ohio?

21 **MR. BURTON:** I know that Lake
22 Erie has got a lot of munitions in it. I don't
23 know --

24 **MR. TITTLE:** It doesn't come
25 from here. Did you know that the line runs

1 through Hiram, which is about, what, 10 miles
2 from here. The water -- the rainwater that
3 falls on the north side of Hiram goes into Lake
4 Erie, down the St. Lawrence and into the
5 Atlantic.

6 The water that falls on the south side of
7 Hiram, which is this side, and the Mahoning
8 River, goes into the Mahoning River, down to the
9 Ohio, to the Mississippi, and totally nothing
10 from this area can end up in Lake Erie.

11 **MR. BURTON:** Time out. Time
12 out. You are talking to a guy who -- I have a
13 great wealth of information, for anybody's
14 interest --

15 **MR. TITTLE:** Okay. I have
16 lived here for 65 years, so I know where it
17 goes.

18 **MR. BURTON:** I am talking
19 about -- I am talking about the barge loads of
20 munitions -- railcars of munitions going from
21 here, onto the barge, taken out into Lake Erie
22 and dumped by the hundreds of thousands of tons.
23 That is what I am talking about.

24 **MR. TITTLE:** That is a
25 different problem.

1 **MR. BURTON:** Sure.

2 **MR. TITTLE:** Thank you.

3 **MR. JAGO:** I am sorry. We
4 have a question.

5 **MS. MOHR:** I am Eileen Mohr
6 from the Ohio EPA. Jim, I really appreciate your
7 comments that you made. And perhaps off line,
8 after this meeting, you and I can discuss a
9 little bit more regarding the munitions to Lake
10 Erie. I can get you the right contact people and
11 the folks that are working on -- currently
12 working on some of those projects and we can go
13 from there, okay?

14 **MR. BURTON:** Thank you.

15 **MS. MOHR:** You're welcome.

16 **MR. TITTLE:** Are there any
17 other questions or comments? Now, don't forget.
18 If you take one of these cards and you think of a
19 question or a comment and you say, "Gee, I wish I
20 had thought of that at the time," you can have a
21 written question or a comment and send it in.
22 Make sure it is postmarked before January 7th.

23 Okay. Any other questions or comments while
24 we are here? Well, you have all been very good.
25 I won't have to send anyone to the principal's

1 office. I will give you all a good grade.

2 Okay. And you can have a cookie and a cup
3 of coffee, if you would like. Thank you very
4 much for your attention. Thank you for coming
5 out on such a nasty evening as it turned out to
6 be, and drive safe on the way home. Thank you
7 very much.

8 (Thereupon, the meeting was
9 concluded at 7:20 p.m.)

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C E R T I F I C A T E

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) SS:
SUMMIT COUNTY,)

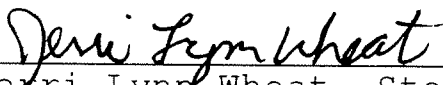
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My commission expires April 9, 2013.

- - - -

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