



Speaker: LTC Snead, USACE

Good evening. My name is Dan Snead and I'm the Commander of the US Army Corps of Engineers Buffalo District. And I'd like to welcome everybody here tonight. I want to thank everybody for coming out tonight to listen to our presentation on the US Army Corps of Engineers former Harshaw Chemical Company Site Proposed Plan for IA-06. We've expedited this Proposed Plan based on input received from the community and I want to assure you that we appreciate your participating today. Your input is greatly valued.

Also, before I start I'd like to acknowledge some of the elected officials or the representatives that are here today in the audience. First off, I'd like to introduce Marty Gelfand representing Congressman Dennis Kucinich who would like to make a few opening remarks.

(cards with names will be provided for remaining elected officials) If I am missing anyone, please let me know. (Pause while they introduce themselves) Thank you.

Before I start, I want to point out some of the folks that are our Project Delivery Team with the Corps of Engineers at Buffalo, please if you would stand when I say your name – Traci Clever, our Deputy for Programs and Project Management; Colin Ozanne, from our Office of Counsel; Bill Frederick, Environmental Projects Team Lead; Dave Frothingham, Environmental Engineering Section Team Lead; Duane Lenhardt, Harshaw Site Project manager; Andrea Kolhoff, Harshaw Site Project Engineer; Karen Keil, our Risk Assessor for the Site; Hank Spector, our Health Physicist; and our Outreach Team, Arleen Kreusch and Natalie Watson as well as our Public Affairs Officer, Bruce Sanders.

We also have two representatives from the Department of Labor Energy Employees Occupational Illness Compensation Program – Saul Berbinskas and Tina Smith. When you are finished providing us comments on the proposed plan you will have the opportunity to ask questions of them regarding their program.

When you came in tonight you should have filled out and returned a sign-in card. If anyone did not, please see Arleen or Natalie at the sign-in table so you can fill one out if you have any comments that you would like to make this evening. On the card, there is a box to mark if you wish to make a statement or ask a question. If, during this meeting, you decide you would like to speak and did not check the box, please see Arleen or Natalie and we'll make sure that you have an opportunity to speak this evening.

Just as a reminder, the comment period for this Proposed Plan opened on April 26. You still have until May 26 to provide us with your comments either through mail or email.

AGENDA

- Project Introduction
- Summary of Remedial Investigation Findings in IA-06
- Proposed Plan for IA-06
- What's Next
- Comments



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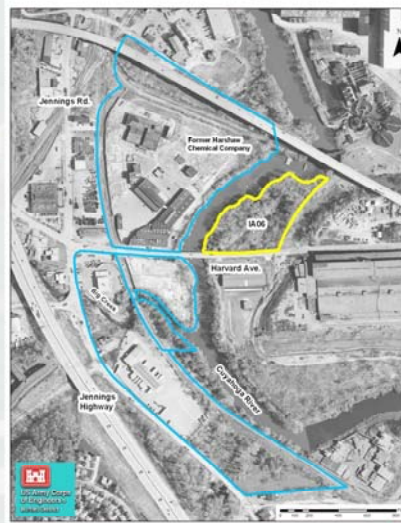
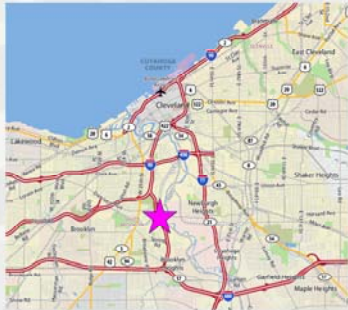
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Speaker: LTC Snead, USACE

Again, welcome. This is the agenda that we're going to follow tonight, Duane Lenhardt, our Project manager will provide you with overview of the project. Duane will be followed by Andrea Kolhoff our Project Engineer, who will give the brief on the technical aspects of the proposed plan. We will then open up the floor to record your comments regarding the IA-06 Proposed Plan. The transcript from this portion of the meeting will be posted on our website when it becomes available. Next slide. I'll now turn this meeting over to Duane Lenhardt.

SITE DESCRIPTION

- Former Harshaw Chemical Site
- 1000 Harvard Avenue
Cleveland, Ohio

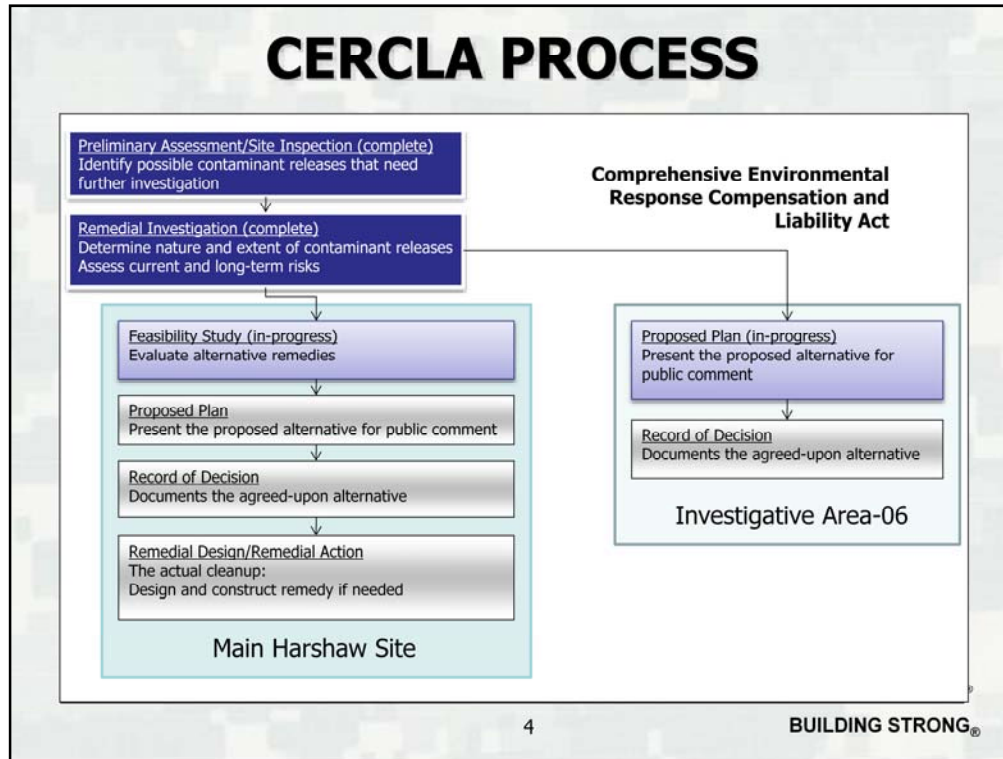


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Speaker: D. Lenhardt

- Located at 1000 Harvard Avenue in Cleveland, Ohio; approximately 3 miles south of downtown Cleveland
- Total size of the Harshaw Site is approximately 55 acres
- Located within an industrialized area adjacent to the Cuyahoga River and Big Creek
- Consists of several developed and undeveloped land parcels with multiple property owners
- To support the remedial decision-making process, the site has been divided into three distinct areas:
 - Northside – includes soil, buildings, sanitary/storm sewers, and groundwater north of Big Creek/west of Cuyahoga River (also includes sediment/surface water)
 - Southside – includes soil and groundwater south of Big Creek/west of Cuyahoga River
 - IA-06 includes soil and groundwater east of Cuyahoga River
- HCC was founded in 1905 and produced various chemicals on the Northside area until the 1980's. Remaining buildings are currently used for storage
- Between 1944 and 1959, the government contracted for the production of radiological substances in the area of Building G-1
- The IA-06 parcel was, and remains to this day, undeveloped
- The 6-acre IA-06 parcel is part of a plan developed by the Ohio Canal Corridor for extending the Towpath Trail from its current terminus at Harvard Avenue to Can Can Park Basin in downtown Cleveland.



- The Corps mission to cleanup sites contaminated during the early years of the atomic energy program follows the process used by the U.S. EPA for the investigation and remediation of other hazardous waste sites
- This process is outlined in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) enacted into law at the same time (1974) that Congress established the program to remediate radiologically contaminated sites
- This program under which the Corps operates is known as the Formerly Utilized Sites, Remedial Action Program (FUSRAP)
- The Harshaw Site is a relatively new FUSRAP Site and was added to the program in 1999
- The CERCLA process consists of a series of steps that build upon one another. The process starts with a preliminary assessment followed, if necessary, by further investigation and studies leading to a remedial design and cleanup
- The Remedial Investigation of IA-06 indicated the area did not require additional action for FUSRAP-related materials since human health risks do not exceed limits established by the U.S. EPA.
- As a result, the Corps recommends no further action for IA-06 under FUSRAP.

IA-06 DESCRIPTION

- Mostly wooded floodplain
- No evidence of past development
- Current land use – zoned industrial
- Planned future land use – recreational



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- IA-06 is 6-acre mostly wooded flood plain. This area is regularly inundated with Cuyahoga River waters.
- There is no evidence of past development in IA-06. This area is not currently used by the property owner, zoning is industrial.
- Community master plans for this area indicate recreational development.

INVESTIGATION SUMMARY

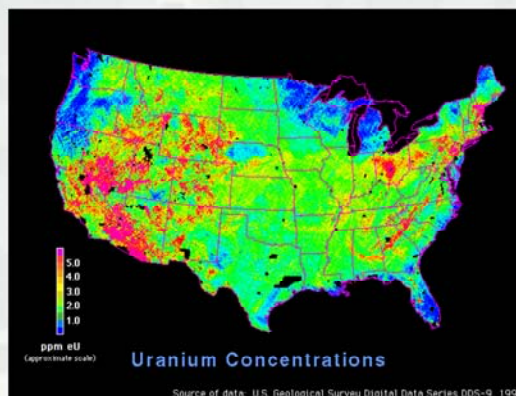
- Determine naturally occurring levels of radiation in the vicinity of the Harshaw Site
- Nature/extent of FUSRAP-related materials
- Groundwater modeling
 - Contaminant fate and transport
- Baseline Risk Assessment
 - Human Health Risk Assessment
 - Screening Level Ecological Risk Assessment



- Determining the nature and extent of FUSRAP-related materials is one of the key objectives of the Remedial Investigation and supports all subsequent evaluations and assessments conducted under the CERLCA process
- A key component of determining if an area is contaminated is to determine levels of radioactive elements in the area being investigated and compare those levels against naturally occurring levels.
- Groundwater modeling is used as a predictive tool to support the development and evaluation of potential remedial alternatives and contaminant fate/transport
- The fate and transport of groundwater contamination is used to predict potential future risks and to help evaluate the effectiveness of potential remedial alternatives
- The Baseline Risk Assessment is conducted to evaluate the potential risks to modeled receptors based on various land-use and exposure scenarios
- The Screening Level Ecological Risk Assessment is conducted to evaluate the potential for risks to plants and animals

NATURALLY OCCURRING RADIATION

- Uranium and other radionuclides and metals occur naturally in the Earth's crust
- Found in rock, soil, air and water
- Varies across the country



- Many radionuclides are naturally occurring elements appearing in ores and minerals.
- As a result, they are present in rock, soil, air and water.
- Some geologic formations, such as granite or shale, have naturally higher levels of radioactivity than other rocks and sediment, for example, sandstone or sand. Therefore, levels of naturally occurring radiation vary across the country.
- The red patch seen in central and western Ohio is due to the Ohio Shale, which has more naturally occurring uranium than other adjacent rocks. The Ohio Shale was also scoured by glaciers and thus the natural uranium in the rock has been redeposited around the state as glacial ground moraine or cover (thus its natural radioactivity exists beyond where the original rock is naturally found).
- This is why we performed sampling close to Harshaw to be indicative of naturally occurring levels in the Cleveland area, but far enough away as to not be impacted by the MED activities that took place there.

IA-06 RESULTS

- No imminent threat to human health or the environment
- No impacts in the Cuyahoga River or Big Creek adjacent to the Site
- No long-term risks from FUSRAP-related materials that exceed established risk levels



- No significant FUSRAP impacts were identified in IA-06
- These results are consistent with the lack of any buildings or production processes conducted in this area in the past
- No unacceptable risks identified for human health (recreational use) or ecological receptors from FUSRAP-related materials

FIELD ACTIVITIES



Cuyahoga River Bank



Civil Survey



Survey Control Line



Geoprobe Soil Sampling



Site Clearing



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- The photos above illustrate the data collection activities conducted in IA-06 during the Remedial Investigation
- Photo Upper Left – view of IA-06 northern Cuyahoga River bank looking south
- Photo Upper Middle – civil survey conducted to establish control points for gamma radiation walkover and geophysical surveys
- Photo Upper Right – gamma radiation walkover and geophysical control line
- Photo Lower Left – Geoprobe soil sampling in IA-06
- Photo Lower Right – north central portion after site clearing (note former sheet pile wall)

NON-INTRUSIVE FIELDWORK



EM-31



Gamma walkover survey



Gamma walkover survey equipment

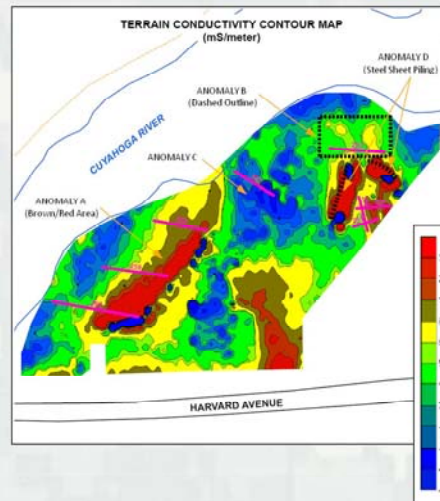


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- Prior to performing soil sampling, the Corps used remote sensing techniques to help identify potential sampling locations.
- Techniques used include:
 - electromagnetic terrain conductivity (EM-31) which maps geologic variations or any subsurface feature associated with changes in ground conductivity
 - ground penetrating radar was used to further investigate anomalies detected by the EM and can produce depth information
 - Gamma is a type of radiation which, using this technique, can be detected in surface soils. By performing gamma walkover surveys we can gather a lot of information without having to penetrate soil which can help guide intrusive sampling.

GEOPHYSICAL SURVEY



- Electromagnetic Terrain Conductivity
- Ground penetrating radar
- Anomaly A – represents an elevation change
- Anomalies B & C – no distinguishing visual characteristics, no radiological signature
- Anomaly D – old sheet pile wall

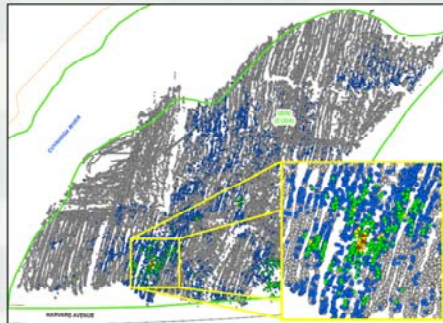


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- The Corps performed two types of geophysical surveys, EM-31, and ground penetrating radar.
- This data was then color coded to help us detect anomalies in the ground.
- Colors indicate a change in soil properties such as from sand to clay. High negative values, those shown as deep blues, could indicate buried metals.
- EM-31 is capable of seeing 15-20 feet deep but all we see is a two-dimensional map. Therefore we perform ground penetrating radar as well which gives us a better idea of the actual depth of the anomalies we're seeing.
- We identified anomalies by abrupt changes in values, such as the red area right next to the blue, as shown in anomaly A.
- All these areas were targeted for further inspection and intrusive sampling (for example, drilling soil borings).
- None of the anomalies identified by the geophysical survey presented impacts by FUSRAP-related materials.

GAMMA WALKOVER SURVEY



LEGEND

Soil: BKG 11,840 CPM

○	0 - 6564
●	1 - 2000
●	2001 - 4000
●	4001 - 6000
●	6001 - 6920

- Field Instrument for the Detection of Low Energy Radiation
- Yellow and red dots indicate elevated gamma readings
- Targeted areas for soil samples

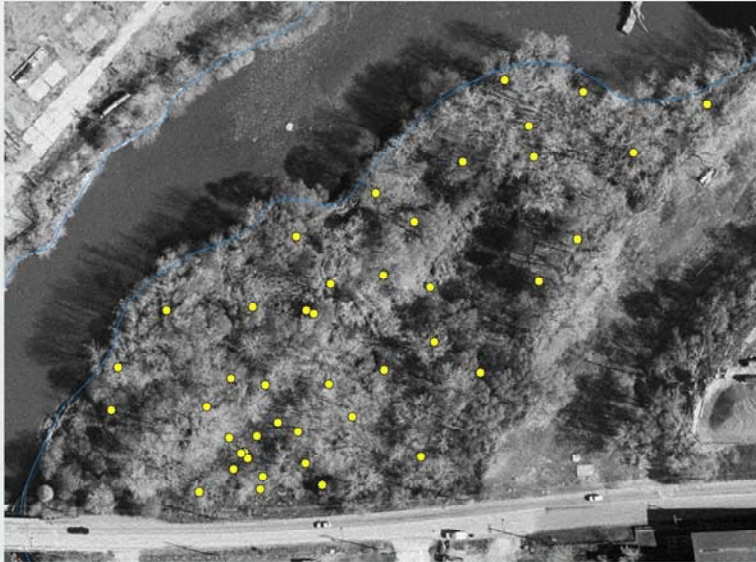


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- The Corps also performed a gamma walkover survey.
- Data from the GWS were evaluated, color coded, and examined for trends.
- The survey showed one main area of interest in IA-06 as shown by the red and yellow dots. These areas were approximately 1.5x background values. “Background” in this case is much like the naturally occurring radiation discussed a few slides ago. In this case however, we needed to determine “background” numbers for a variety of material types ranging from soil to concrete and gravel, since each will have its own radioactive signature. In IA-06 however, we only encountered soil but we collected a variety of readings for materials we found elsewhere on the site.
- These results were used to help guide our intrusive sampling.

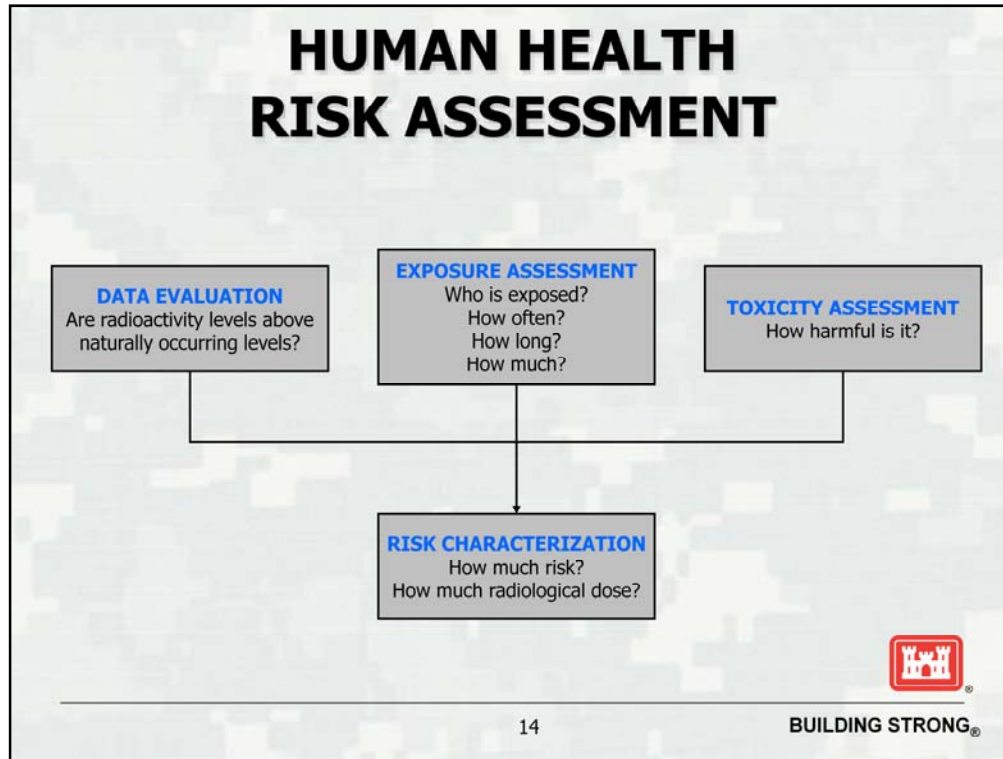
SOIL SAMPLING LOCATIONS



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- There are a total of 113 soil samples collected from depths up to 14 feet in 41 different locations.
- The cluster of soil borings in the south central portion of IA-06 were collected to further examine the area which showed elevated activity on the gamma walkover survey.
- The localized soil impacts are thought to be associated with the placement of fill material and debris.
- The minimal soil impacts in this area are present in shallow soil.



•The Baseline Risk Assessment conducted during the IA-06 risk evaluation included two primary components:

- * Human Health Risk Assessment
- * Screening Level Ecological Risk Assessment

•The Human Health Risk Assessment is conducted to evaluate the potential risks based on various land-use and exposure scenarios:

- * Trespasser/recreational user (current/future) adult/adolescent
- * Maintenance worker (future)
- * Industrial worker (future)
- * Construction worker (future)
- * Resident (future) adult/child
- * Subsistence farmer (future) adult/child

•The Screening Level Ecological Risk Assessment is conducted to evaluate the potential for unacceptable risks to representative modeled ecological receptors; if potential unacceptable risks are identified then a Baseline Ecological Risk Assessment would be conducted to more thoroughly evaluate these risks

The diagram illustrates the pathways of air pollutants from natural causes to human exposure. It shows a cycle where pollutants from natural causes (like a volcano) and human activities (like a house) enter the air. These pollutants can be deposited via wet or dry deposition onto trees and crops, or through soil contact. They can also be taken up by crops or ingested by livestock. Additionally, pollutants can be released from building materials and soil leaching into the ground, eventually reaching surface water through groundwater contact. Finally, humans are exposed through inhalation, crop uptake, food/milk/crop ingestion, and surface water/aquatic food ingestion.

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FUSRAP RISK SUMMARY

- Examined potential risk for several land-use scenarios
- Estimated risks for recreational land use are well below established limits
- Ecological risk assessment did not indicate any concerns



- Soil samples were collected from the Cleveland Metroparks to help determine naturally occurring levels of radioactivity.
- There is very little radioactivity in IA-06 above naturally occurring levels.
- The Corps used risk modeling techniques established by the U.S. EPA to estimate potential long-term risks associated with different land uses.
- Potential risks to human health from FUSRAP-related impacts in IA-06 were comparable to risks posed by naturally occurring radioactivity.
- The screening level risk assessment concluded that ecological risk is negligible and no further action is warranted with respect towards ecological receptors in IA06. There are several lines of evidence that support this decision: IA06 is located in a heavily industrialized area of Cleveland and has limited adequate habitat for small mammals, birds and other fauna. There are no sensitive habitats or threatened and endangered species on the site that warrant special consideration or protection. No ecosystem or habitat restoration is planned for the site.

IA-06 PROPOSED PLAN

The Corps recommends no further action under FUSRAP



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- The lack of significant FUSRAP impacts in IA-06 formed the basis for the no further action recommendation
- The conditions identified during the Remedial Investigation and the planned use of this property as part of the Ohio Canal Corridor – Towpath Trail supported the acceleration of IA-06 through the CERCLA process (relative to the remainder of the Harshaw site)

WHAT'S NEXT

- **Proposed Plan**

- ▶ 30-day public comment period ends May 26, 2010

- **Record of Decision**

- ▶ Will include the transcript from tonight's meeting and responses to comments on the Proposed Plan
- ▶ Will document final decision
- ▶ Will be placed in Administrative Record for public availability



Speaker: D. Lenhardt

ADDITIONAL INFORMATION

- The Administrative Record is located at:
 - ▷ Cuyahoga County Public Library
Brooklyn Branch
4480 Ridge Road
Cleveland, Ohio 44134
 - ▷ www.lrb.usace.army.mil/fusrap/harshaw



HOW TO SUBMIT COMMENTS

- Comments submitted tonight, verbally or on the provided comment sheets
- Mailed Comments:
 - ▶ Postmarked by May 26, 2010 and mailed to:
 - ▷ U.S. Army Corps of Engineers
FUSRAP Team
1776 Niagara Street
Buffalo, NY 14207
- E-Mailed Comments:
 - ▶ Electronically sent by May 26, 2010 to:
 - ▷ fusrap@usace.army.mil



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A court reporter is present tonight to capture your verbal comments. If you read a prepared statement, please provide that to her so that she may accurately transcribe it for the transcript.

Written comments can be placed in the comment box near the exit.

Additional written comments on the IA-06 Proposed Plan may be submitted either electronically or by mail by May 26, 2010, which is the end of the Public comment period for the Proposed Plan.

You can also submit comments on the self-addressed comment mailer page attached to the Proposed Plan.

Copies of the Proposed Plan are available at the entrance table to this meeting or can be downloaded from our website.

CONTACT US

- USACE Buffalo District FUSRAP Team

Website: www.lrb.usace.army.mil/fusrap

FUSRAP E-Mail Address: fusrap@usace.army.mil

Mailing Address:
FUSRAP Team
1776 Niagara Street
Buffalo, NY 14207

Telephone:
1-800-833-6390 (Option 4)



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There is a link to Harshaw Site information on the web at the address listed on the slide. You can find the IA-06 Proposed Plan on the website and tonight's presentation will be available on the web later this week

An electronic distribution mailing list (e-mail) also is currently being developed – if interested please sign up with us before you leave

You may also provide us with your e-mail address using the FUSRAP Team e-mail address noted above

Public participation is a key component of the CERLCA remedial action process – please join us and be a part of the project as we move forward!

We will now move to the comment portion of this meeting which will be followed by a few comments by the Department of Labor regarding the Energy Employee Occupational Illness Compensation Program

The team will be available to answer additional questions after the meeting

I'll now turn this over to Arleen Kreusch, who will facilitate the comment portion of this meeting.

COMMENT SESSION

- Please adhere to the following ground rules when providing comments:
 - ▶ One person speaks at a time
 - ▶ Please use the microphone when speaking
 - ▶ State your name and affiliation
 - ▶ Limit your comments to five minutes to allow everyone an opportunity to speak
 - ▶ Comments should relate to IA-06 and the Proposed Plan



Thank you Duane.

As Duane mentioned, we have a court stenographer here tonight to record the proceedings. We have a few ground rules listed on this slide.

- Please let's have only one person talking at a time.
- Please let us know who you are and who you are representing when you speak so that we have an accurate record.
- To make sure that we are able to hear from everyone that would like to speak tonight, please limit your comments to five minutes
- Also, please limit your comments to the IA-06 Proposed Plan.
- I have the cards of those who indicated they wanted to speak tonight. I will start with the elected officials and agencies and then the rest of the cards are in the order of when you came in.