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**US ARMY CORPS OF ENGINEERS
HUNTINGTON DISTRICT**

**Public Meeting Transcript
Presentation of the Ash Pits 1 & 3 Ponds Proposed Plan
Presentation of the Powerhouse No. 2 Ash Pit Proposed Plan
Presentation of the Acid Area 1 Proposed Plan
Plum Brook Ordnance Works, Sandusky, Ohio
February 26, 2015**

Meeting Facilitator – Rick Meadows, USACE PBOW Project Manager
Presentation of the Proposed Plan – Steve Downey, Project Manager, CB&I

Good evening, its 5 minutes after 7:00 p.m., so why don't we go ahead and get started. About everybody who is going to be here is already here. My name is Rick Meadows, I am the Project Manager for the Huntington District Corps of Engineers and we have the lead on the environmental restoration at the former Plum Brook Ordnance Works. I just want to remind everybody that this is the official public meeting and it is being recorded and will be transcribed into a written document. If you have a comment, please try to remember to state your name so we can get it for the record. If you have a question, or comment and concern and you don't want to be recorded, Helen has index cards and pens and you can write it down and we will address it, or if there is something you want us to follow-up with at a later time, you can leave that as well.

With that, we have three projects we're covering, Ash Pits 1 & 3, Powerhouse No. 2 Ash Pit, and Acid Area 1, and this does start the official public comment period for each one of those. The comment period is scheduled to end 30 March 2015.

(Mr. Meadows turned the meeting over to Mr. Steve Downey)

Most of you know me, I'm Steve Downey, Project Manager with CB&I, we are the company who's been contracted by the USACE to do all of the site investigations, risk assessments, feasibility studies, proposed plans and decision documents. The first one we'll cover is Ash Pits 1 and 3.

PROPOSED PLAN FOR ASH PIT NO. 1 AND ASH PIT NO. 3

PURPOSE OF THE PROPOSED PLAN

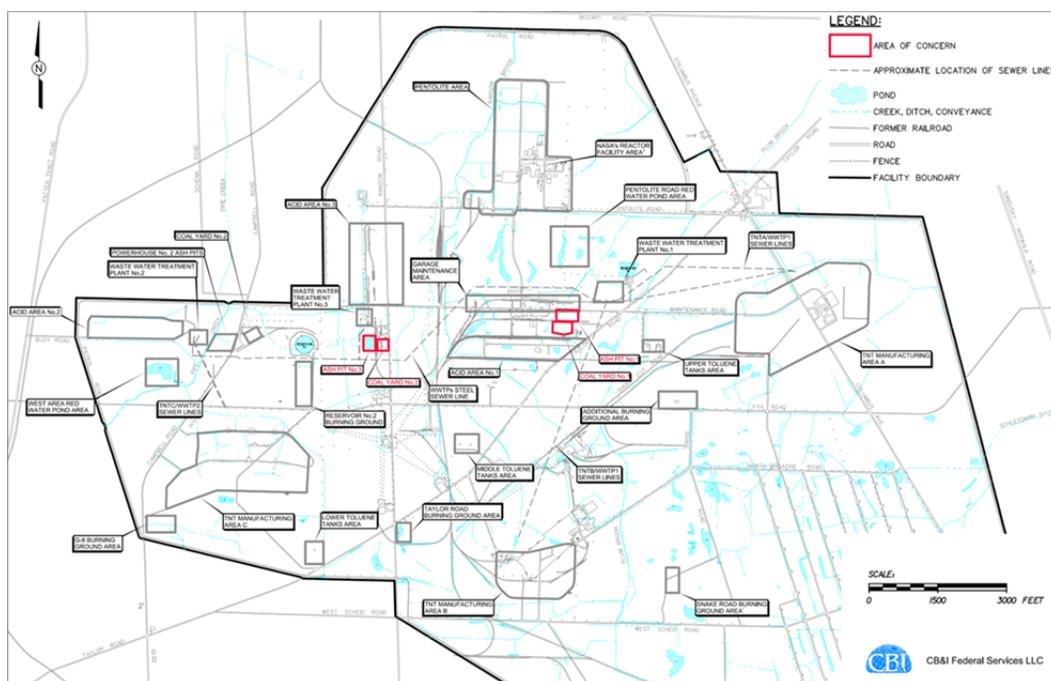
The purpose of the Ash Pit No. 1 and Ash Pit No. 3 Proposed Plan is to present the Preferred Alternative proposed for Ash Pit No. 1 and Ash Pit No. 3, including the coal yards in each of those areas. Based on results of the remedial investigation (RI) for these sites, remedial action to protect human health and the environment are not required. This is also provided for the 30-day public comment period (as Rick mentioned for the 30-day comment period).

COMMUNITY INVOLVEMENT

As far as Community Involvement, the Proposed Plan is made available to the public for a review and comment period, Rick mentioned the comments are due by March 30. The comments will be included in the Responsiveness Summary of the Ash Pit No. 1 and Ash Pit No. 3 Decision Document and documented in the Administrative Record (AR). Comments will be evaluated for consideration in final selection of remedial alternative. The selected response action will be documented in the Decision Document.

As I mentioned there is no action required for soil, sediment, surface water, and groundwater based on the investigations and the risk assessments performed.

This shows you the location (figure inserted into transcript) (Mr. Downey pointed out the locations of the Ash Pit No. 1 and Ash Pit No. 3).



HISTORY

A little history on Ash Pit No. 1, it consists of two areas: the ash pit which was a disposal area for the coal ash, and Coal Yard 1 which was the coal storage area for that powerhouse. It's approximately 3.7 acres in size. The Ash Pit 1 area has been regraded and it is relatively flat and covered in dense dogwood thickets and old fields.

In Coal Yard No. 1 area, there is still some residual coal on the ground surface indicating there was minimal or no regrading. The area is covered in grass and brush vegetation.

This is an aerial photo (figure of Ash pit 1 inserted into transcript) from back during the time when the associated structures were in operation.



Ash Pit No. 3 consisted of two areas, the ash pit and the coal yard. It's about 2 acres in size. Ash Pit No. 3 area is relatively unchanged, currently is an ephemeral (water is intermittent) pond and consists of a marsh surrounded by brush and old fields. The coal yard area was partially regraded for NASA K-Site parking area, the remainder is maintained as lawn.

This is an aerial photo (figure of Ash Pit 3 inserted into transcript) from back during the 1940s of the powerhouse (Mr. Downey pointed out the coal yard and the ash pit).



SUMMARY OF INVESTIGATIONS

The investigations included surface soil, subsurface soil, surface water and sediment samples collected at Ash Pit No. 1 and surface water and sediment samples collected at Ash Pit No. 3. Surface soil, subsurface soil, surface water, sediment and groundwater samples were collected and analyzed for Ash Pit No. 1 and Ash Pit No. 3. There were three Site Characterization Reports that were issued in 2010, 2012 and 2013. There were two Baseline Human Health Risk Assessments issued in 2011 and 2013, and three Screening Level Ecological Risk Assessments issued in 2011, 2012 and 2013. In Ash Pit 3 there was an initial investigation and we had limited access to the area due to the eagle's nest, then we went back at a later time and did some additional investigation when we would not disturb the nesting of the eagles.

Summary of investigation in Ash Pit No. 1 and Coal Yard No. 1. There were limited detections of SVOCs in surface soil and sediment and in Ash Pit No. 3 and in Coal Yard No. 3 there were limited detection of arsenic and Aroclor 1260 in surface soil and sediment. All of these were below any action level.

RISK ASSESSMENT

For the Human Health Risk Assessment, exposure to DOD-related chemicals at Ash Pit No. 1 and 3 soils, surface water and sediment would not result in an unacceptable human health risk or adverse noncancer health effects. As far as the Ecological Risk Assessment, the potential for adverse ecological effects is regarded as extremely low for all four sites.

The basis for No Action is that no action is required for Ash Pit No. 1 and Ash Pit No. 3 and the associated coal yards because the RI did not reveal the presence of any contamination that would pose a threat to human health and the environment.

That's it for Ash Pits 1 and 3, any questions on that one?

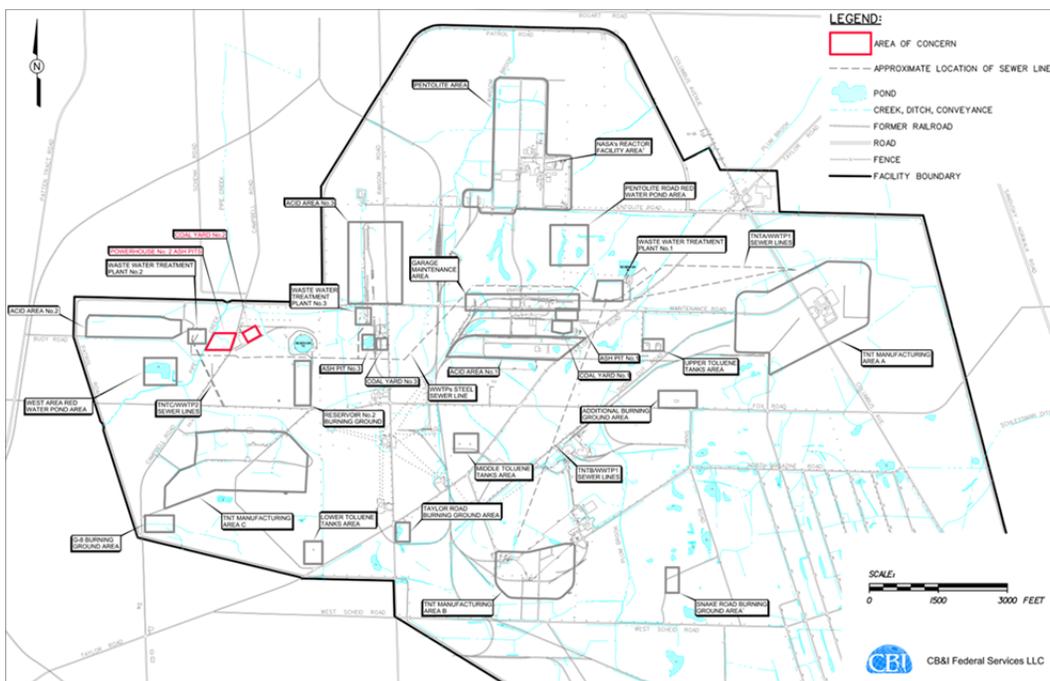
Mr. Downey asked if there were any questions, and there were no questions from the audience.

PROPOSED PLAN FOR POWERHOUSE NO. 2 ASH PIT PURPOSE OF THE PROPOSED PLAN

The purpose of the Proposed Plan for Powerhouse No. 2 Ash Pit is to present the Selected Alternative based on the remedial investigations and any remedial actions required to protect human health and the environment, which in this case, like the others is not required, and provides for a period of public comment. As far as community involvement, the Proposed Plan is made available to the public for the 30-day comment period.

For Powerhouse No. 2 Ash Pit, no action is required for soil, sediment, surface water and groundwater.

This (figure inserted into transcript) shows the location of the ash pit 2 and the associated coal yard (Mr. Downey pointed-out the locations of the ash pit and coal yard).



HISTORY

A little history of the Powerhouse No. 2 Ash Pit, it consists of two areas, the ash pit and the coal yard. Its approximately 3.2 acres in size, is relatively unchanged and covered in successional woods and lowland woods. In the Coal Yard No. 2 area there is residual coal on the ground surface which indicates minimal or no regrading and is covered in grass and brush vegetation.

This (figure inserted into transcript) is an aerial photo showing the coal yard no. 2 and Ash Pit No. 2 back when the plant was in operation.



SUMMARY OF INVESTIGATIONS

During the site investigation, surface soil and subsurface soil samples were collected at Ash Pit No. 2. For the remedial investigation, surface soil, subsurface soil, surface water, sediment and groundwater samples were collected. The Site Characterization Report was issued in 2010 and 2012, the first report was for the ash pit and the second was an addendum for the coal yard. The Baseline Human Health Risk Assessment was published in 2010 and 2013 and the screening Level Ecological Risk Assessment was published in 2010 and 2013.

In summarizing the investigation for Ash Pit No. 2, there were no analytes exceeding screening values in surface water. There were limited detection of metals, PCBs (one sample), and SVOCs in surface soil and/or sediment. None of these exceeded any action levels.

For Coal Yard No. 2, there was one SVOC that exceeded screening levels and all of the other analytes detected were below screening levels.

RISK ASSESSMENTS

For the Human Health Risk Assessment, exposure to DOD-related chemicals at Ash Pit No. 2 and Coal Yard No. 2 soil, surface water and sediment would not result in an unacceptable human health risk or adverse noncancer health effects. For the Ecological Risk Assessment, the potential for adverse ecological effects is regarded as extremely low for both sites.

BASIS FOR NO ACTION

No action is required for Ash Pit No. 2 and Coal Yard No. 2 because the RI did not reveal the presence of contamination that would pose a threat to human health and the environment.

Any questions on that one?

Mr. Downey asked if there were any questions, and there were no questions from the audience.

PROPOSED PLAN FOR ACID AREA 1

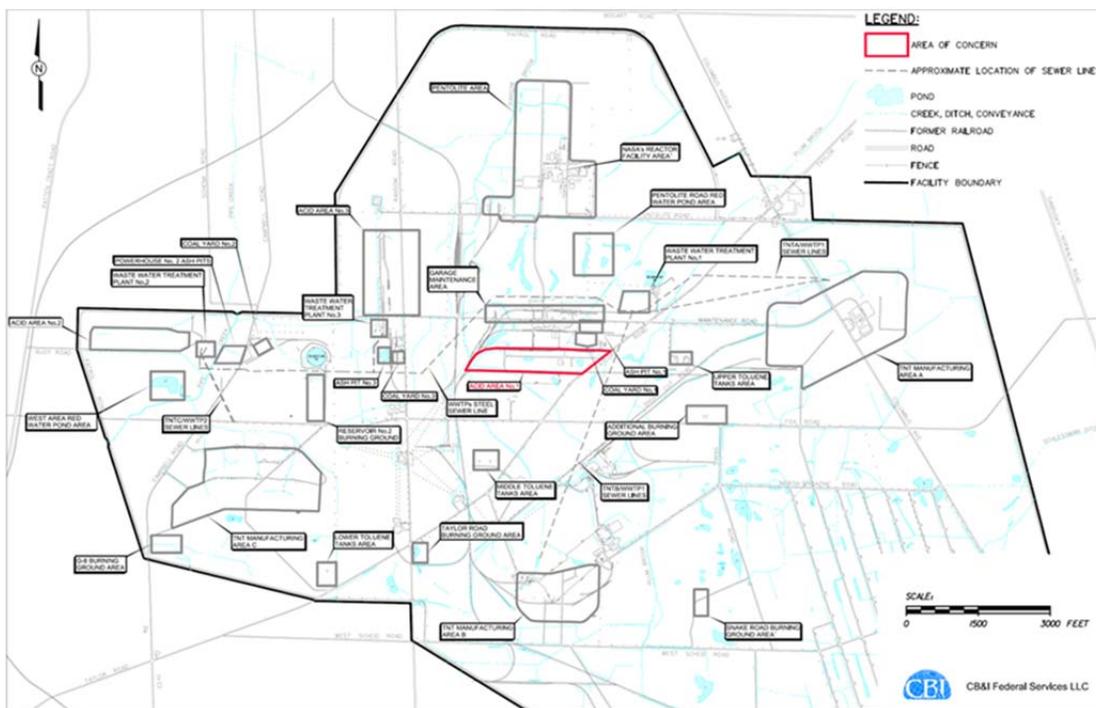
PURPOSE OF THE PROPOSED PLAN

The purpose of the Proposed Plan is to present the Preferred Alternative and allow for public comment over a 30-day comment period.

COMMUNITY INVOLVEMENT

The Proposed Plan is made available to the public for a 30-day period and comments are due on 30 March 2015 for this one as well.

Acid Area 1 soil remediation is required due to PCB contamination. There is no action required for sediment, surface water and groundwater. This (figure inserted into transcript) shows the location of Acid Area 1, pretty much in the center of Plum Brook Station.



SUMMARY OF PREFERRED REMEDIAL ALTERNATIVE FOR ACID AREA NO. 1

USACE will complete remedial action that consists of excavation of approximately 28,188 cubic yards (CY) of surface and subsurface soil. Approximately 747 CY of that total is assumed to be TSCA PCB remediation waste from locations with total PCB concentrations exceeding 50 mg/kg.

Offsite disposal of all excavated soil will include the roughly 27,441 CY that is below the TSCA level and will be disposed at an approved solid waste landfill and the 747 CY will be disposed at a TSCA-approved PCB disposal facility. The area will be backfilled with imported clean fill and

the site will be restored. The selected response action will be documented by the USACE in a Decision Document for Acid Area No. 1

HISTORY

Acid Area 1 was used for manufacturing of nitric, sulfuric and oleum acids, it is approximately 17 acres in size and comprised of buildings and above ground storage tanks. Most structures were dismantled and removed between 1958 and 1971. There is one building that remains and that is Building 302 and that is being used by NASA. The area is essentially a flat, open field covered with tall grass, low shrubs and trees. There are four drainage features also present.

This (figure inserted into transcript) is an aerial photo from the 1950s showing the Acid Area and you can see over there to the left the location of Building 302 that is still present.



SITE INVESTIGATION

The Site Investigation consisted of surface soil, subsurface soil and groundwater samples collected from 15 soil borings and two monitoring wells. The Remedial Investigation (RI) consisted of surface soil, subsurface soil, surface water, and sediment samples that were collected and analyzed.

The Site Characterization Report was issued in 2009. The Baseline Human Health Risk Assessment was issued in 2010 and the Screening Level Ecological Risk Assessment was issued in 2010. The Feasibility Study was completed in 2013 and when we first started preparing we realized we had some---not really data gaps---but we didn't have enough information to determine the full extent of the area that needed to be remediated so we did some additional PCB delineation sampling in surface soil.

SUMMARY OF INVESTIGATION AND DELINEATION RESULTS

For the surface soil, PCBs were detected at concentrations up to 60.3 mg/kg. For subsurface soil, PCBs were generally at low concentrations where they were detected, with a maximum detected concentration of a little under 5 mg/kg. For sediment, PCBs were detected at concentrations below RGs and in surface water, PCBs were not detected.

SUMMARY OF RI RISK ASSESMENT RESULTS

Human Health Risk Assessment

Looking at residential exposure, exposure to surface and subsurface soil exceeds the PBOW cancer and noncancer risk goals. Exposure to subsurface soil exceeds the PBOW cancer risk goal and equals the noncancer risk goal. Exposure to groundwater exceeds cancer and noncancer risk goals, however, the risk-driving chemicals are not DOD-related they're naturally occurring. Monitoring wells lack sufficient yield making exposure to groundwater implausible.

Ecological Risk Assessment

The impacts to plants appear to be insubstantial. Only a low potential for risk from exposure to contaminants was found for terrestrial receptors.

There were four alternatives evaluated, Alternative 1, is the No Action alternative that is required by the process; Alternative 2, which is the preferred alternative is excavation and off-site treatment and disposal; Alternative 3, is excavation, on-site chemical oxidation, and off-site disposal; and Alternative 4 is excavation, off-site incineration and off-site disposal.

This (figure inserted into the transcript) is a summary table showing the associated costs and the time required to complete the remedial action.

| Alternative No. | Description | Cost | Duration (Months) |
|-----------------|---|--------------|-------------------|
| 1 | No Further Action | \$0 | 0 |
| 2 | Excavation and Off-Site Treatment/Disposal | \$5,800,000 | 21 |
| 3 | Excavation, On-Site Chemical Oxidation, and Off-Site Disposal | \$6,100,000 | 26 |
| 4 | Excavation, Off-Site Incineration and Off-Site Disposal | \$29,000,000 | 21 |

Of course everything is zero for the No Further Action option, but that does not eliminate the risk. The selected alternative is estimated to cost \$5.8 million and can be completed in about 21 months. The Alternative 3, with the on-site treatment is a little more expensive at \$6.1 million and takes a little longer at 26 months. The last alternative, where we would excavate and send the TSCA-waste off to be incinerated is extremely expensive.

Details of Alternative 1, this is the no action alternative. As I mentioned, it is required by the NCP, it does not reduce human health risks to levels considered acceptable by US EPA (threshold criterion), it does not employ removal, containment, or treatment actions that mitigate impact of source areas on receptors or other media. Thus, this alternative was not recommended.

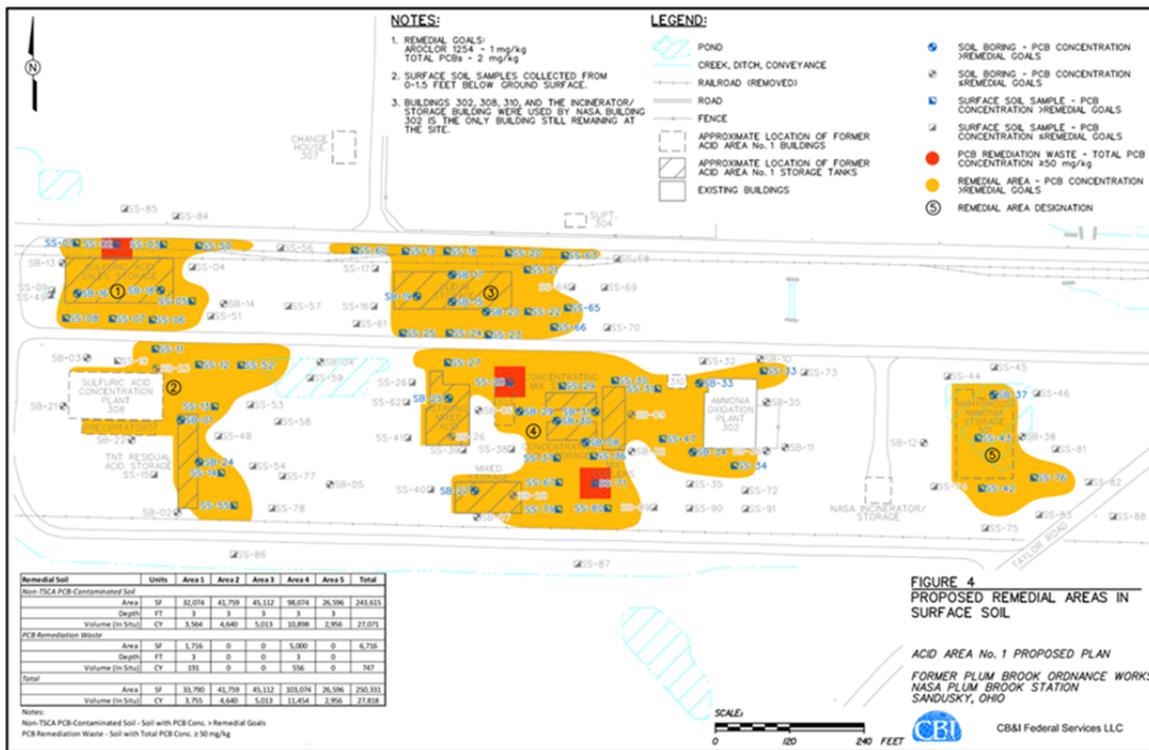
The preferred alternative which I have already gone through includes excavation of a little over 28,000 cubic yards all of which would be disposed off-site with about 747 cy of that going to a TSCA-approved PCB disposal facility. The area would be backfilled with imported clean fill.

Alternative 3, somewhat similar, still excavate the roughly 28,000 cy the 747 cy would be treated on-site to reduce the PCBs to less than 50 mg/kg and once that's confirmed by sampling and analysis then all of the material would be disposed at a non-hazardous waste landfill. The area would be backfilled with imported clean fill.

Alternative 4 includes excavation, off-site incineration and off-site disposal, and again excavation of a little over 28,000 CY. The roughly 27,500 would be disposed at a non-hazardous waste landfill and the remaining portion would be disposed at a TSCA-approved incineration facility. The area would be backfilled with imported clean fill.

Acid Area No. 1 Extent of Soil Contamination

This map (figure inserted into transcript) shows the areas requiring remediation. The areas in yellow are areas where materials are below the TSCA limit would be excavated and disposed in a non-hazardous landfill. The areas in red/orange are the areas that are above 50 mg/kg, where material would be excavated for disposal at a TSCA landfill.



REMEDIAL PERFORMANCE OF PROPOSED ACTION

Alternative 2 is protective of human health and the environment; it complies with Applicable or Relevant and Appropriate Requirements (ARARs), and permanently removes COCs from Acid Area No. 1 soil at concentrations above RGs. Risk to the community or environment during implementation will be limited through best management practices during remedial action, and it is technically and administratively implementable. There are no engineering or regulatory restrictions that prevent implementation and equipment required is readily available.

PROPOSED ACTION SCHEDULE

Alternative 2 can be implemented in approximately 21 months. The general steps involved with implementation include:

- Work plan development
- Mobilization and excavation of 28,000 CY of soil
- Off-site disposal of nonhazardous soil about 27,400 CY
- Off-site disposal of TSCA PCB remediation waste of about 747 CY
- Backfill with imported clean soil
- Site restoration
- Demobilization

BREAKDOWN OF THE COSTS

You can see the breakdown (figure inserted into transcript) of the work plans, reports and procurements, mobilization and demobilization, site prep, excavation, off-site disposal and site restoration. Then add in the contingency and contractor oversight fee to come up with a total of \$5.8 million.

| Item | |
|---|------------------|
| 1. Work plans, reports and procurement | \$100,000 |
| 2. Mobilize/demobilize equipment and personnel. | \$6,000 |
| 3. Site Preparation | \$61,635 |
| 4. Excavate contaminated soil | \$1,198,205 |
| 5. Off-site disposal | \$2,570,701 |
| 6. Site restoration | \$561,019 |
| Subtotal | \$4,497,600 |
| Contingency (25%) | \$1,124,400 |
| Contractor Oversight (5%) | \$224,880 |
| Total Cost | 5,846,900 |

That's it for Acid Area 1. Are there any questions?

Mr. Downey asked if there were any questions, and there were no questions from the audience.

Rick Meadows – If there are no questions, that concludes the formal presentation but before we actually close, I'd like to remind everyone that we do have a Restoration Advisory Board meeting scheduled for March 26 (2015), assume it will be in this building, maybe not this room, but at least this building. We also hope to have another Proposed Plan presentation on Wastewater Treatment Plant 1 and 3. That'll be March 26 (2015), starting at 7:00 p.m. If there are no questions, we will formally conclude.

Proposed Plan for Ash Pit No. 1 and Ash Pit No. 3 Former Plum Brook Ordnance Works Sandusky, Ohio

Public Meeting 26 February 2015

Presented by

Steve Downey, PE, PMP
Project Manager
CB&I Federal Services LLC
Knoxville, TN



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Purpose of the Ash Pit No. 1 and Ash Pit No. 3 Proposed Plan

- Present the Preferred Alternative proposed for Ash Pit No. 1 and Ash Pit No. 3 (including Coal Yards No. 1 and 3)
 - ▶ Based on results of remedial investigation (RI)
 - ▶ Remedial actions to protect human health and the environment are not required
- Provide for public comment



Community Involvement

- The Proposed Plan is made available to the public for a review and comment period
- At the end of the review and comment period (30 March 2015), comments will be:
 - ▶ Included in the Responsiveness Summary of the Ash Pit No. 1 and Ash Pit No. 3 Decision Document
 - ▶ Documented in the Administrative Record (AR)
 - ▶ Evaluated for consideration in final selection of remedial alternative
- Selected response action will be documented in the Ash Pit No. 1 and Ash Pit No. 3 Decision Document

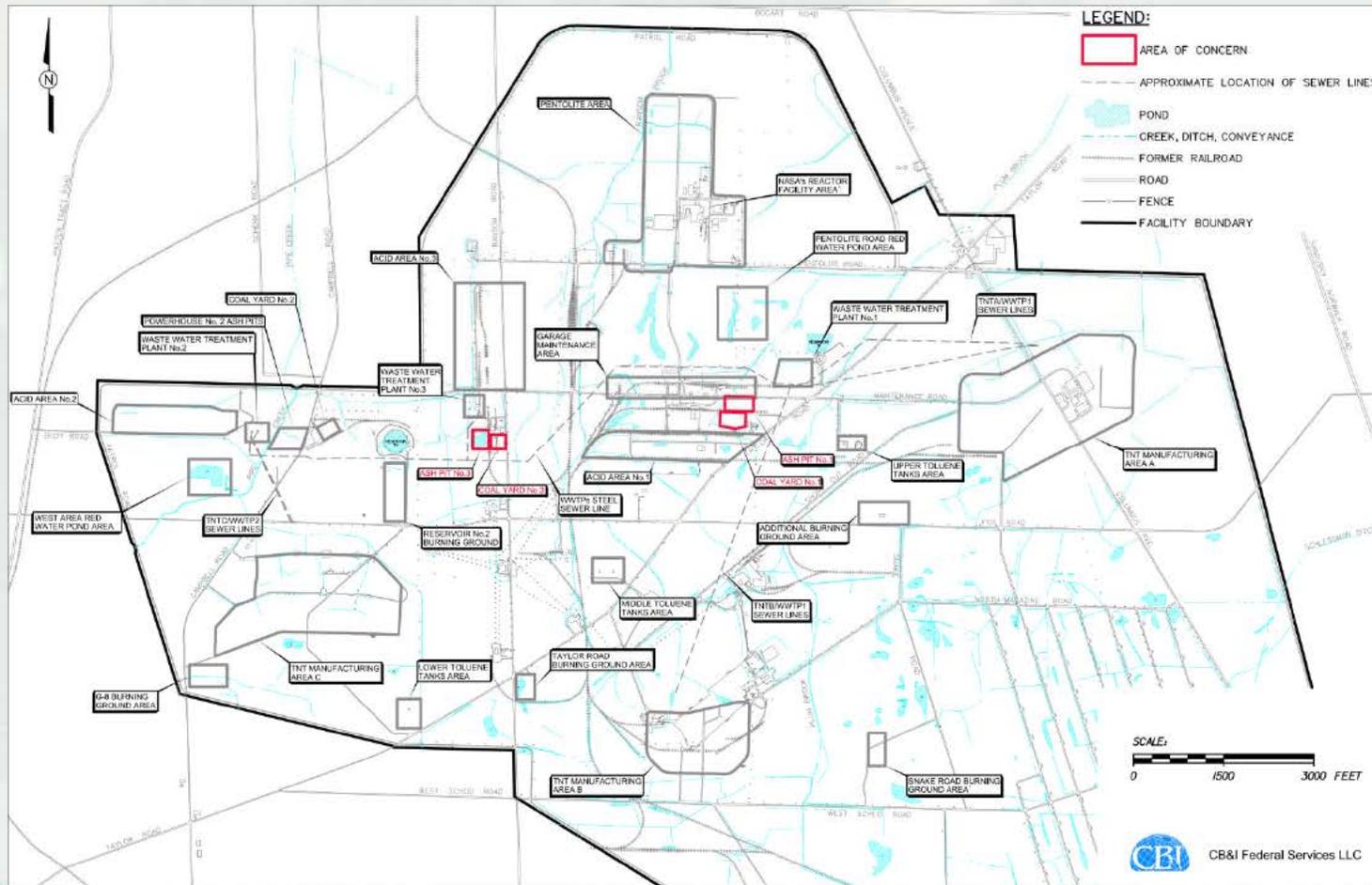


Ash Pit No. 1 and Ash Pit No. 3

- No action required for soil, sediment, surface water and groundwater



Ash Pit No. 1 and Ash Pit No. 3 Locations



History of Ash Pit No. 1

- Consists of two areas
 - ▶ Disposal area for coal ash (Ash Pit No. 1)
 - ▶ Coal storage area (Coal Yard No. 1)
- Approximately 3.7 acres in size
 - ▶ Ash Pit No. 1 Area
 - Regraded and relatively flat
 - Covered in dense dogwood thickets and old fields
 - ▶ Coal Yard No. 1 Area
 - Residual coal on ground surface indicates minimal/no regrading
 - Covered in grass and brush vegetation



History of Ash Pit No. 1



History of Ash Pit No. 3

- Consists of two areas
 - ▶ Disposal area for coal ash (Ash Pit No. 3)
 - ▶ Coal storage area (Coal Yard No. 3)
- Approximately 2 acres in size
 - ▶ Ash Pit No. 3 Area
 - Relatively unchanged, currently is an ephemeral pond
 - Consists of a marsh surrounded by brush and old fields
 - ▶ Coal Yard No. 3 Area
 - Area partially regraded for NASA K-Site parking area, remainder maintained as lawn



History of Ash Pit No. 3



Summary of Ash Pit No. 1 and Ash Pit No. 3 Investigations

- Site Investigation
 - ▶ Surface soil, subsurface soil, surface water and sediment samples collected at Ash Pit No. 1 and surface water and sediment samples collected at Ash Pit No. 3.
- Remedial Investigation (RI)
 - ▶ Surface soil, subsurface soil, surface water, sediment and groundwater samples were collected/analyzed at Ash Pit No. 1 and Ash Pit No. 3
 - ▷ Site Characterization Report – 2010, 2012 & 2013
 - ▷ Baseline Human Health Risk Assessment – 2011 & 2013
 - ▷ Screening Level Ecological Risk Assessment – 2011, 2012 & 2013



Summary of Investigation

- ▶ Ash Pit No. 1/Coal Yard No. 1:
 - Limited detection of SVOCs in surface soil and sediment
- ▶ Ash Pit No. 3/Coal Yard No. 3:
 - Limited detection of arsenic, aroclor 1260 and arsenic in surface soil and sediment.



Summary of RI Risk Assessment Results

- Human Health Risk Assessment
 - ▶ Exposure to DOD-related chemicals at Ash Pit No. 1 & 3 soil, surface water and sediment would not result in an unacceptable human health risk or adverse noncancer health effects
- Ecological Risk Assessment
 - ▶ The potential for adverse ecological effects is regarded as extremely low for all four sites



Basis for No Action

- No action is required for Ash Pit No. 1 and Ash Pit No. 3 because the RI did not reveal the presence of contamination that would pose a threat to human health and the environment.



Proposed Plan for Powerhouse No. 2 Ash Pit Former Plum Brook Ordnance Works Sandusky, Ohio

Public Meeting 26 February 2015

Presented by

Steve Downey, PE, PMP
Project Manager
CB&I Federal Services LLC
Knoxville, TN



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Purpose of the Powerhouse No. 2 Ash Pit Proposed Plan

- Present the Preferred Alternative proposed for Powerhouse No. 2 Ash Pit (including Coal Yard No. 2)
 - ▶ Based on results of remedial investigation (RI)
 - ▶ Remedial actions to protect human health and the environment are not required
- Provide for public comment



Community Involvement

- The Proposed Plan is made available to the public for a review and comment period
- At the end of the review and comment period (30 March 2015), comments will be:
 - ▶ Included in the Responsiveness Summary of the Powerhouse No. 2 Ash Pit Decision Document
 - ▶ Documented in the Administrative Record (AR)
 - ▶ Evaluated for consideration in final selection of remedial alternative
- Selected response action will be documented in the Powerhouse No. 2 Ash Pit Decision Document



Powerhouse No. 2 Ash Pit

- No action required for soil, sediment, surface water and groundwater



History of Powerhouse No. 2 Ash Pit

- Consists of two areas
 - ▶ Disposal area for coal ash (Ash Pit No. 2)
 - ▶ Coal storage area (Coal Yard No. 2)
- Approximately 3.2 acres in size
 - ▶ Ash Pit No. 2 Area
 - Relatively unchanged
 - Covered in successional woods and lowland woods
 - ▶ Coal Yard No. 2 Area
 - Residual coal on ground surface indicates minimal/no regrading
 - Covered in grass and brush vegetation



History of Powerhouse No. 2 Ash Pit



Summary of Powerhouse No. 2 Ash Pit Investigations

- Site Investigation
 - ▶ Surface soil and subsurface soil samples collected at Ash Pit No. 2.
- Remedial Investigation (RI)
 - ▶ Surface soil, subsurface soil, surface water, sediment and groundwater samples were collected/analyzed at Ash Pit No. 2:
 - ▷ Site Characterization Report – 2010 & 2012
 - ▷ Baseline Human Health Risk Assessment – 2010 & 2013
 - ▷ Screening Level Ecological Risk Assessment – 2010 & 2013



Summary of Investigation

▶ Ash Pit No. 2:

- No analytes exceeded screening values in surface water.
- Limited detection of metals, PCBs (one sample), and SVOCs in surface soil and/or sediment

▶ Coal Yard No. 2:

- One SVOC exceeded screening levels
- All other analytes detected were below screening levels.



Summary of RI Risk Assessment Results

- Human Health Risk Assessment
 - ▶ Exposure to DOD-related chemicals at Ash Pit No. 2 and Coal Yard No. 2 soil, surface water and sediment would not result in an unacceptable human health risk or adverse noncancer health effects
- Ecological Risk Assessment
 - ▶ The potential for adverse ecological effects is regarded as extremely low for both sites



Basis for No Action

- No action is required for Ash Pit No. 2 and Coal Yard No. 2 because the RI did not reveal the presence of contamination that would pose a threat to human health and the environment.



Proposed Plan for the Acid Area No. 1 Former Plum Brook Ordnance Works Sandusky, Ohio

**Public Meeting
26 February 2015**

Presented by

Steve Downey, PE, PMP
Project Manager
CB&I Federal Services LLC
Knoxville, TN



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Purpose of the Acid Area No. 1 Proposed Plan

- Present the Preferred Alternative proposed for cleanup of contaminated soils
 - ▶ Based on results of remedial investigation/feasibility study (RI/FS) completed for Acid Area No. 1
 - ▶ Prevents human exposure to soil containing chemicals of concern (COC) at levels above remediation goals (RGs; Table 3 of Proposed Plan)
- Provide for public comment



Community Involvement

- The Proposed Plan is made available to the public for a review and comment period
- At the end of the review and comment period (30 March 2015), all comments will be:
 - ▶ Included in the Responsiveness Summary of the Acid Area No. 1 Decision Document
 - ▶ Documented in the Administrative Record (AR)
 - ▶ Evaluated for consideration in final selection of remedial alternative
- Selected response action will be documented in the Acid Area No. 1 Decision Document

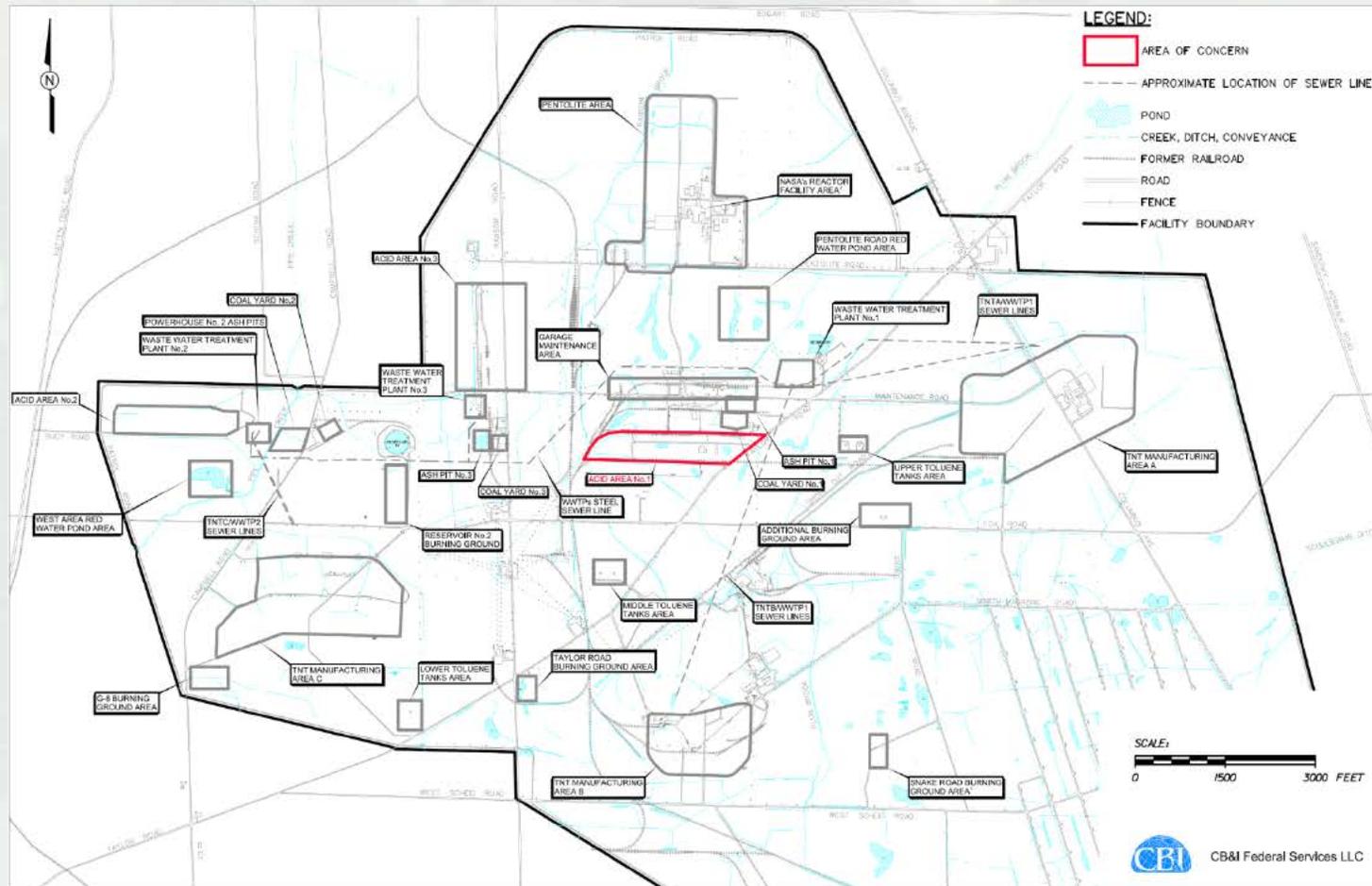


Acid Area No. 1

- Soil remediation is required due to PCB contamination
- No action required for sediment, surface water and groundwater



Acid Area No. 1 Location



Summary of Preferred Remedial Alternative for Acid Area No. 1

- USACE to complete remedial action consisting of:
 - ▶ Excavation of approx. 28,188 CY of surface (0 to 3 feet bgs) soil and subsurface (3 to 5 feet bgs) soil
 - 747 CY of soil assumed to be TSCA PCB remediation waste from locations with total PCB concentrations exceeding 50 mg/kg
 - ▶ Offsite disposal of all excavated soil
 - 27,441 CY will be disposed at an approved solid waste landfill
 - 747 CY will be disposed at a TSCA-approved PCB disposal facility
 - ▶ Backfill excavation with imported clean fill
- The selected response action will be documented by the USACE in a Decision Document for Acid Area No. 1



History of Acid Area No. 1

- Manufacturing area for nitric, sulfuric and oleum acids
 - ▶ Approximately 17 acres in size
 - ▶ Comprised of buildings and above ground storage tanks
 - ▶ Most structures dismantled and removed between 1958 and 1971
 - Building 302 remains at the site (NASA re-use)
 - ▶ Area is essentially a flat, open field covered with tall grass, low shrubs and trees. Four drainage features are also present.



History of Acid Area No. 1



Summary of Acid Area No. 1 Investigations

- Site Investigation
 - ▶ Surface soil, subsurface soil and groundwater samples collected from 15 soil borings and two monitoring wells
- Remedial Investigation (RI)
 - ▶ Surface soil, subsurface soil, surface water, and sediment samples were collected/analyzed
 - ▷ Site Characterization Report – 2009
 - ▷ Baseline Human Health Risk Assessment – 2010
 - ▷ Screening Level Ecological Risk Assessment - 2010
- Feasibility Study
 - ▶ Completed in 2013
 - ▶ Included additional PCB delineation in surface soil



Summary of Investigation and Delineation Results

- ▶ Surface soil: PCBs were detected at concentrations up to 60.3 mg/kg.
- ▶ Subsurface soil: PCBs were generally at low concentrations where detected, with a maximum detected concentration of 4.9 mg/kg.
- ▶ Sediment: PCBs detected at concentrations below RGs
- ▶ Surface Water: PCBs not detected



Summary of RI Risk Assessment Results

■ Human Health Risk Assessment

▶ Resident

- Exposure to surface and subsurface soil exceeds the PBOW cancer and noncancer risk goals
- Exposure to subsurface soil exceeds the PBOW cancer risk goal and equals the noncancer risk goal
- Exposure to groundwater exceed cancer and noncancer risk goals
 - ▷ Risk driving chemicals are not DOD-related
 - ▷ Monitoring wells lack sufficient yield making exposure to groundwater implausible

■ Ecological Risk Assessment

- ▶ Impacts to plants appear to be insubstantial
- ▶ Only a low potential for risk from exposure to contaminants was found for terrestrial receptors



Summary of Evaluated Alternatives

- Alternative 1 – No Action
- Alternative 2 – Excavation and Off-Site Treatment/ Disposal (*Preferred Alternative*)
- Alternative 3 – Excavation, On-Site Chemical Oxidation, and Off-Site Disposal
- Alternative 4 – Excavation, Off-Site Incineration and Off-Site Disposal



Summary of Evaluated Alternatives: Costs and Durations

| Alternative No. | Description | Cost | Duration (Months) |
|-----------------|---|--------------|-------------------|
| 1 | No Further Action | \$0 | 0 |
| 2 | Excavation and Off-Site Treatment/Disposal | \$5,800,000 | 21 |
| 3 | Excavation, On-Site Chemical Oxidation, and Off-Site Disposal | \$6,100,000 | 26 |
| 4 | Excavation, Off-Site Incineration and Off-Site Disposal | \$29,000,000 | 21 |



Alternative 1 Details

- No Action
 - ▶ Required for development by NCP
 - ▶ Does not reduce human health risks to levels considered acceptable by US EPA (threshold criterion)
 - ▶ Does not employ removal, containment, or treatment actions that mitigate impact of source areas on receptors or other media
 - ▶ Thus, No Action was not recommended



Alternative 2 Details

(Preferred Alternative)

- Excavation and Off-Site Treatment/Disposal
 - ▶ Excavate approx. 28,188 CY of contaminated soil
 - ▶ Off-site disposal of approx. 27,441 CY of PCB-contaminated soil at nonhazardous waste landfill
 - ▶ Off-site disposal of approx. 747 cy soil classified as PCB remediation waste at a TSCA-approved PCB disposal facility
 - ▶ Backfill with imported clean fill



Alternative 3 Details

- Excavation, On-Site Chemical Oxidation, and Off-Site Disposal
 - ▶ Excavate approx. 28,188 CY of contaminated soil
 - ▶ On-site treatment of soil with PCBs greater than or equal to 50 mg/kg.
 - Confirmation sampling of treated soil to verify residual PCB concentrations are less than 50 mg/kg.
 - ▶ Disposal of all soil at a nonhazardous waste landfill
 - ▶ Backfill excavation with imported clean fill

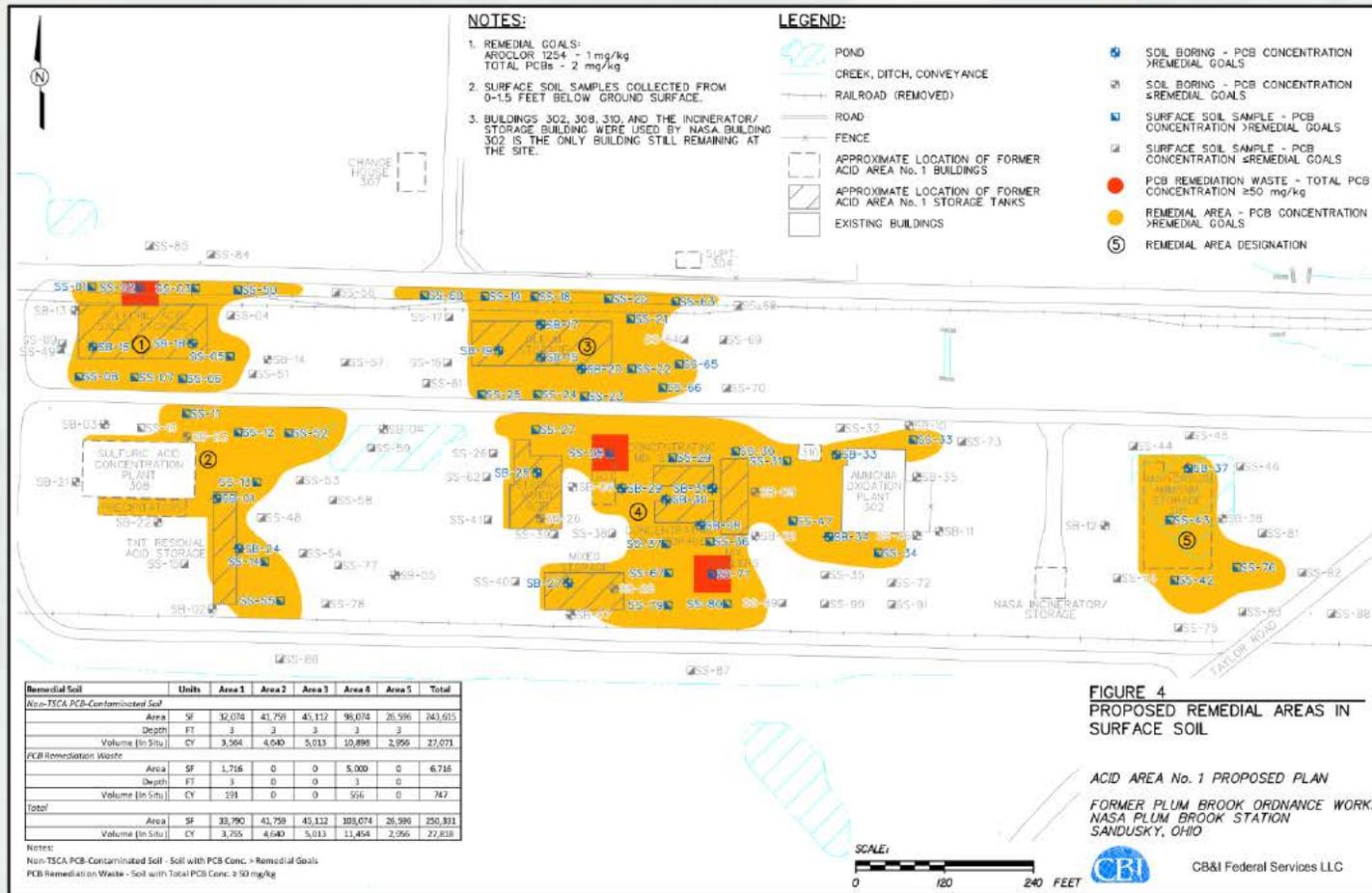


Alternative 4 Details

- Excavation, Off-Site Incineration and Off-Site Disposal
 - ▶ Excavate approx. 28,188 CY of contaminated soil
 - ▶ Off-site disposal of approx. 27,471 CY of PCB-contaminated soil at nonhazardous waste landfill
 - ▶ Off-site disposal of approx. 747 cy soil classified as PCB remediation waste at a TSCA-approved incineration facility
 - ▶ Backfill with imported clean fill



Acid Area No. 1 Extent of Soil Contamination



Remedial Performance of Proposed Action

- Alternative 2 is protective of human health and the environment
- Complies with Applicable or Relevant and Appropriate Requirements (ARARs)
- Permanently removes COCs from Acid Area No. 1 soil at concentrations above RGs
- Risk to the community or environment during implementation limited through best management practices during remedial action
- Is technically & administratively implementable
 - ▶ No engineering or regulatory restrictions prevent implementation
 - ▶ Equipment required is readily available



Proposed Action Schedule

- Alternative 2 can be implemented in approx. 21 months
 - ▶ Work plan development
 - ▶ Mobilization and excavation of 28,188 CY of soil
 - ▶ Off-site disposal of nonhazardous soil (27,441 CY)
 - ▶ Off-site disposal of TSCA PCB remediation waste (747 CY)
 - ▶ Backfill with imported clean soil
 - ▶ Site restoration
 - ▶ Demobilization



Proposed Action Costs

| Item | |
|---|------------------|
| 1. Work plans, reports and procurement | \$100,000 |
| 2. Mobilize/demobilize equipment and personnel. | \$6,000 |
| 3. Site Preparation | \$61,635 |
| 4. Excavate contaminated soil | \$1,198,205 |
| 5. Off-site disposal | \$2,570,701 |
| 6. Site restoration | \$561,019 |
| Subtotal | \$4,497,600 |
| Contingency (25%) | \$1,124,400 |
| Contractor Oversight (5%) | \$224,880 |
| Total Cost | 5,846,900 |

