MEETING MINUTES

RESTORATION ADVISORY BOARD
For
PLUM BROOK ORDNANCE WORKS
December 8, 2005

ATTENDEES

Mark Bohne, RAB Community Co-Chairperson
Rick Meadows, RAB USACE Co-Chairperson
Peg Kingsley, RAB
Gil Steinen, RAB
Richard Pitsinger, RAB
Jan Bohne, RAB
Michael Parker, RAB
John Blakeman, RAB
Bob Lallier, NASA
Archie Lunsey, OEPA NWDO
Lisa Humphreys, USACE Huntington
Beth Hull, USACE Huntington
Linda Ingram, USACE Nashville
Lannae Long, USACE Nashville
Mike Gunderson, Shaw
Steve Downey, Shaw
Doug Hodge, Jacobs Engineering
Al Hardesty, Jacobs Engineering
Helen Owens, Streamborn

Agenda

- Acid Areas 2 and 3 Update – Jacobs Engineering
- Reservoir 2 Burn Grounds EECA Update – Jacobs Engineering
- Impact of NASA Pump and Treat System on Sitewide Groundwater - NASA

The RAB Meeting was conducted on December 8, 2005 at Firelands College. The meeting began with the notice that RAB member, George Parker, passed away in mid-November. George's son, Michael was in attendance and was invited to continue on as a RAB member by Community Co-chairperson Mark Bohne. The RAB will nominate Michael Parker for membership and the Huntington District Commander (Colonel Bulen) will approve the nomination.

Acid Areas 2 and 3 Update - Jacobs Engineering

Al Hardesty provided an update of the Remedial Investigation at Acid Areas 2 and 3. The presentation is provided as an attachment to the meeting minutes.

Reservoir 2 Burn Grounds EECA Update – Jacobs Engineering

Doug Hodge provided an update of the Engineering Evaluation Cost Analysis (EECA) which is on-going. Dr. Hodge also reviewed the steps of the treatability study being conducted by Environmental Research and Development Center. The presentation is provided as an attachment to the meeting minutes.

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Impact of NASA Pump and Treat System on Sitewide Groundwater – NASA

Robert Lallier provided insight to the capacity of the sump in the reactor area. NASA conducted monitoring of the pumping rates at the Reactor Area Sump and Reactor Area Recovery Well. The sump pump removes approximately 1.8 gallons/minute (gpm), 2,650 gallons/day, or approximately 967,250 gal/yr. This totals about 1,675,030 gallons over the past 7 quarters. The recovery well removes less than 0.10 gpm, 124 gallons/day, or about 45,260 gal/yr. This totals about 78,800 gallons since monitoring began. The sump has been in operation since construction of the reactor.

Mike Gunderson, Shaw Environmental was asked to comment on the impact of the Reactor pumping on the groundwater flow across the PBOW site. Mr. Gunderson responded that based on the groundwater model under development by Shaw, the amount of water being removed at the reactor has minimal drawdown. Based on information from OEPA, the local quarry is pumping over 10 million gallons per month for their operations, hence the quarry appears to have greater influence on the groundwater flow on the PBOW site than the reactor sump or recovery well. For comparison, this is about 232 gpm.

Other Business

- Bob Lallier, NASA indicated that NASA will be collecting and analyzing the oil-like material from the well designated TNT-A-BED-GW001. NASA is coordinating this internal effort and will notify USACE Huntington District when the data is available.

- Mark Bohne, RAB Co chairperson inquired about abandoning wells (Reservoir No. 2 Burn Ground). USACE and OEPA agreed that wells would only be abandoned when and if the installation interfered with the EE/CA or other remedial or removal activity.

- Jan Bohne, RAB Member inquired if the PBOW wells have been sampled for Cesium and if the recent detection of cesium by the reactor team had been relayed to the USACE FUDS team. USACE representatives responded that cesium was not a by-product or component of the former TNT manufacturing process and therefore is not one of the parameters subject to this Formerly Used Defense Site (FUDS) investigation. After discussion, it was agreed that there had been a breakdown in communication between the two teams but communication among the FUDS team is good. Mr. Lallier, NASA POC, maintains communication with Ms. Humphreys, USACE Technical Coordinator, on all site issues and concerns. The cesium detection was not relayed to the FUDS team because the detections were so low that it did not pose risk to site worker safety and health. Since the cesium detection was a significant news story in the area, Rick Meadows,

FUDS team Project Manager, agreed to contact his USACE counterpart on the Reactor team to request that they keep the FUDS team situationally aware of any issues that make the news and that might invite reporters, news media or others to inquire about our work or attend our meetings.

- Jan Bohne, RAB Member inquired of NASA representative Bob Lallier about opening the PBOW site to researchers. Ms. Bohne was preparing a grant request and if approved, the grant money would be used to study "fracture flow" in northern Ohio, specifically the PBOW site. However, John Blakeman (RAB Member) suggested the BGSU Firelands College Campus as an alternate site due to the accessibility of a research location (open excavation), the association with the academic community, and its proximity to PBOW. The group agreed that BGSU Firelands College campus would be the preferred site. There was no further discussion of this subject as a RAB new business item.

Meeting Schedule

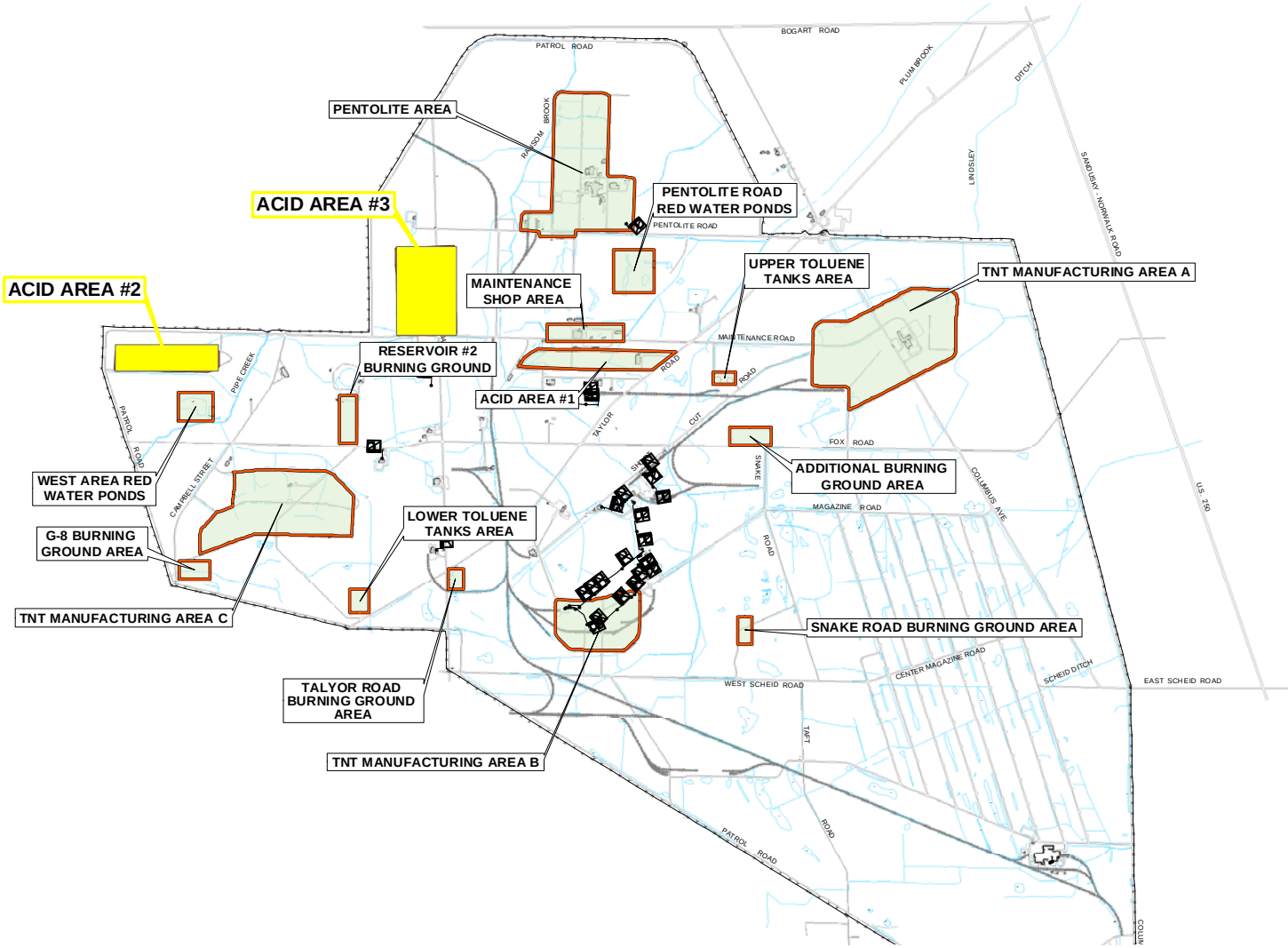
The next meeting is scheduled for February 23, 2006. For additional information, please contact Lisa Humphreys at (800) 822-8413 or Helen Owens, RAB Support Contractor at (937) 478-2322.

Remedial Investigation Acid Areas 2 & 3

Presented by Jacobs Engineering

December 8, 2005

Acid Areas 2 & 3 Location Map



Acid Areas History

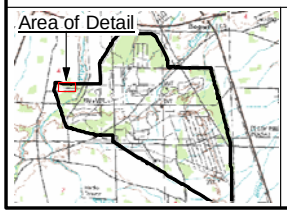
- Production of Nitric and Sulfuric Acids Used in the Production of TNT.
- In Operation from 1941 to 1945
- Buildings dismantled between 1958 – 1968
- Site Investigation – 1998 (soil only)
- Elevated Levels of PCBs and PAHs in Soil

2004 & 2005 Remedial Investigation

- Soil Investigation
- Groundwater Investigation
- Surface Water/Sediment Investigation

Sampling Locations — Acid Area 2

Area of Detail



Legend

- Storage Tank Areas from Engineering Drawings
- Creek, Ditch, Conveyance
- Buildings
- Railway
- 1998 SI Soil Borings
- 2004 Soil Borings (1 surface sample and 2 subsurface samples)
- 2004 Soil Borings (1 surface sample and 1 subsurface sample)
- Monitoring Wells
- Piezometers
- Surface Water Sampling Locations

0 50 100 200
Feet

N

Notes: *Aerial Photography from 1958.*
Data mapped to Ohio State Plane North NAD83, map units are feet.

JACOBS

Sampling Locations — Acid Area 2

Plum Brook Ordnance Works
Sandusky, Ohio

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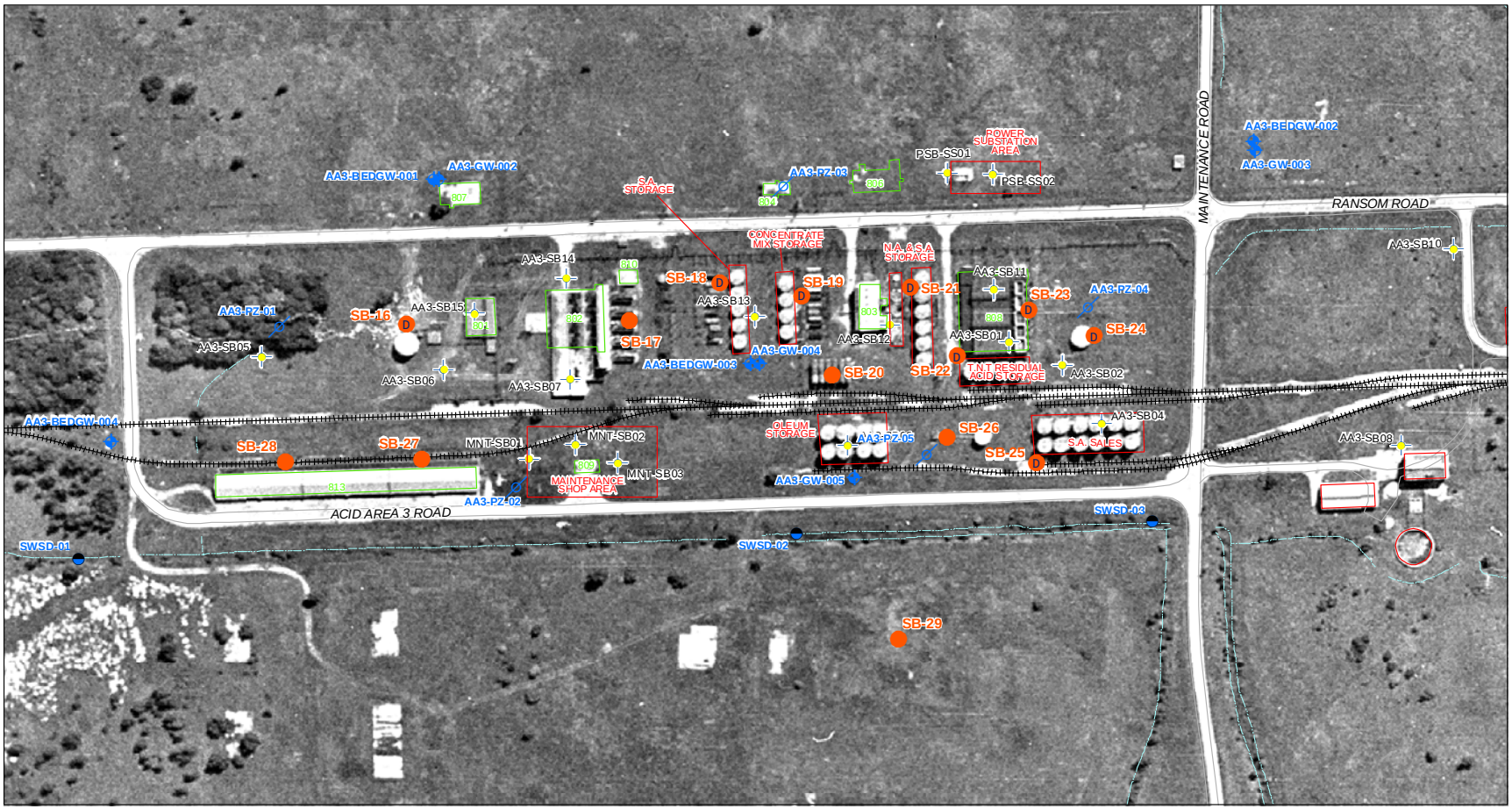
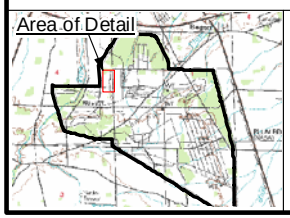
Figure 3-1

Sampling Locations — Acid Area 3



Area of Detail



Legend

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- Monitoring Wells
- Piezometers
- Surface Water Sampling Locations

0 50 100 200
Feet

N

Notes: *Aerial Photography from 1958.*
Data mapped to Ohio State Plane North NAD83, map units are feet.

JACOBS

Sampling Locations — Acid Area 3

Plum Brook Ordnance Works
Sandusky, Ohio

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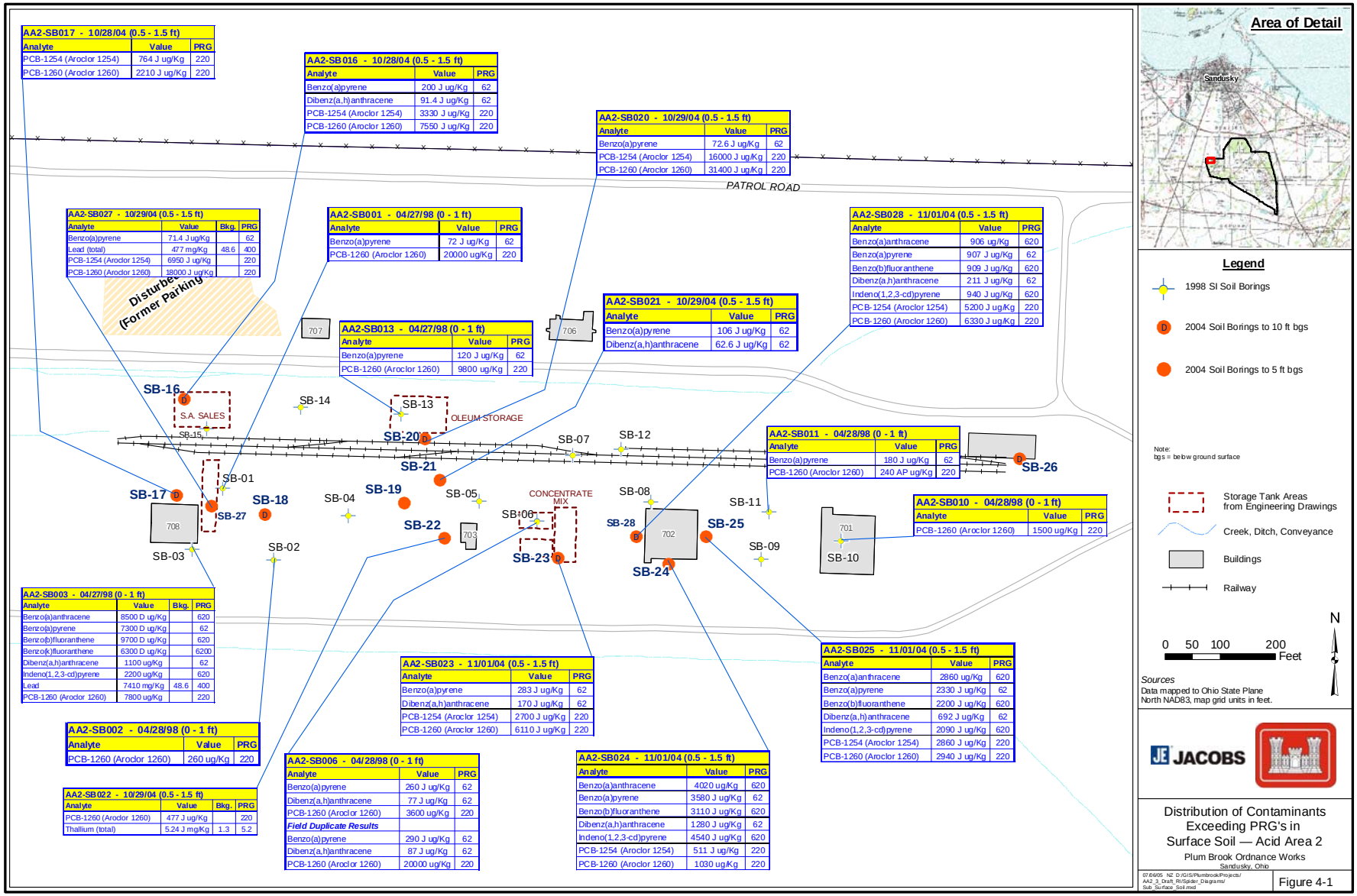
Figure 3-2

AA2 Surface Soil

- PCBs & PAHs
- PCBs detected at 75% of the Locations
- PRG Exceedances at 17 of 28 Locations
- Highest Concentrations within Footprint of Former Storage Tanks and Process Buildings

AA2 Surface Soil



AA2-SB017 - 10/28/04 (0.5 - 1.5 ft)

Analyte	Value	PRG
PCB-1254 (Aroclor 1254)	764 J ug/Kg	220
PCB-1260 (Aroclor 1260)	2210 J ug/Kg	220

AA2-SB016 - 10/28/04 (0.5 - 1.5 ft)

Analyte	Value	PRG
Benzo(a)pyrene	200 J ug/Kg	62
Dibenz(a,h)anthracene	91.4 J ug/Kg	62
PCB-1254 (Aroclor 1254)	3330 J ug/Kg	220
PCB-1260 (Aroclor 1260)	7550 J ug/Kg	220

AA2-SB020 - 10/29/04 (0.5 - 1.5 ft)

Analyte	Value	PRG
Benzo(a)pyrene	72.6 J ug/Kg	62
PCB-1254 (Aroclor 1254)	16000 J ug/Kg	220
PCB-1260 (Aroclor 1260)	31400 J ug/Kg	220

AA2-SB027 - 10/29/04 (0.5 - 1.5 ft)

Analyte	Value	Bkg.	PRG
Benzo(a)pyrene	71.4 J ug/Kg		62
Lead (total)	477 mg/Kg	48.6	400
PCB-1254 (Aroclor 1254)	6950 J ug/Kg		220
PCB-1260 (Aroclor 1260)	18000 J ug/Kg		220

AA2-SB001 - 04/27/98 (0 - 1 ft)

Analyte	Value	PRG
Benzo(a)pyrene	72 J ug/Kg	62
PCB-1260 (Aroclor 1260)	20000 ug/Kg	220

AA2-SB028 - 11/01/04 (0.5 - 1.5 ft)

Analyte	Value	PRG
Benzo(a)anthracene	906 ug/Kg	620
Benzo(a)pyrene	907 J ug/Kg	62
Benzo(b)fluoranthene	909 J ug/Kg	620
Dibenz(a,h)anthracene	211 J ug/Kg	62
Indeno(1,2,3-cd)pyrene	940 J ug/Kg	620
PCB-1254 (Aroclor 1254)	5200 J ug/Kg	220
PCB-1260 (Aroclor 1260)	6330 J ug/Kg	220

AA2-SB013 - 04/27/98 (0 - 1 ft)

Analyte	Value	PRG
Benzo(a)pyrene	120 J ug/Kg	62
PCB-1260 (Aroclor 1260)	9800 ug/Kg	220

AA2-SB021 - 10/29/04 (0.5 - 1.5 ft)

Analyte	Value	PRG
Benzo(a)pyrene	106 J ug/Kg	62
Dibenz(a,h)anthracene	62.6 J ug/Kg	62

AA2-SB011 - 04/28/98 (0 - 1 ft)

Analyte	Value	PRG
Benzo(a)pyrene	180 J ug/Kg	62
PCB-1260 (Aroclor 1260)	240 AP ug/Kg	220

AA2-SB010 - 04/28/98 (0 - 1 ft)

Analyte	Value	PRG
PCB-1260 (Aroclor 1260)	1500 ug/Kg	220

AA2-SB003 - 04/27/98 (0 - 1 ft)

Analyte	Value	Bkg.	PRG
Benzo(a)anthracene	8500 D ug/Kg		620
Benzo(a)pyrene	7300 D ug/Kg		62
Benzo(b)fluoranthene	9700 D ug/Kg		620
Benzo(k)fluoranthene	6300 D ug/Kg		6200
Dibenz(a,h)anthracene	1100 ug/Kg		62
Indeno(1,2,3-cd)pyrene	2200 ug/Kg		620
Lead	7410 mg/Kg	48.6	400
PCB-1260 (Aroclor 1260)	7800 ug/Kg		220

AA2-SB023 - 11/01/04 (0.5 - 1.5 ft)

Analyte	Value	PRG
Benzo(a)pyrene	283 J ug/Kg	62
Dibenz(a,h)anthracene	170 J ug/Kg	62
PCB-1254 (Aroclor 1254)	2700 J ug/Kg	220
PCB-1260 (Aroclor 1260)	6110 J ug/Kg	220

AA2-SB025 - 11/01/04 (0.5 - 1.5 ft)

Analyte	Value	PRG
Benzo(a)anthracene	2860 ug/Kg	620
Benzo(a)pyrene	2330 J ug/Kg	62
Benzo(b)fluoranthene	2200 J ug/Kg	620
Dibenz(a,h)anthracene	692 J ug/Kg	62
Indeno(1,2,3-cd)pyrene	2090 J ug/Kg	620
PCB-1254 (Aroclor 1254)	2860 J ug/Kg	220
PCB-1260 (Aroclor 1260)	2940 J ug/Kg	220

AA2-SB002 - 04/28/98 (0 - 1 ft)

Analyte	Value	PRG
PCB-1260 (Aroclor 1260)	260 ug/Kg	220

AA2-SB022 - 10/29/04 (0.5 - 1.5 ft)

Analyte	Value	Bkg.	PRG
PCB-1260 (Aroclor 1260)	477 J ug/Kg		220
Thallium (total)	5.24 J mg/Kg	1.3	5.2

AA2-SB006 - 04/28/98 (0 - 1 ft)

Analyte	Value	PRG
Benzo(a)pyrene	260 J ug/Kg	62
Dibenz(a,h)anthracene	77 J ug/Kg	62
PCB-1260 (Aroclor 1260)	3600 ug/Kg	220
Field Duplicate Results		
Benzo(a)pyrene	290 J ug/Kg	62
Dibenz(a,h)anthracene	87 J ug/Kg	62
PCB-1260 (Aroclor 1260)	20000 ug/Kg	220

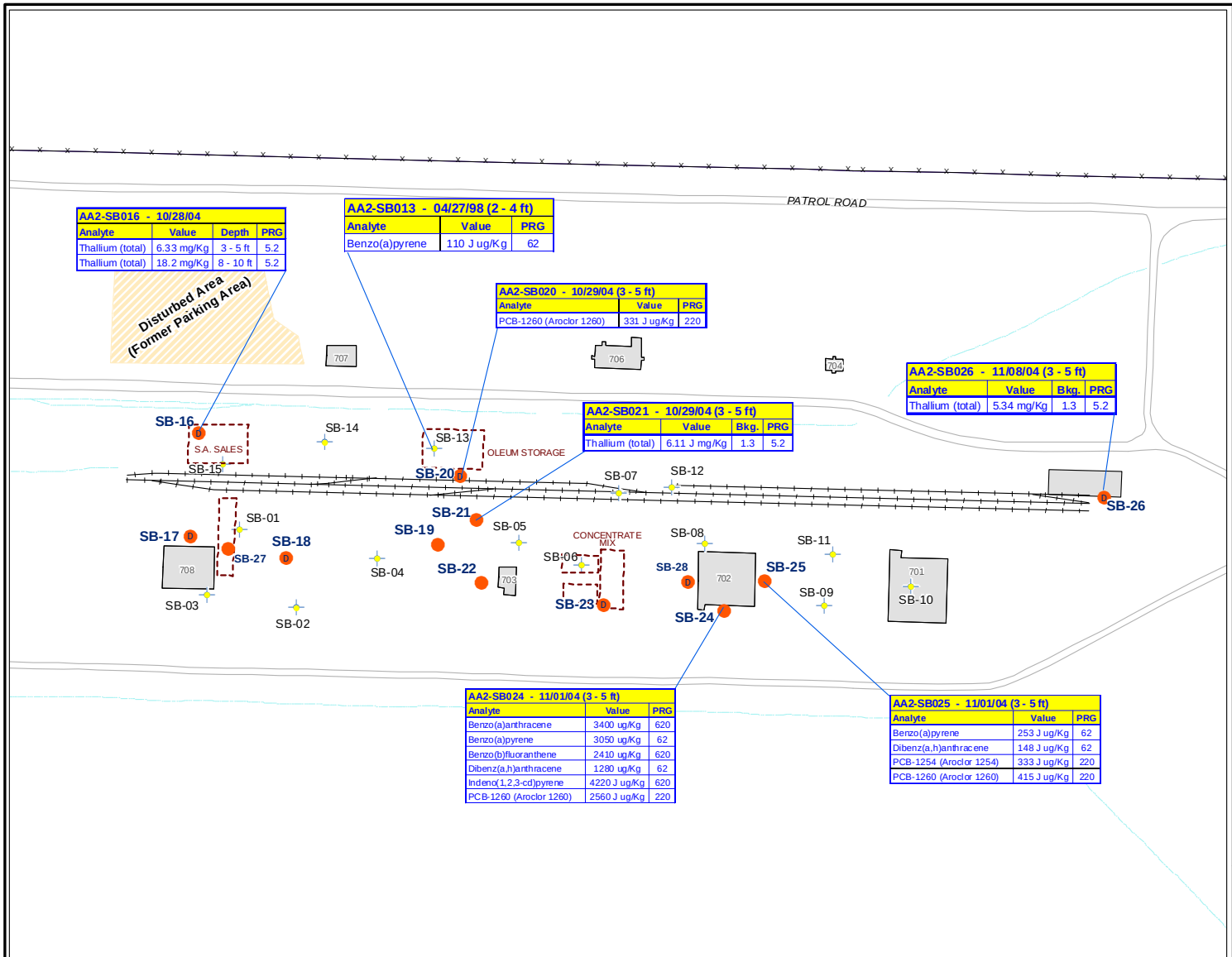
AA2-SB024 - 11/01/04 (0.5 - 1.5 ft)

Analyte	Value	PRG
Benzo(a)anthracene	4020 ug/Kg	620
Benzo(a)pyrene	3580 J ug/Kg	62
Benzo(b)fluoranthene	3110 J ug/Kg	620
Dibenz(a,h)anthracene	1280 J ug/Kg	62
Indeno(1,2,3-cd)pyrene	4540 J ug/Kg	620
PCB-1254 (Aroclor 1254)	511 J ug/Kg	220
PCB-1260 (Aroclor 1260)	1030 ug/Kg	220

AA2 Subsurface Soil

- PCBs, PAHs, Thallium
- Limited to 3 to 5 ft below ground surface
- PRG Exceedances at 7 of 28 Locations
- Thallium at 3 Locations
- PCB and PAH co-located with High Surface Soil Contamination

AA2 Subsurface Soil



AA2-SB016 - 10/28/04			
Analyte	Value	Depth	PRG
Thallium (total)	6.33 mg/Kg	3 - 5 ft	5.2
Thallium (total)	18.2 mg/Kg	8 - 10 ft	5.2

AA2-SB013 - 04/27/98 (2 - 4 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	110 J ug/Kg	62

AA2-SB020 - 10/29/04 (3 - 5 ft)		
Analyte	Value	PRG
PCB-1260 (Aroclor 1260)	331 J ug/Kg	220

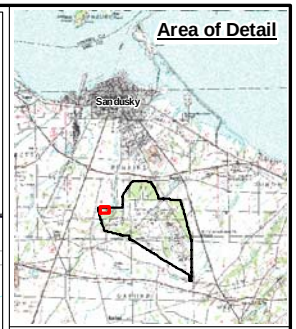
AA2-SB026 - 11/08/04 (3 - 5 ft)			
Analyte	Value	Bkg.	PRG
Thallium (total)	5.34 mg/Kg	1.3	5.2

AA2-SB021 - 10/29/04 (3 - 5 ft)			
Analyte	Value	Bkg.	PRG
Thallium (total)	6.11 J mg/Kg	1.3	5.2

AA2-SB024 - 11/01/04 (3 - 5 ft)		
Analyte	Value	PRG
Benzo(a)anthracene	3400 ug/Kg	620
Benzo(a)pyrene	3050 ug/Kg	62
Benzo(b)fluoranthene	2410 ug/Kg	620
Dibenz(a,h)anthracene	1280 ug/Kg	62
Indeno(1,2,3-cd)pyrene	4220 J ug/Kg	620
PCB-1260 (Aroclor 1260)	2560 J ug/Kg	220

AA2-SB025 - 11/01/04 (3 - 5 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	253 J ug/Kg	62
Dibenz(a,h)anthracene	148 J ug/Kg	62
PCB-1254 (Aroclor 1254)	333 J ug/Kg	220
PCB-1260 (Aroclor 1260)	415 J ug/Kg	220

Area of Detail



Legend

- 1998 SI Soil Borings
- 2004 Soil Borings to 10 ft bgs
- 2004 Soil Borings to 5 ft bgs

Note:
bgs = below ground surface

- Storage Tank Areas from Engineering Drawings
- Creek, Ditch, Conveyance
- Buildings
- Railway

0 50 100 200 Feet

N

Sources
Data mapped to Ohio State Plane
North NAD83, map grid units in feet.

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Distribution of Contaminants Exceeding PRG's in Subsurface Soil — Acid Area 2
Plum Brook Ordnance Works
Sandusky, Ohio

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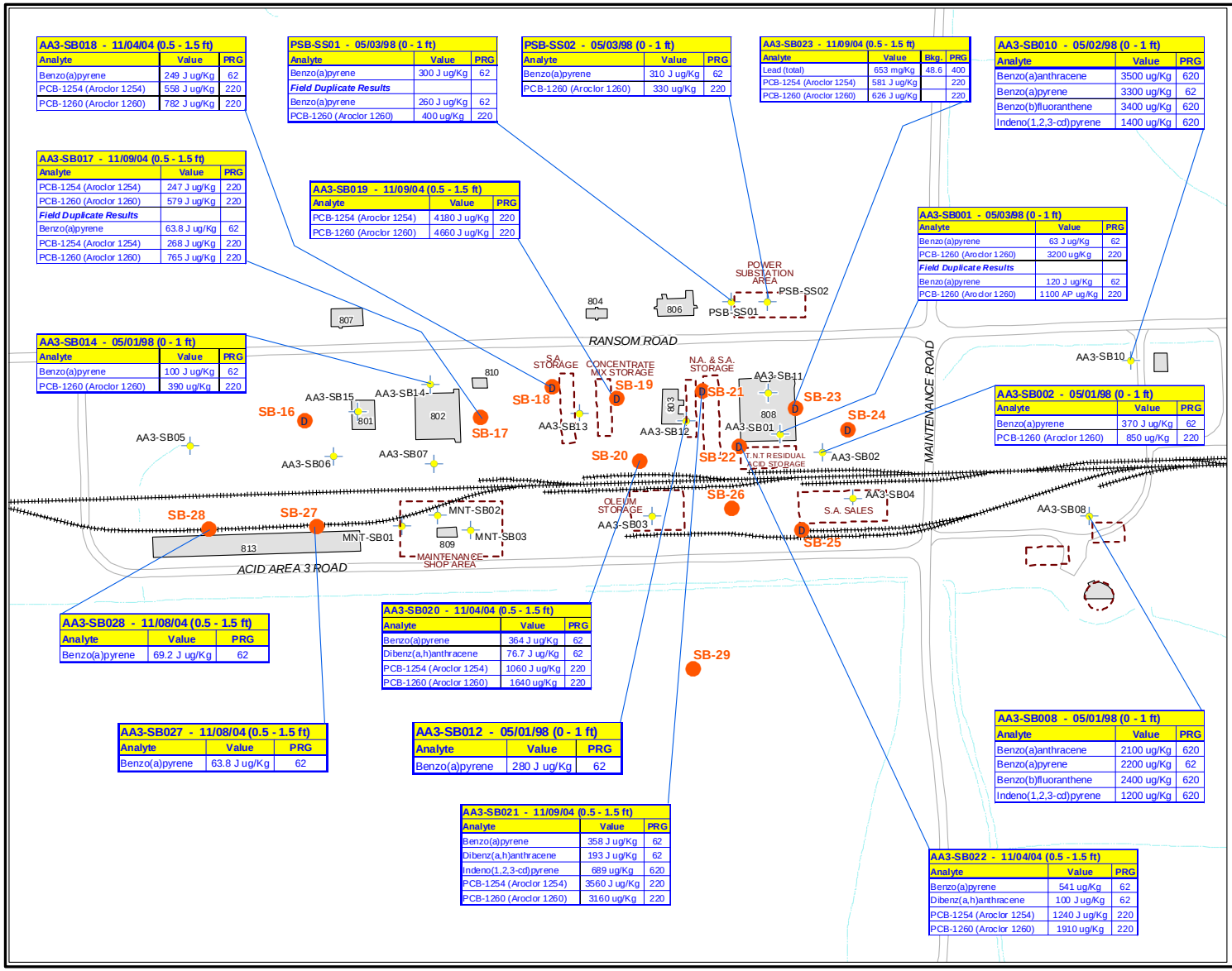
Figure 4-2

AA3 Surface Soil

- PCBs & PAHs
- PCBs Detected at 62% of the Locations
- PRG Exceedances at 17 of 34 Locations
- Highest Concentration of PCBs within footprint of Former Storage Tanks and Process Buildings
- Highest Concentration of PAHs near former Waste Water Treatment Facility

AA3 Surface Soil



AA3-SB018 - 11/04/04 (0.5 - 1.5 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	249 J ug/Kg	62
PCB-1254 (Aroclor 1254)	558 J ug/Kg	220
PCB-1260 (Aroclor 1260)	782 J ug/Kg	220

PSB-SS01 - 05/03/98 (0 - 1 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	300 J ug/Kg	62
Field Duplicate Results		
Benzo(a)pyrene	260 J ug/Kg	62
PCB-1260 (Aroclor 1260)	400 ug/Kg	220

PSB-SS02 - 05/03/98 (0 - 1 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	310 J ug/Kg	62
PCB-1260 (Aroclor 1260)	330 ug/Kg	220

AA3-SB023 - 11/09/04 (0.5 - 1.5 ft)			
Analyte	Value	Bkg.	PRG
Lead (total)	653 mg/Kg	48.6	400
PCB-1254 (Aroclor 1254)	581 J ug/Kg		220
PCB-1260 (Aroclor 1260)	626 J ug/Kg		220

AA3-SB010 - 05/02/98 (0 - 1 ft)		
Analyte	Value	PRG
Benzo(a)anthracene	3500 ug/Kg	620
Benzo(a)pyrene	3300 ug/Kg	62
Benzo(b)fluoranthene	3400 ug/Kg	620
Indeno(1,2,3-cd)pyrene	1400 ug/Kg	620

AA3-SB017 - 11/09/04 (0.5 - 1.5 ft)		
Analyte	Value	PRG
PCB-1254 (Aroclor 1254)	247 J ug/Kg	220
PCB-1260 (Aroclor 1260)	579 J ug/Kg	220
Field Duplicate Results		
Benzo(a)pyrene	63.8 J ug/Kg	62
PCB-1254 (Aroclor 1254)	268 J ug/Kg	220
PCB-1260 (Aroclor 1260)	765 J ug/Kg	220

AA3-SB019 - 11/09/04 (0.5 - 1.5 ft)		
Analyte	Value	PRG
PCB-1254 (Aroclor 1254)	4180 J ug/Kg	220
PCB-1260 (Aroclor 1260)	4660 J ug/Kg	220

AA3-SB001 - 05/03/98 (0 - 1 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	63 J ug/Kg	62
PCB-1260 (Aroclor 1260)	3200 ug/Kg	220
Field Duplicate Results		
Benzo(a)pyrene	120 J ug/Kg	62
PCB-1260 (Aroclor 1260)	1100 AP ug/Kg	220

AA3-SB014 - 05/01/98 (0 - 1 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	100 J ug/Kg	62
PCB-1260 (Aroclor 1260)	390 ug/Kg	220

AA3-SB002 - 05/01/98 (0 - 1 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	370 J ug/Kg	62
PCB-1260 (Aroclor 1260)	850 ug/Kg	220

AA3-SB028 - 11/08/04 (0.5 - 1.5 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	69.2 J ug/Kg	62

AA3-SB020 - 11/04/04 (0.5 - 1.5 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	364 J ug/Kg	62
Dibenz(a,h)anthracene	76.7 J ug/Kg	62
PCB-1254 (Aroclor 1254)	1060 J ug/Kg	220
PCB-1260 (Aroclor 1260)	1640 ug/Kg	220

AA3-SB027 - 11/08/04 (0.5 - 1.5 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	63.8 J ug/Kg	62

AA3-SB012 - 05/01/98 (0 - 1 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	280 J ug/Kg	62

AA3-SB008 - 05/01/98 (0 - 1 ft)		
Analyte	Value	PRG
Benzo(a)anthracene	2100 ug/Kg	620
Benzo(a)pyrene	2200 ug/Kg	62
Benzo(b)fluoranthene	2400 ug/Kg	620
Indeno(1,2,3-cd)pyrene	1200 ug/Kg	620

AA3-SB021 - 11/09/04 (0.5 - 1.5 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	358 J ug/Kg	62
Dibenz(a,h)anthracene	193 J ug/Kg	62
Indeno(1,2,3-cd)pyrene	689 ug/Kg	620
PCB-1254 (Aroclor 1254)	3560 J ug/Kg	220
PCB-1260 (Aroclor 1260)	3160 ug/Kg	220

AA3-SB022 - 11/04/04 (0.5 - 1.5 ft)		
Analyte	Value	PRG
Benzo(a)pyrene	541 ug/Kg	62
Dibenz(a,h)anthracene	100 J ug/Kg	62
PCB-1254 (Aroclor 1254)	1240 J ug/Kg	220
PCB-1260 (Aroclor 1260)	1910 ug/Kg	220

Area of Detail

Legend

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- 2004 Soil Borings to 5 ft bgs

Note:
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N

0 50 100 200 Feet

Sources
Data mapped to Ohio State Plane North NAD83, map grid units in feet.

JACOBS

Distribution of Contaminants Exceeding PRG's in Surface Soil — Acid Area 3
Plum Brook Ordnance Works
Sandusky, Ohio

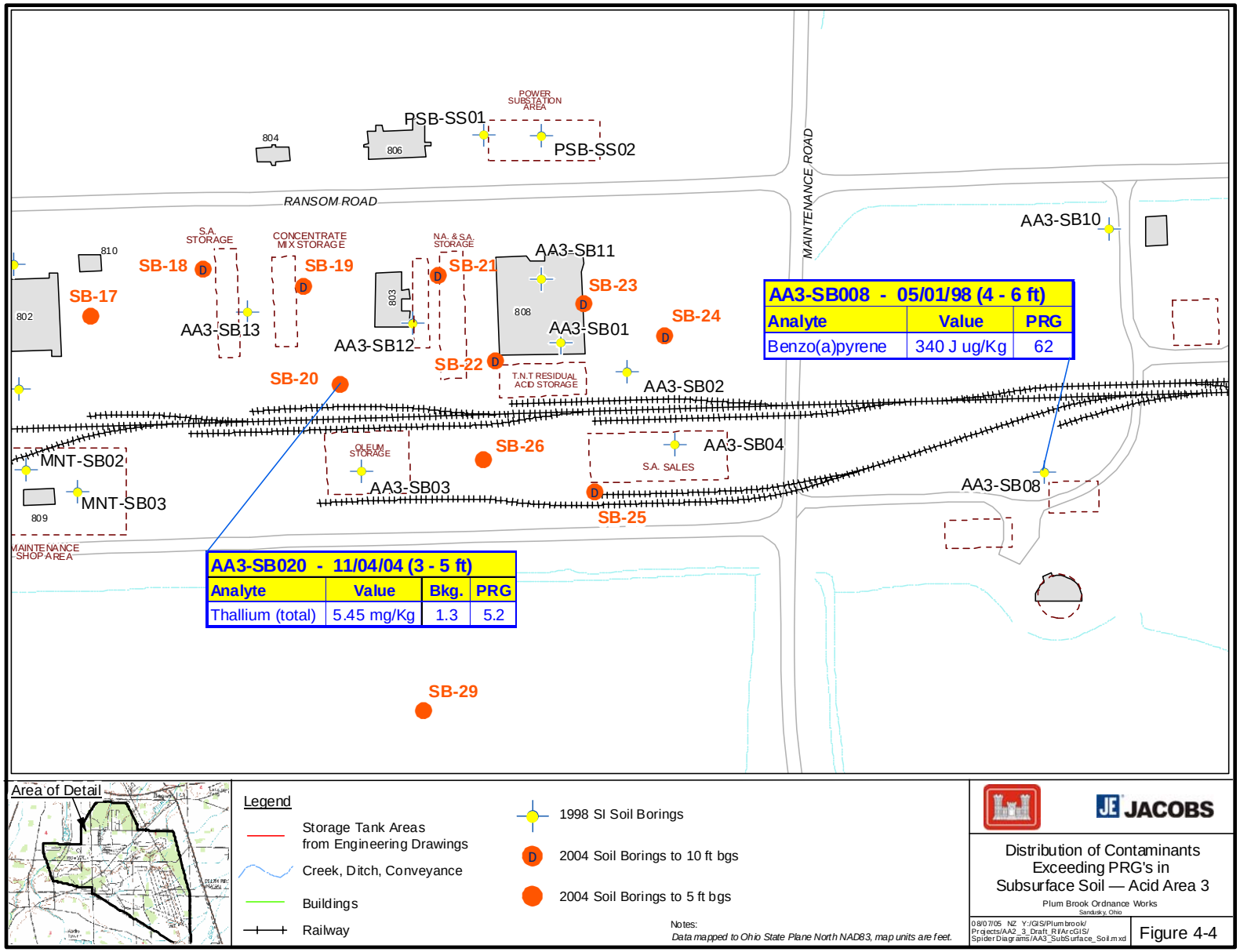
08/07/05, NZ D:\GIS\Plumbrook\Projects\AA2_3_Draft RI\Spider_Diagrams\AA3_Surface_Soil.mxd

Figure 4-3

AA3 Subsurface Soil

- PAHs & Thallium
- Limited to 3 to 6 ft below ground surface
- PRG Exceedances at 2 of 29 Locations
- Benzo(a) Pyrene at the Former Waste Water Treatment Plant.
- Thallium just above Background Levels

AA3 Subsurface Soil



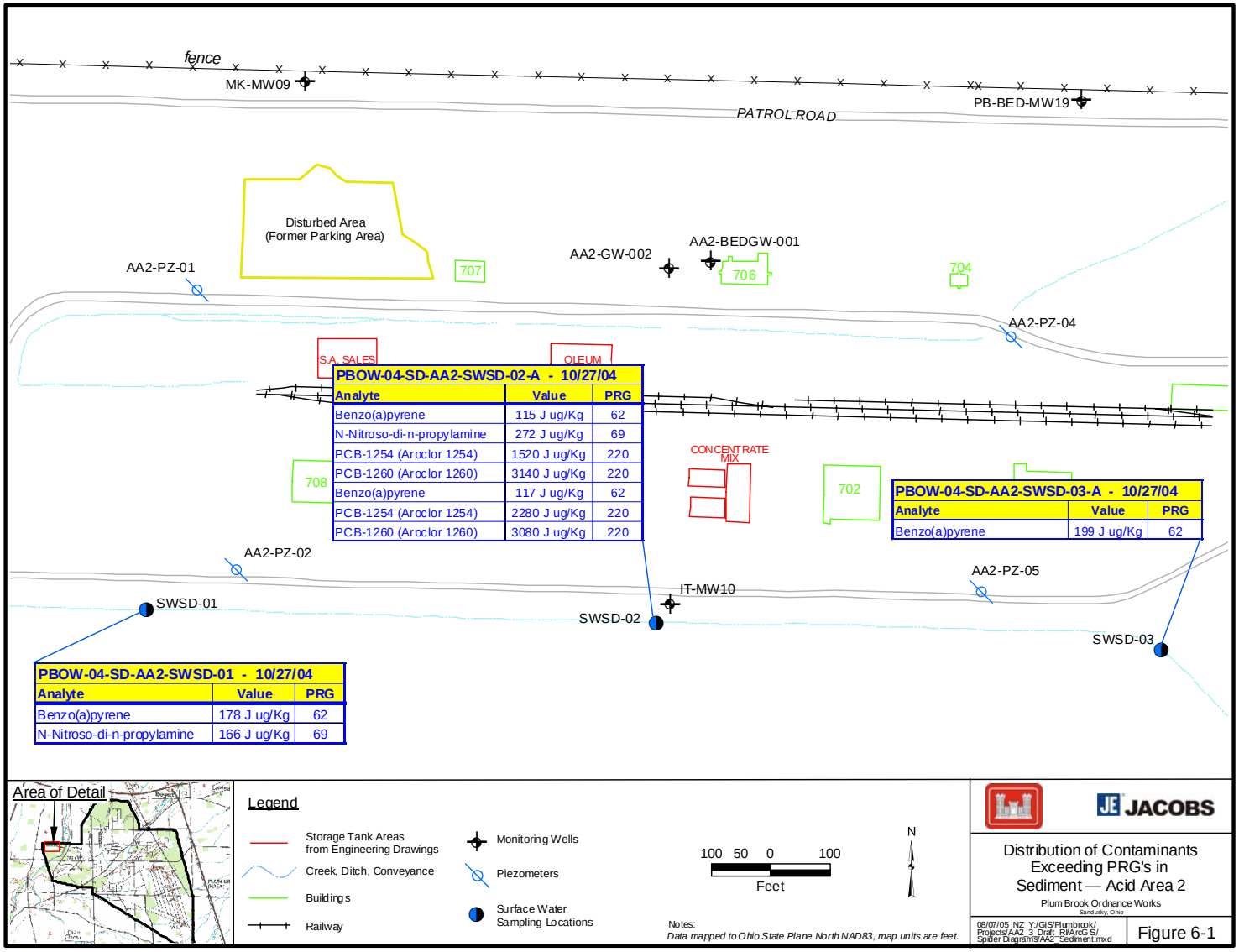
Groundwater

- Primary Soil Contaminants (PCBs & PAHs) Not Detected Groundwater
- No PRG Exceedances in Shallow Groundwater
- Contaminants are Limited to VOCs and SVOCs Associated with Naturally Occurring Petroleum

AA2 Surface Water / Sediment

- Surface Water — Metals Only
- Surface Water — No PRG Exceedances
- Sediment — VOC’s, PAH’s, PCB’s, and Metals
- Sediment — PRG Exceedances include:
  - PAH’s
  - PCB’s

AA2 Surface Water / Sediment



PBOW-04-SD-AA2-SWSD-02-A - 10/27/04		
Analyte	Value	PRG
Benzo(a)pyrene	115 J ug/Kg	62
N-Nitroso-di-n-propylamine	272 J ug/Kg	69
PCB-1254 (Aroclor 1254)	1520 J ug/Kg	220
PCB-1260 (Aroclor 1260)	3140 J ug/Kg	220
Benzo(a)pyrene	117 J ug/Kg	62
PCB-1254 (Aroclor 1254)	2280 J ug/Kg	220
PCB-1260 (Aroclor 1260)	3080 J ug/Kg	220

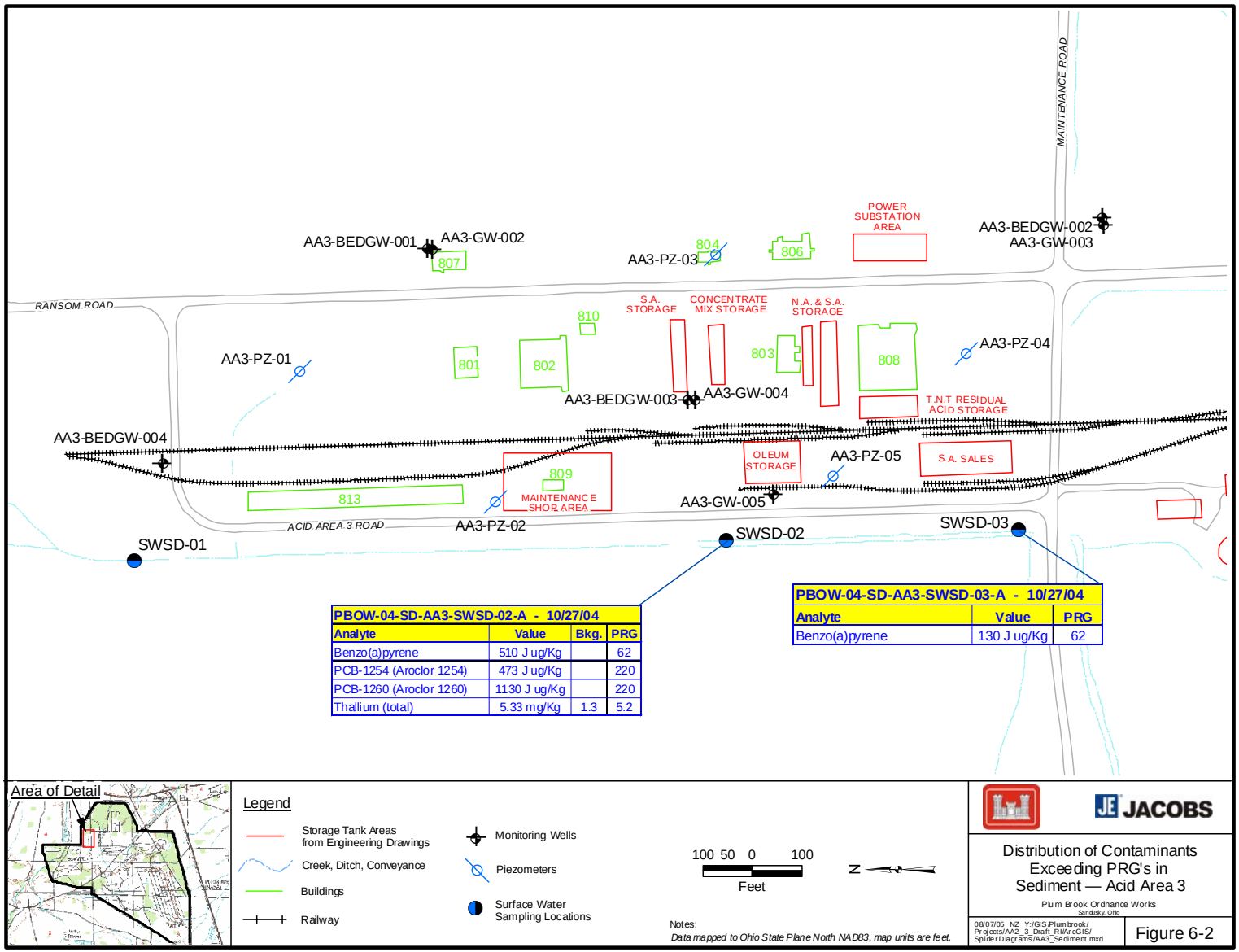
PBOW-04-SD-AA2-SWSD-03-A - 10/27/04		
Analyte	Value	PRG
Benzo(a)pyrene	199 J ug/Kg	62

PBOW-04-SD-AA2-SWSD-01 - 10/27/04		
Analyte	Value	PRG
Benzo(a)pyrene	178 J ug/Kg	62
N-Nitroso-di-n-propylamine	166 J ug/Kg	69

AA3 Surface Water / Sediment

- Surface Water — Metals Only
- Surface Water — No PRG Exceedances
- Sediment — VOC’s, PAH’s, PCB’s, and Metals
- Sediment — PRG Exceedances include:
  - PAH’s
  - PCB’s

AA3 Surface Water / Sediment



PBOW-04-SD-AA3-SWSD-02-A - 10/27/04			
Analyte	Value	Bkg.	PRG
Benzo(a)pyrene	510 J ug/Kg		62
PCB-1254 (Aroclor 1254)	473 J ug/Kg		220
PCB-1260 (Aroclor 1260)	1130 J ug/Kg		220
Thallium (total)	5.33 mg/Kg	1.3	5.2

PBOW-04-SD-AA3-SWSD-03-A - 10/27/04		
Analyte	Value	PRG
Benzo(a)pyrene	130 J ug/Kg	62

Recommendations

- Conduct Additional Surface Soil Sampling
- Conduct Additional Sediment Sampling
- Investigate Waste Water Treatment Plant
- Abandon Open Borehole at AA3-BEDGW-004
- Perform Human Health and Ecological Risk Assessment

Engineering Evaluation/Cost Analysis Reservoir No. 2 Burning Ground

Presented by Jacobs Engineering

December 8, 2005

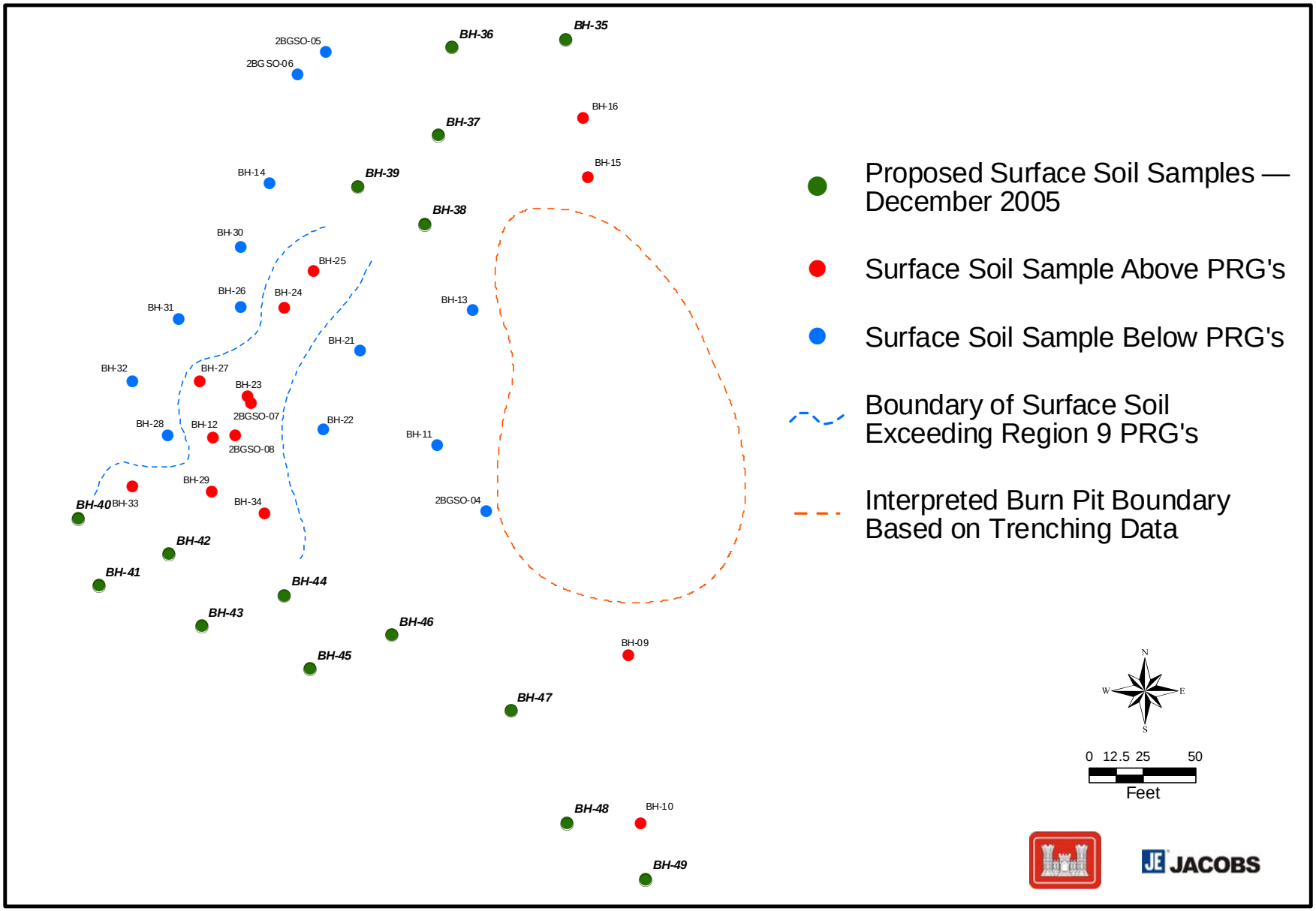
Reservoir No. 2 Burning Ground History

- 1998 Site Investigation
- 2004 – 2005 Remedial Investigation
- PRG Exceedances in Surface Soil and Burn Layer Material
- PCB’s, PAH’s, Nitroaromatics, Lead
- Engineering Evaluation/Cost Analysis

EE/CA Process

- Purpose — Evaluate and Select the Most Effective Remedial Alternative
- Delineation Sampling
- Treatability Studies
- Engineering Assessments
- Cost Analysis
- Final Report / Action Memorandum

Delineation of Surface Soil Contamination At Reservoir 2 Burning Ground



Treatability Study

- Bulk Material Sampling
- Lime Treatment — Explosives
- Advanced Oxidation — PCB’s & PAH’s
- Lead Stabilization — Phosphate Treatment
- Lead Stabilization — Asphalt Treatment

Schedule

- Delineation and Bulk Material Sampling is Ongoing
- Treatability Studies — Feb ‘06
- Alternatives Presentation — Feb ‘06 RAB
- Preferred Alternatives Presentation — April ‘06 RAB
- Draft EE/CA Report — May ‘06
- Interim Final EE/CA Report - Public meeting — July ‘06
- Final EE/CA Report — Aug ‘06
- Action Memorandum — Sept-Oct ‘06