



# **Agenda for June 25th Picatinny Arsenal Restoration Advisory Board**



- Attendance, Introductions & Correspondence
- Update on Burning Grounds (John Costea, Picatinny Deputy Garrison Commander)
- Old Business
- TAPP Contract and Financial Report
- Review of Next Edition of the Newsletter
- Update on Former DRMO Yard ICM (Ted Gabel, Picatinny; Tom Crone, ARCADIS)
- Updates on Group 3 Sites and Group 1 Sites (Tim Llewellyn, ARCADIS)
- Membership (new member and community co-chair election)
- Installation Restoration Program MMRP/Update in a Minute (if time allows; Ted Gabel, Picatinny)
- Synopsis and Next Meeting



# Group 1 (PICA 079)



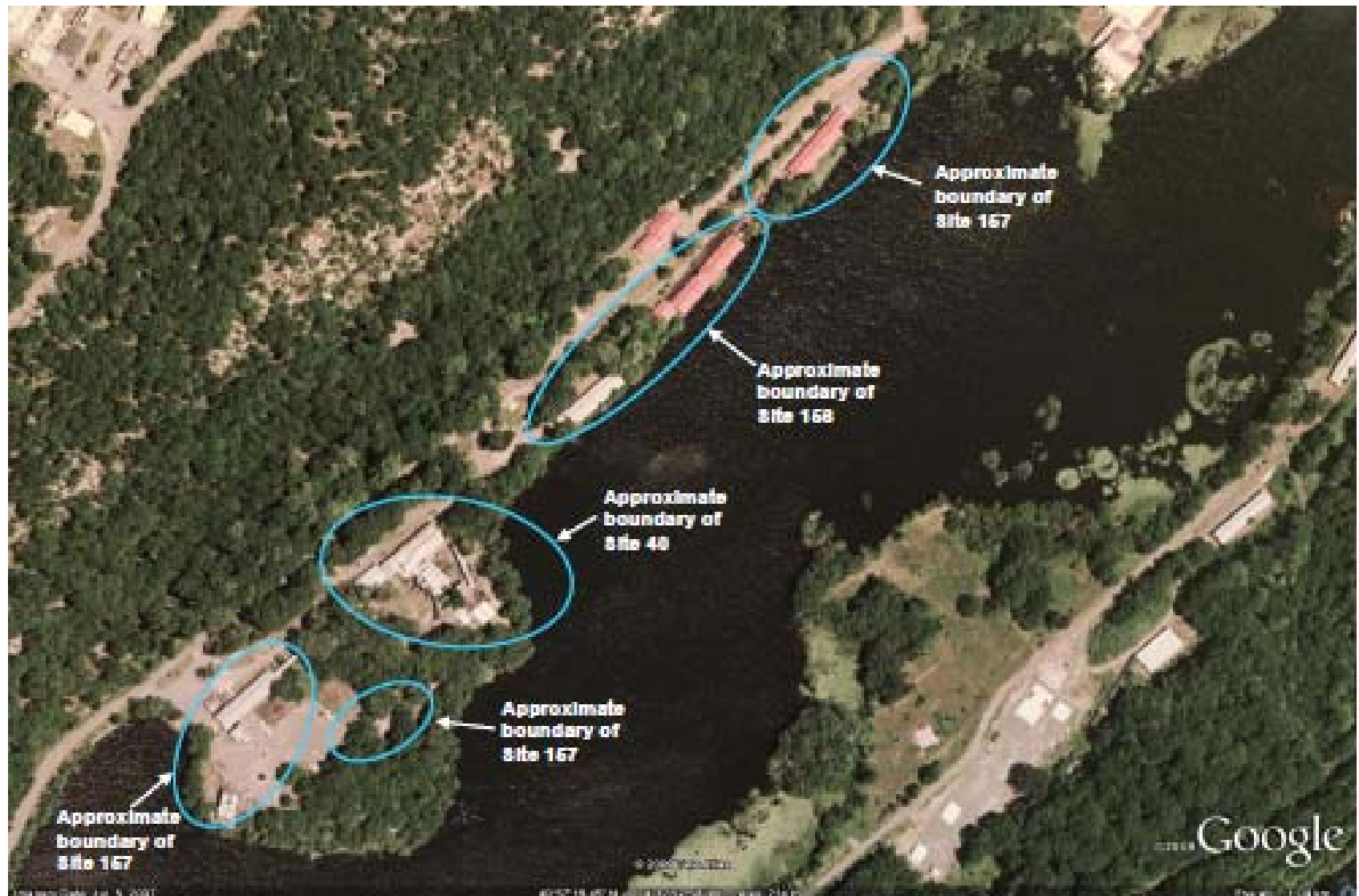


# Group 1 (PICA 079)

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Picatinny Arsenal, NJ





# Site Background and History



- Group 1 consists of 5 sites on the edge of Picatinny Lake
- Operated as a munitions production facility including
  - Washout of projectiles
  - Melt pour operations
  - Shell loading
  - Inspection and packaging
- Operations started as early as the 1930's
- Similar activities continue at Group 1



# Status of CERCLA Process



- ✓ Remedial Investigation (Characterization of Site)
- ✓ Feasibility Study (Assessment of possible remedies)
- ✓ Pilot scale testing (Field assessment of possible remedies)
- ☐ Proposed Plan (Public document to solicit input on preferred remedy)
- ☐ Record of Decision (Final legal document selecting remedy)
- ☐ Remedial Action (Implement Remedy)



# Summary of RI

- Chemical constituents documented at Group 1 :
  - Soil
    - Explosive compounds, metals, Poly Aromatic Hydrocarbons (PAHs), PCBs
  - Groundwater
    - Explosive compounds
  - Sediment
    - Explosive compounds in lake sediments



# Sediment



- **SEDIMENT**
  - Explosives in sediment are associated with historical pipe discharge (rather than groundwater discharge)
  - Sediment actions integrated with overall Picatinny Lake actions in separate FS/PP
- **SURFACE WATER**
  - No unacceptable risks associated with exposure to surface water



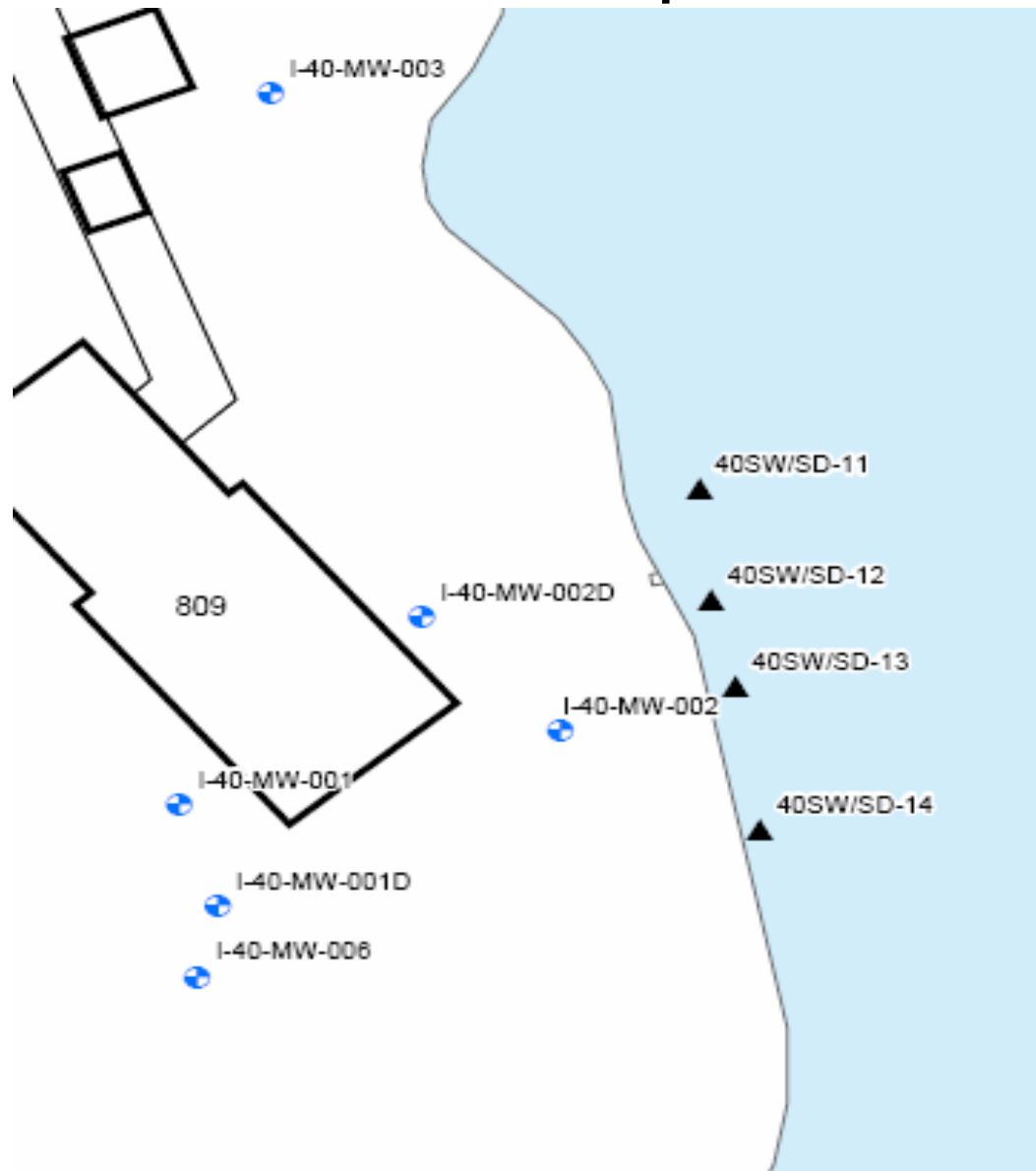


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# 2008 SD/SW Sample Locations







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# Summary of RI

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  - Groundwater
    - Explosive compounds
  - Sediment
    - Explosive compounds in Lake sediments



# Summary of RI

Chemical constituents in soil at Group 1 (ppm) :

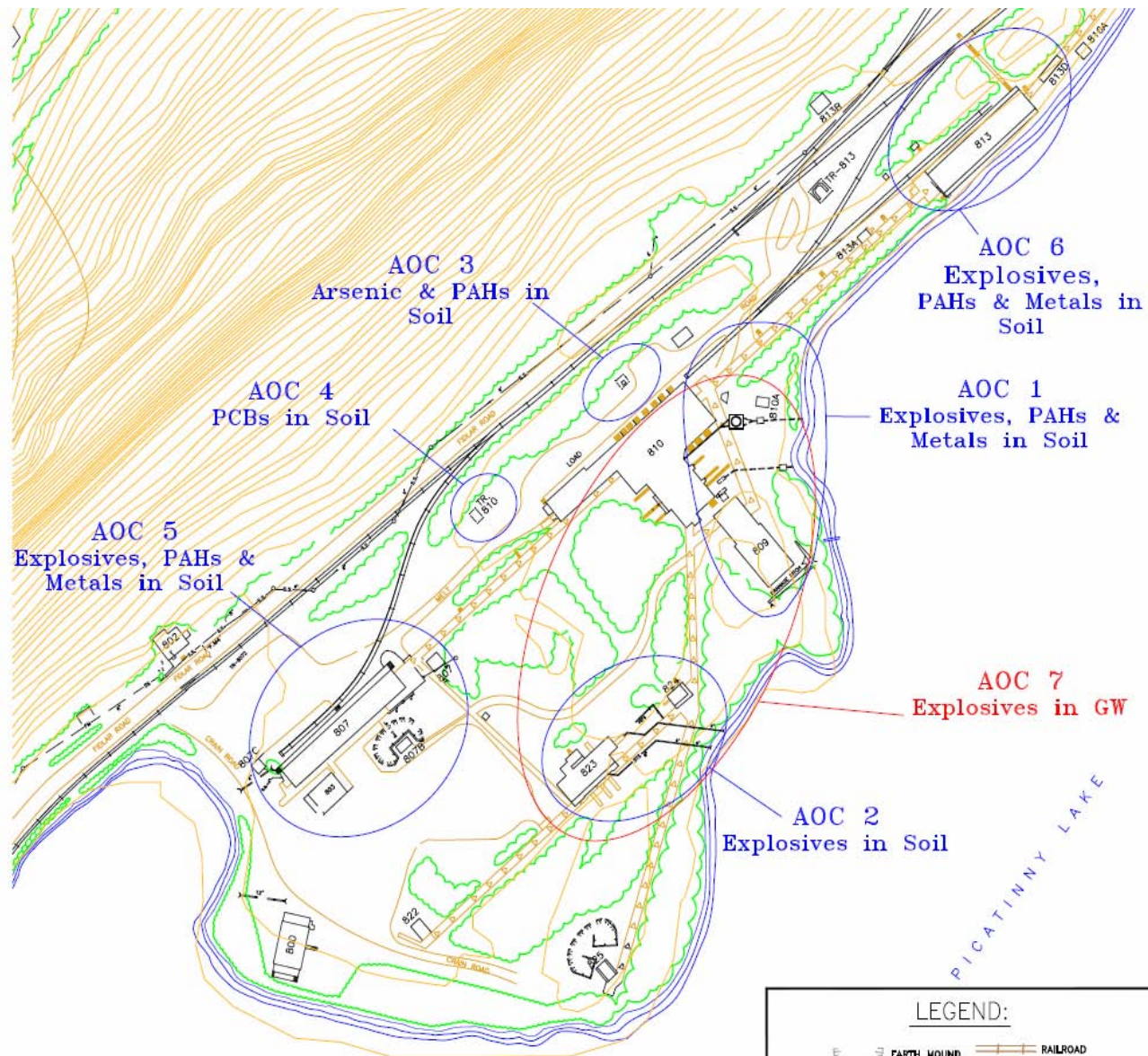
Chemical	Concentration range	Screening Criteria	Frequency of Detection
2,4 DNT	2.54 - 4.82	4	4
2,4,6 TNT	0.05 – 11,000	95	8
Arsenic	2.6 - 95	20	14
Copper	6.95 – 1,370	600	3
Lead	9.78 – 1,730	800	5
Zinc	30.6 – 2,300	1500	2
PCB (aroclor 1260)	0.085 – 10	1	4
PAHs	0.04 – 40	0.66 - 40	1 - 5



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ORIGINAL DRAWING BY SHAW ENVIRONMENTAL, INC.

#### LEGEND:

	EARTH MOUND		RAILROAD
	BUILDING		TREE LINE
	FORMER BUILDING		FENCE
	COVERED WALKWAY		TRANSFORMER
	SWAMP		BLAST WALL
	WATER		STORM SEWER
			SANITARY SEWER



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# Recommended Remedy

Excavation and off-site disposal of explosives contaminated soils (estimated to be 600 cu yards)

Land Use Controls for arsenic and polycyclic aromatic hydrocarbon (PAH) contaminated soil

Land Use Controls for PCB contaminated soil



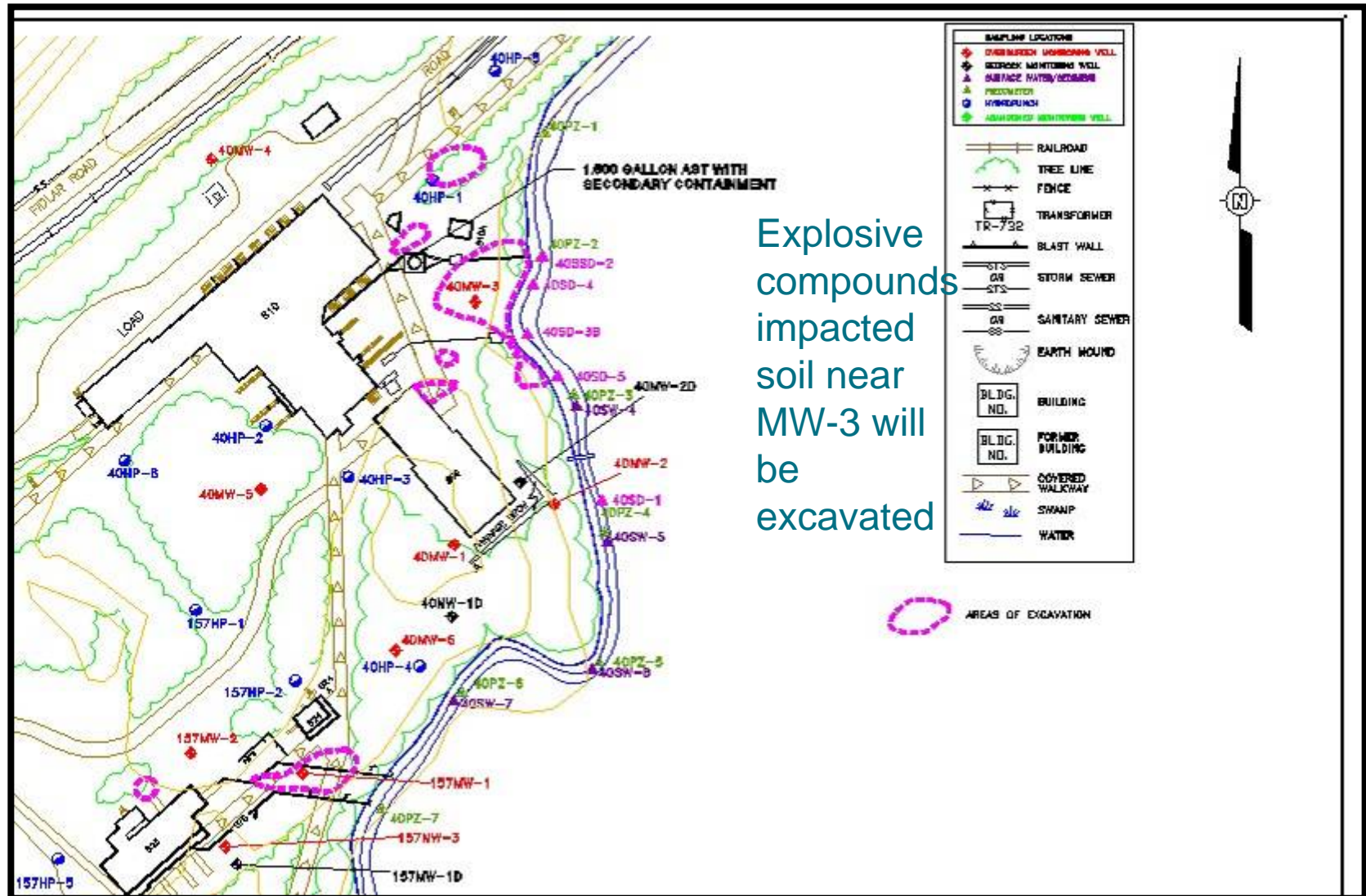


# Proposed Soil Excavation Areas

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Proposed Soil Excavation Area between Blding  
810 and Picatinny Lake



# Proposed Soil Excavation Area Along Picatinny Lake





# Summary of RI



- Chemical constituents documented at Group 1 :
  - Soil
    - Explosive compounds, metals, Poly Aromatic Hydrocarbons (PAHs), PCBs
  - Groundwater
    - Explosive compounds





# Conceptual Site Model



Unconfined Aquifer – sand silt and gravel (80 to 100 ft thick)

- Depth to water: 3 to 12 ft bgs
- GW flow NE to SE toward Picatinny Lake
- GW velocity estimate to be 60 ft year



# TNT Plumes 2002 and 2007

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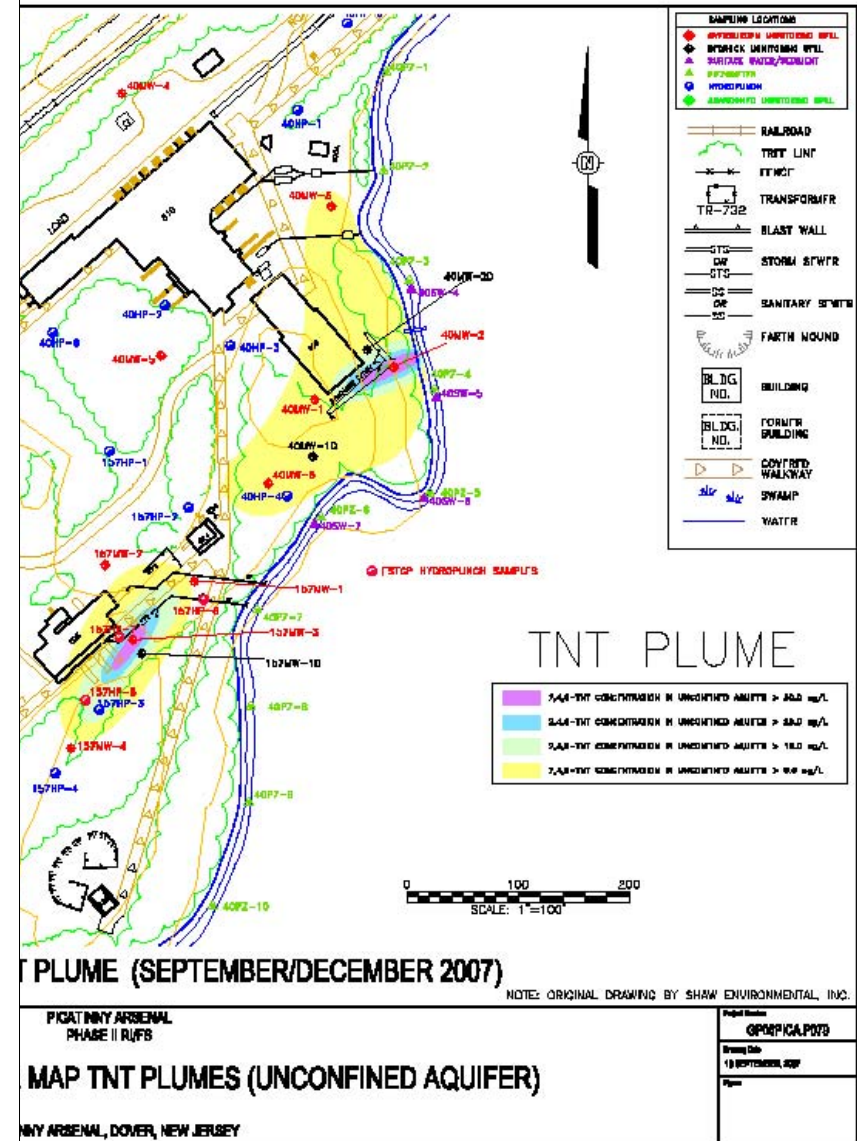


## Site 40

	Oct 07/Jan08	Sept 08
I-40-MW-001 ug/L	4.87 ug/L	1.8
I-40-MW-002 ug/L	109 ug/L	46 ug/L
I-40-MW-003 ug/L	ND	9.65
I-40-MW-006 ug/L	ND	ND

## Site 157

I-157-MW-001 ug/L	ND	ND
I-157-MW-002 ug/L	ND	ND
I-157-MW-003 ug/L	32.0 ug/L	21.0
I-157-MW-08D ug/L	13.0 ug/L	4.1



# RDX Plumes 2002 and 2007

## US Army Garrison



Oct 07/Jan08

Sept 08

## Site 40

I-40-MW-001	88.4 ug/L
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## 8.1

ug/L

I-40-MW-002	87.6 ug/L
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48.0

ug/L

I-40-MW-003	31.3 ug/L
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## 11.0

ug/L

I-40-MW-006	48.6 ug/L
-------------	-----------

11.0

ug/L

## Site 157

I-157-MW-001	25.0 ug/L
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21.0

ug/L

I-157-MW-002	42.0 ug/L
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25.5

ug/L

I-157-MW-003	14.0 ug/L
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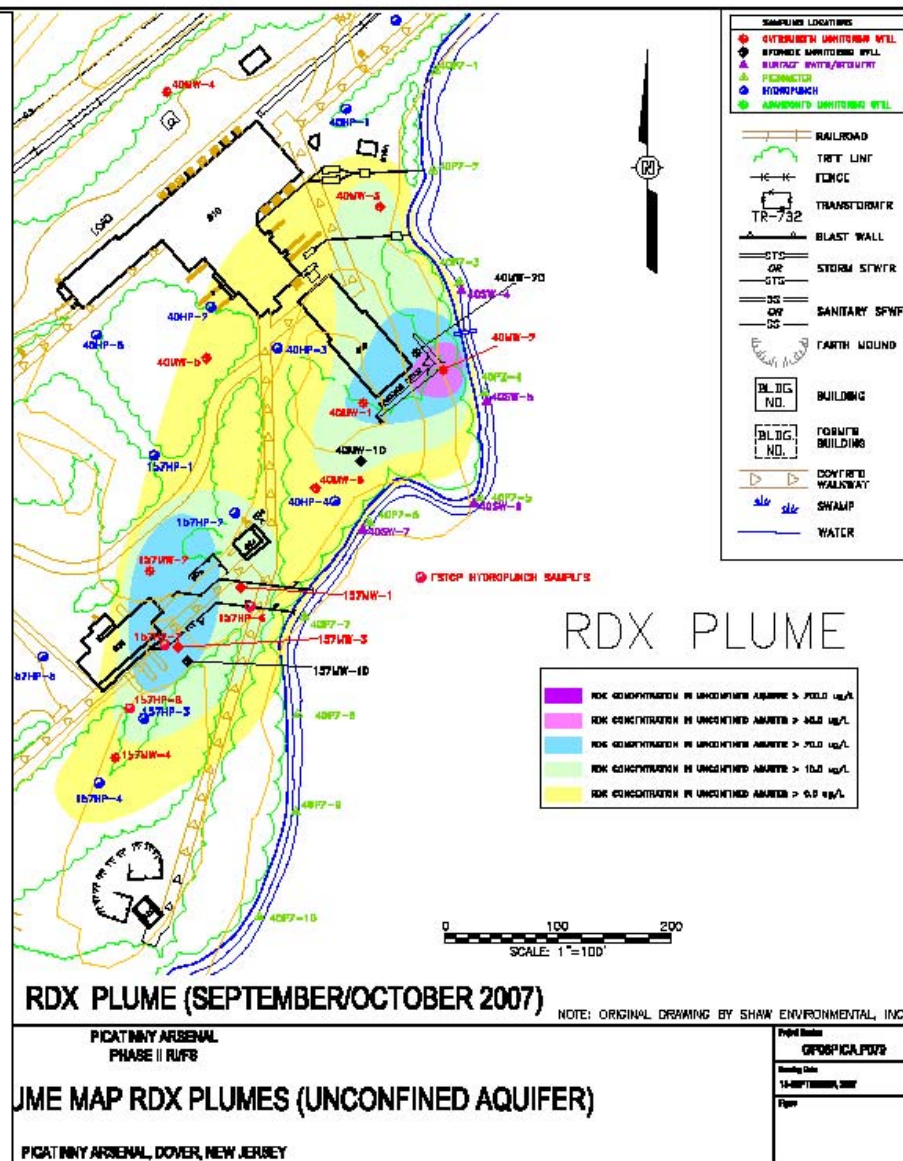
## 5.0

ug/L

I-157-MW-08D	46.0 ug/L
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23.0

ug/L



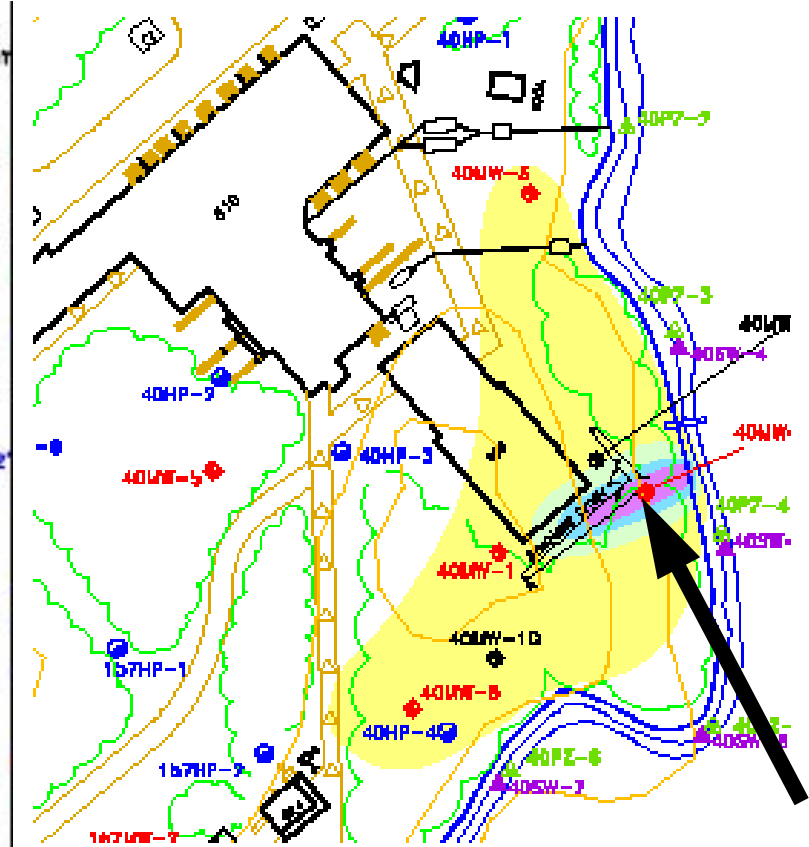
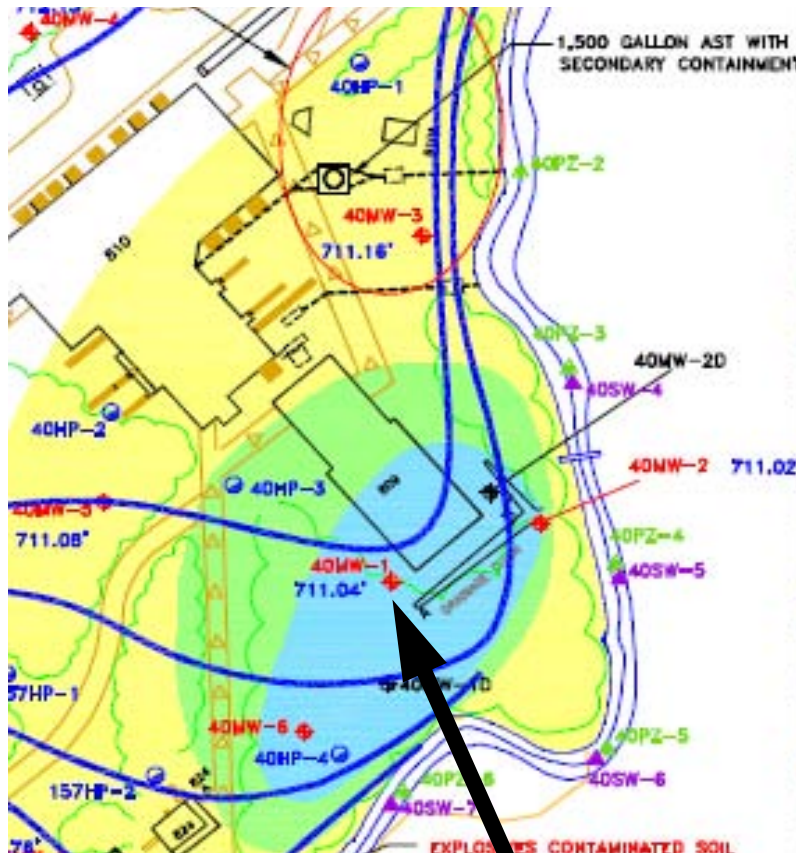


# Shift in Plume Center at Site 40

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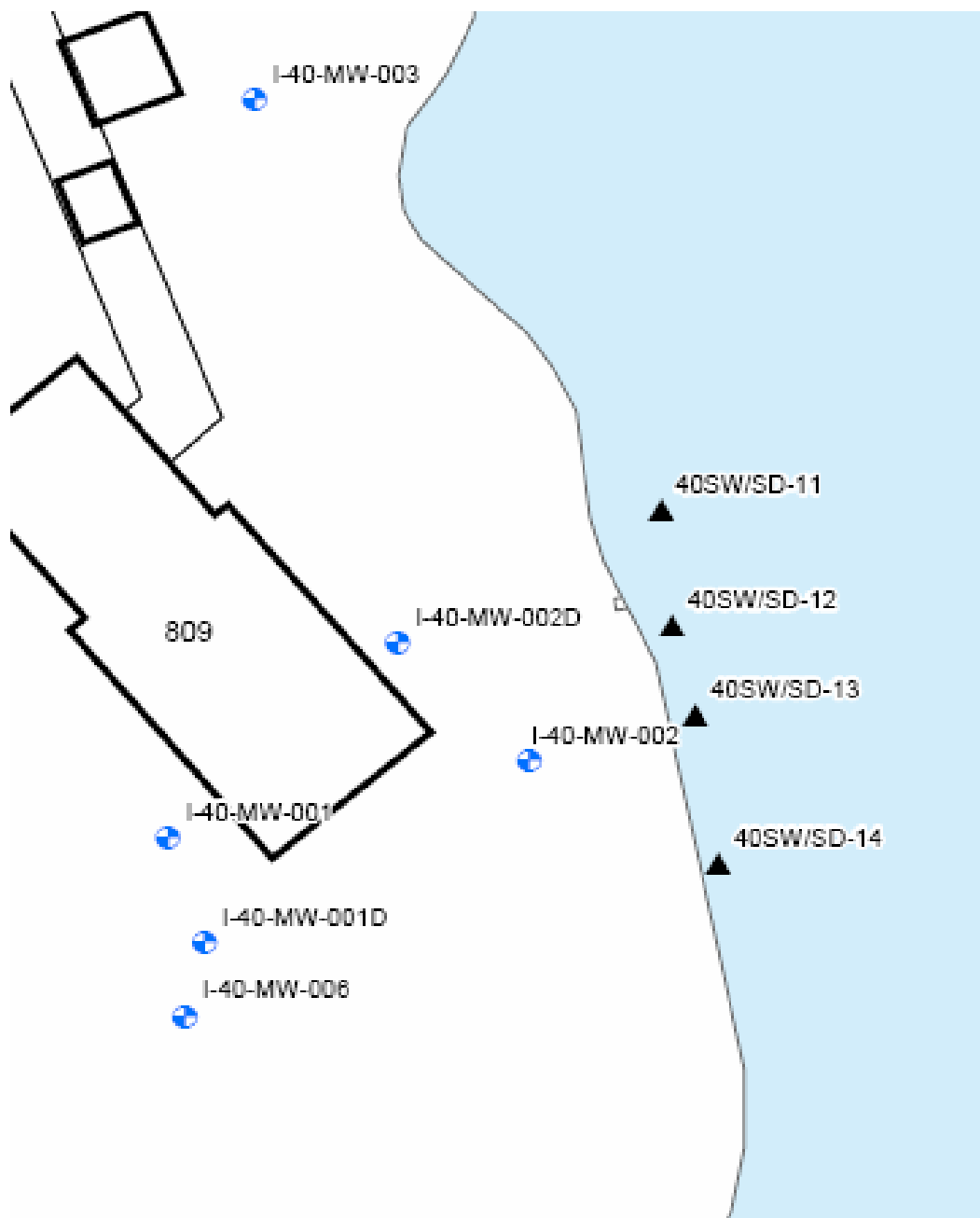
# 2008 SD/SW Sample Locations



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# Remedial Timeframe--TNT



Evaluated assuming no biodegradation

TNT: 11 years

- TNT at 40MW-2: 102 ug/L
- Assumed cleanup goal of 2 ug/L
- *Consistent with observations*

40MW-1: TNT 400 ug/L to 5.8 ug/L in 8 years

40MW-6: TNT 56 ug/L to 5.5 ug/L in 5 years



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# Remedial Time Frame -RDX

Evaluated assuming no biodegradation

RDX: 9 years

- RDX at 40MW-2: 82 ug/L
- Assumed clean up goal of 2 ug/L
- *Consistent with observations at 40MW-6*

RDX 220 ug/L to 22 in 5 years



# Recommended Action

Based on:

- Rapid decline of TNT and RDX under natural conditions
- Lack of impacts to Lake sediments and surface water

Remedial alternative for groundwater is recommended to be monitored natural attenuation (MNA)





# Group1 Schedule

- Pre-Design Technical Memorandum
  - Final submitted 13 April 2009
- Proposed Plan
  - Draft is prepared and under final review
- Schedule
  - Draft PP to Army: 6 July 2009
  - Draft Final PP to Regulators: 22 July 2009
  - Public Meeting: 28 August 2009



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*Update*

**Installation Restoration Program  
June 25, 2009 Presentation  
to the  
Picatinny Arsenal Restoration Advisory Board**



# Investigations Status



- **Most Remedial Investigations considered completed**
- **Continued Groundwater and Surface Water Monitoring:**
  - Area D Plume Groundwater
  - Area E Groundwater
  - Post Farm Groundwater
  - Area B Groundwater
  - Green Pond and Bear Swamp Brook
- **Mid-Valley Groundwater wells and reevaluation**
- **Sampling of Site 111 Groundwater for Perchlorate and drinking water wells**



# Status of Submitted Feasibility Studies



- **FS for 25 IC sites: EPA comments on Revision**
- **600 Hill GW submitted in March – approved by NJDEP – need EPA comments**
- **Land Use and Engineering Active for 25 Sites**
- **Groundwater at PICA 13/Bldg 91**
- **PICA 111 Sites**





# Proposed Plans

- **Public Notices on 2 Sites possible for this Fiscal Year**
- **Had expected up to 6 Proposed Plans**
- **EPA and Army differences stalled most documents**
- **Army Team has decided Proposed Plan more of a public document than a legal document**





# Status of the Records of Decision



- **Signed ROD, Implemented:**
  - Site 20/24 considered complete except LUC monitoring
  - Post Farm: Action is considered complete except for monitoring
  - Green Pond/ Bear Swamp Brook: Only monitoring remains
  - Area D Groundwater: Permeable Reactive Barrier monitoring continues
  - Site 25/26: ICs and vegetative cover considered complete
  - Site 180 ROD: Considered complete except LTM
  - Area E Groundwater: Consider complete except for the MNA monitoring
  - 13 Sites Institutional ROD PICA 20- Approved by EPA, LUC ongoing
  - Site 61/104 considered complete
  - Area B Groundwater: Considered Remedy in Place
  - Site 31/101 DRMO Yard: Action ongoing
- **Signed ROD:**
  - Burning Ground: Impermeable Cover and Reuse - must wait for incinerator
- **ROD to be signed by Army but also needs to be signed by EPA, hopefully this year - all need NJDEP concurrence:**
  - Southern Boundary/Area C Groundwater ROD recently commented on by the
  - EPA and earlier by NJDEP (Public Noticed in October 2007 and initially submitted in June 2008)



# Remedial Design Reports

**Remedial Design Reports describe the results of action - all approved by EPA**

- **Post Farm Report**
- **Site 180 Report**
- **Site 25/26 Report**
- **Area B GW**
- **Area E GW Report**
- **Area D GW Report**
- **Green Pond Brook/Bear Swamp Brook**
- **Site 104/61 Report**



## **Programmatic Developments Picatinny's Installation Restoration Program**



- **2009 Installation Action Plan being developed for IRP and MMRP – validation meeting only internal**
  - **Will be signed and provided to RAB and EPA**
  - **Can not provide cost data to Public**
- **EPA requires NJDEP concurrence on RODs**
- **Updated Community Relations Plan considered final this fiscal year and provided to RAB community co-chair; available to all**



# Status of Military Munitions Response Program (MMRP)



- Addresses Munitions and Explosives of Concern at eligible sites (non-operating ranges) at and off Picatinny
- ***Site Inspection Report*** approved by Army and regulators in April 2008
- Remedial Investigation – scheduled for FY 2010
- On-going Construction Support at the new construction sites within eligible areas
- Completed Projects
  - EE/CA for RCI Footprint: Investigation and Removal of 49 acres of leased land – Report forthcoming
  - EE/CA for CDC Footprint, BRAC PHST and ERM
  - 2<sup>nd</sup> Tilcon Removal Action for 20 additional acres: completed – report approved.