

New Cumberland Army Depot Formerly Used Defense Site (FUDS) Marsh Run Park Site Restoration Community Meeting

Fairview Township,
York County, Pennsylvania

April 23, 2013



US Army Corps of Engineers
BUILDING STRONG



Agenda

- Purpose
- Introductions
- FUDS Background
- Remedial Investigation
- Remedy
- Path to Site Closure
- PADEP Act 2/Explanation of Significant Difference
- Restoring Marsh Run Park
- Questions/Comments
 - Poster Session



Introductions – Project Team

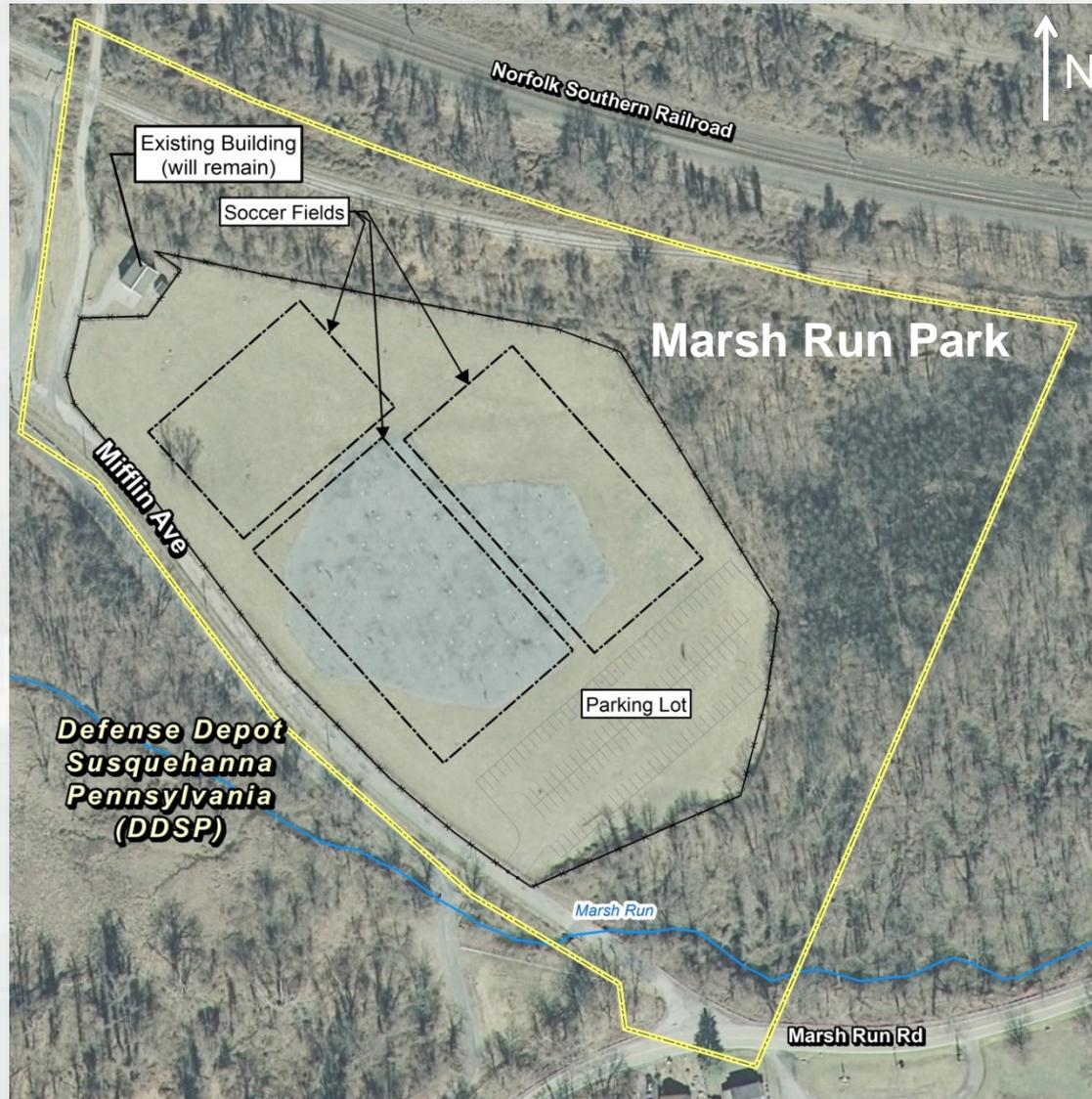
- Army Corps of Engineers (USACE)
- Fairview Township
- Pennsylvania Department of Environmental Protection (PADEP)
- EA Engineering, Science, and Technology, Inc. (EA)
- ARM Group, Inc. (ARM)



Marsh Run Park – Aerial Photo

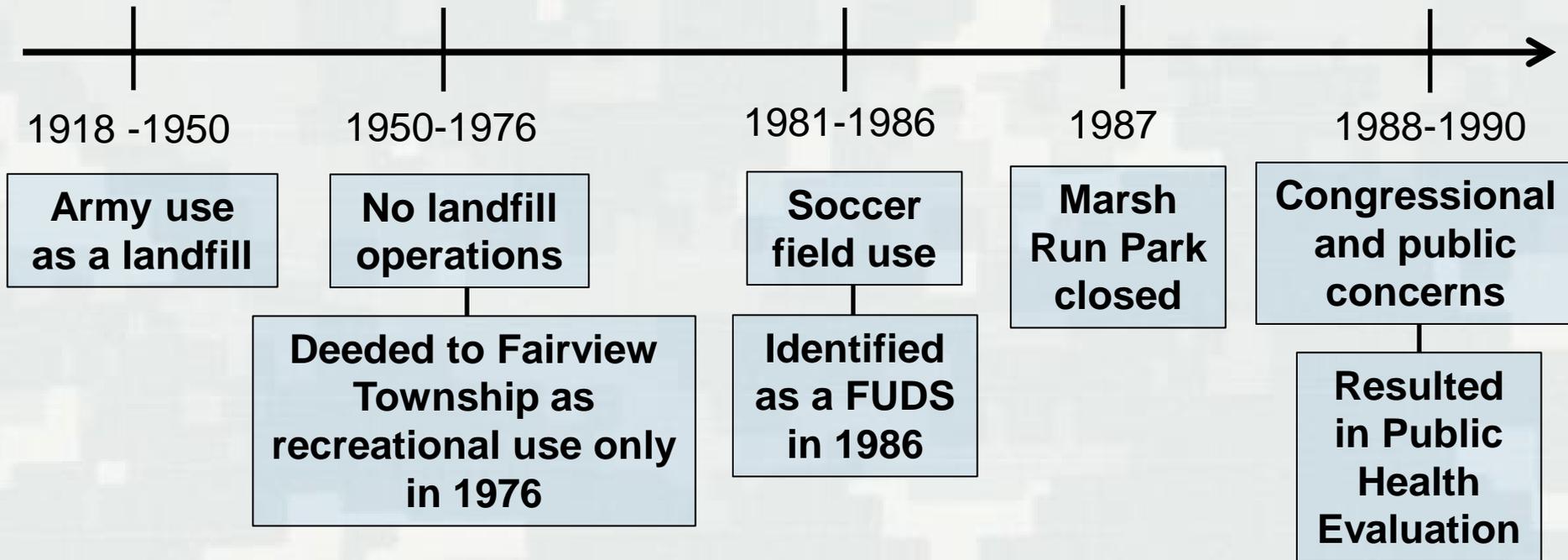


Site Restoration – Soccer Fields



Formerly Used Defense Site

History



Investigations

1987-1992

Site remedy

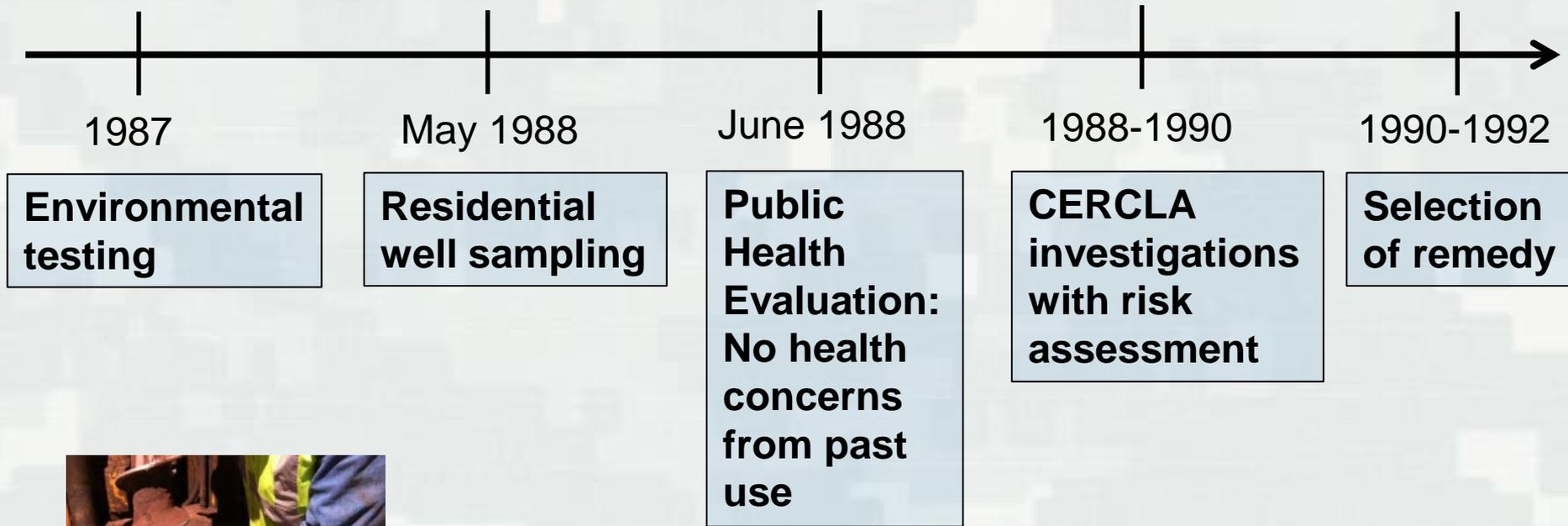
1992 -Present

Site restoration

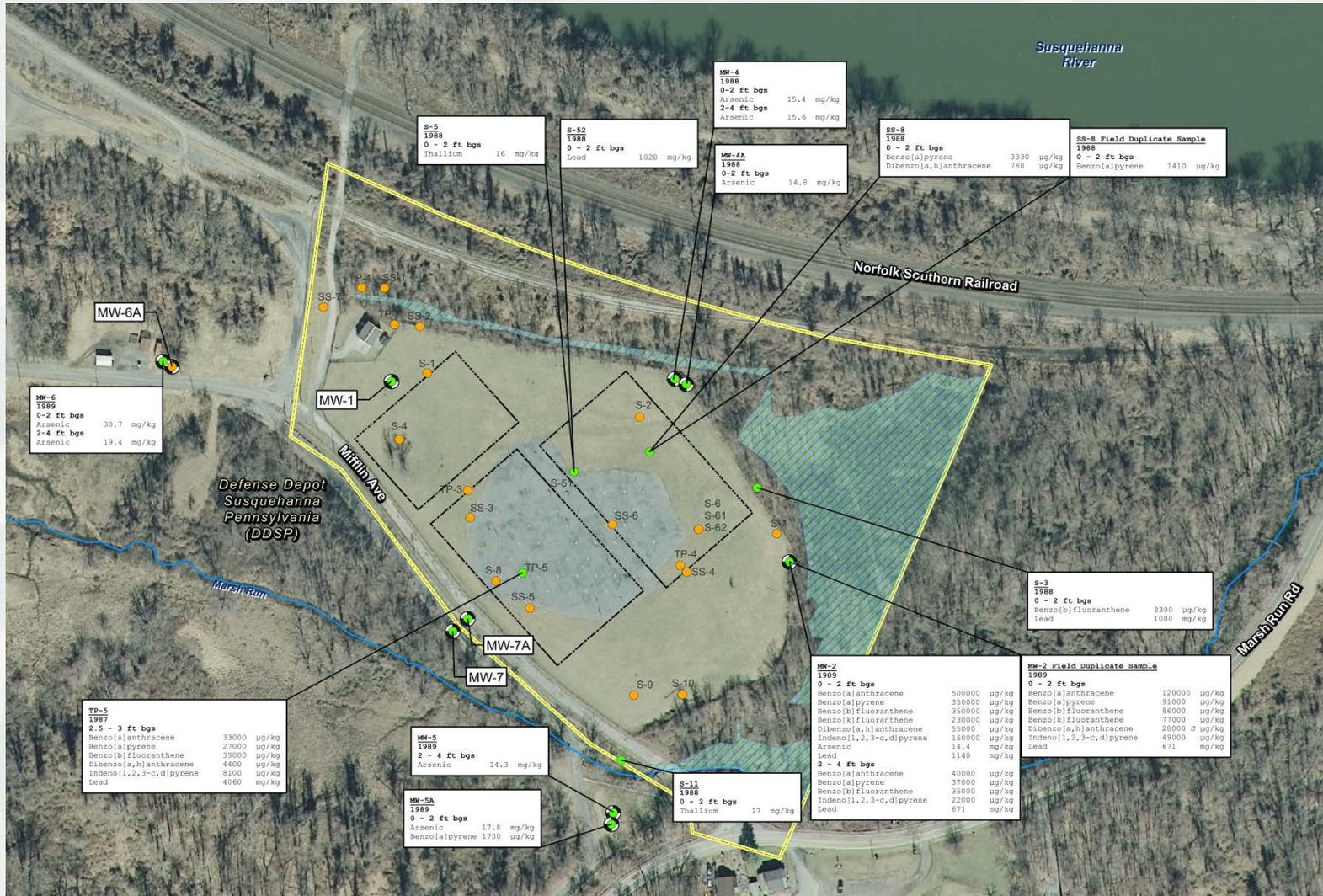
Present - 2014



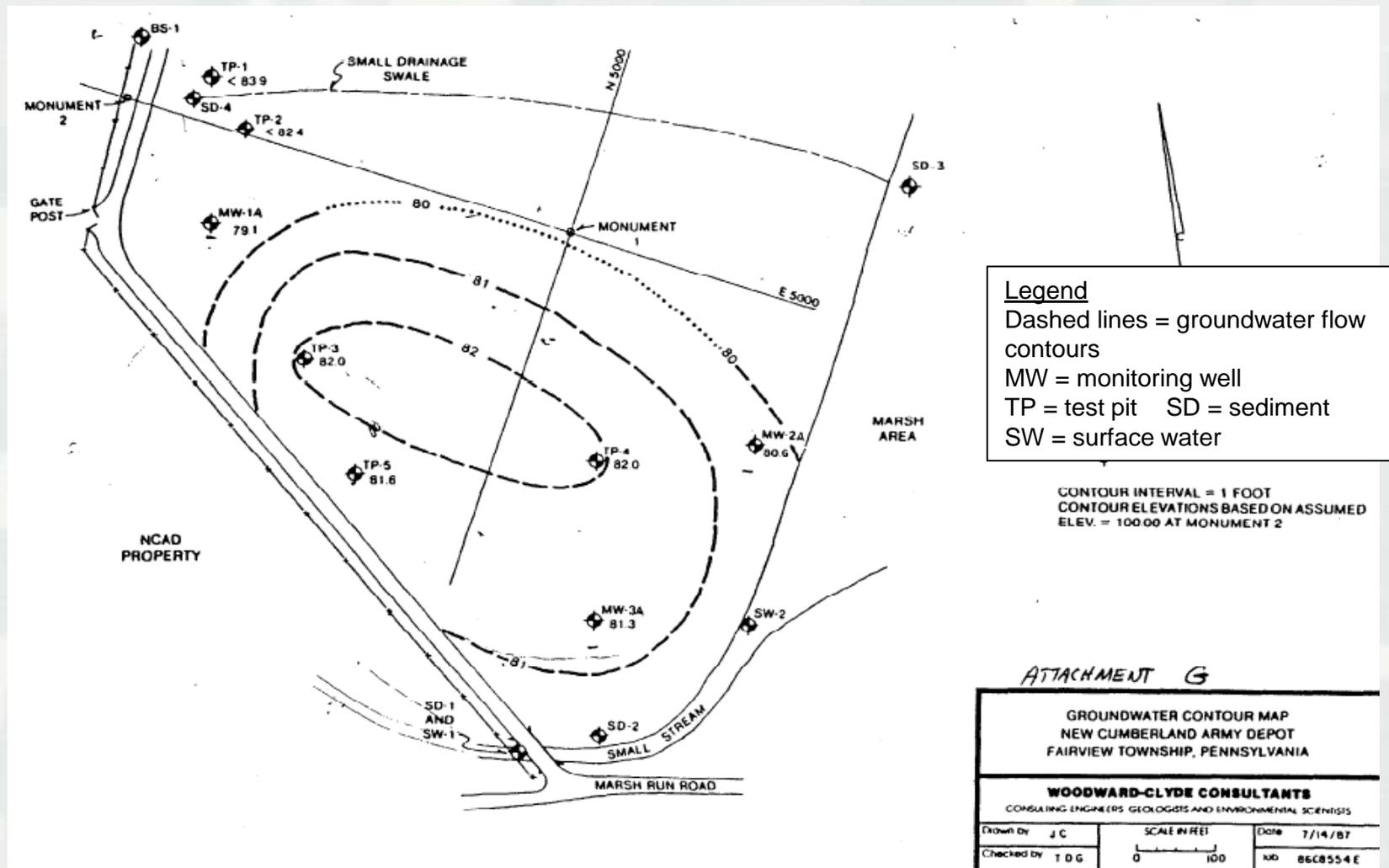
Investigations: 1987 to 1992



Marsh Run Park Soil Data: 1987-1990



Marsh Run Park Investigation: 1987



Groundwater Sampling: 1987 to 1992



Record of Decision – Remedy (cleanup)

1992: The Record of Decision (ROD) was signed by the Pennsylvania Department of Environmental Protection (PADEP) and the Army. The ROD established the site cleanup strategy below.

- Operate a groundwater pump and treat system for the bedrock aquifer.
- Vent soils via vacuum extraction in the landfill area.
- Establish Remedial Action Objectives (RAOs) (numeric cleanup goals).

Remedial Action Objective	Cleanup Standards
Reduce or eliminate the chlorinated solvent contamination present in the bedrock aquifer to ground-water cleanup levels (MCLs). The cleanup standards to be achieved for volatile organic contaminants are as follows:	trichloroethene – 5 µg/L cis-1,2-dichloroethene – 70 µg/L trans-1,2-dichloroethene – 100 µg/L vinyl chloride – 2 µg/L tetrachloroethene – 5 µg/L



Remedy-Dual Phase Vapor Extraction System: 1996-2004

1996 to 2002: Analysis and re-design of remedy

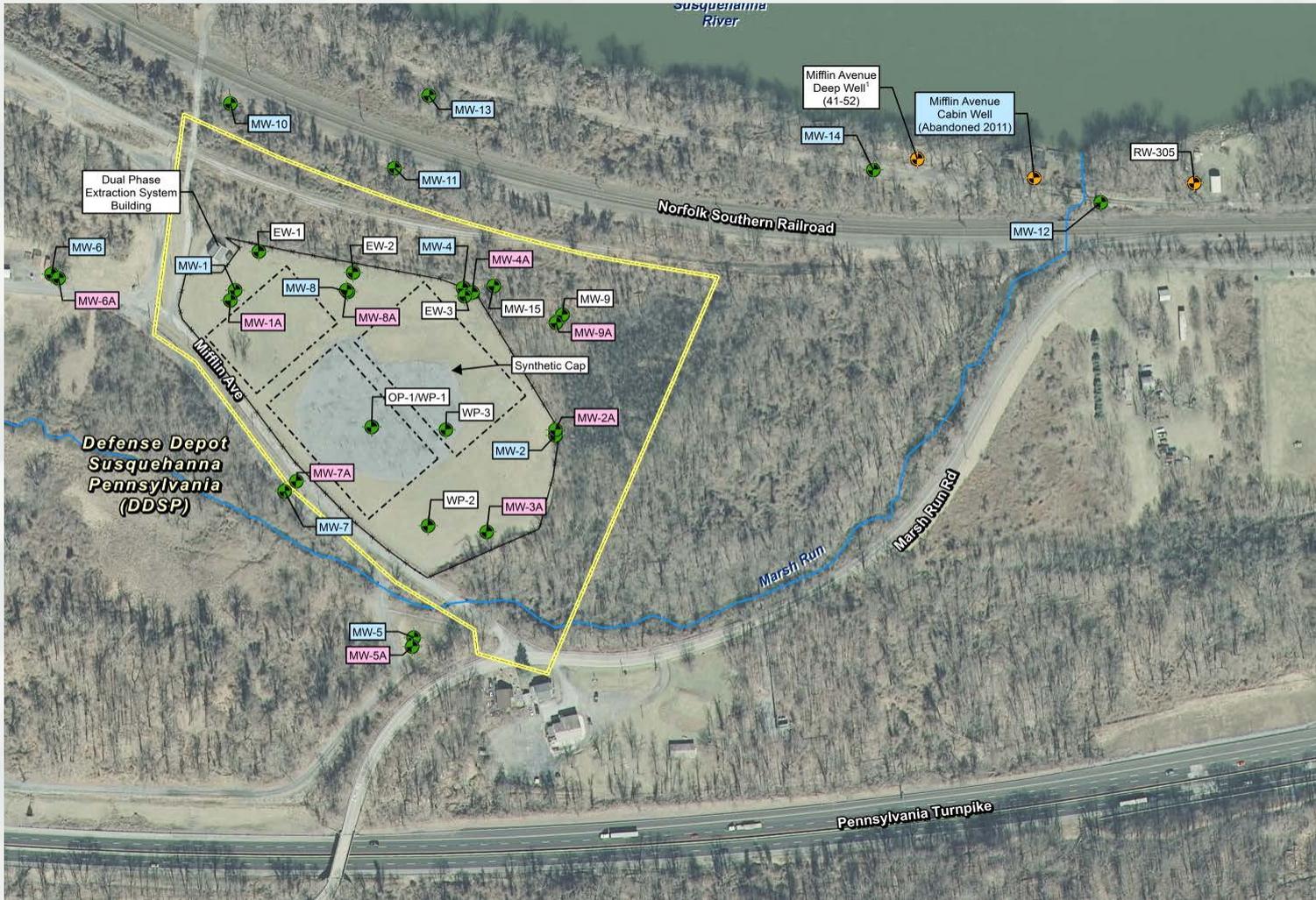
1999: Explanation of Significant Differences (landfill area: soil vapor extraction to dual phase, and bedrock groundwater: containment to natural attenuation)

2002 to 2004: New system operation (dual-phase soil vapor and groundwater extraction)

2004: System shut down / remediation achieved for volatile organic compounds at landfill / remedy complete in shallow groundwater (<60 ft)



Groundwater Well Locations



Legend

- Groundwater Well/ Well Point
- Residential Property Well
- Formerly Used Defense Site (FUDS) Boundary
- Fence
- Stream
- Overburden Well
- Upper Bedrock Well

MW = Monitoring Well
 EW = Extraction Well
 WP/OP = Well Point
 RW = Residential Well
 A = Overburden Well, e.g. MW-9A

Notes:

¹The Mifflin Avenue Deep Well was converted to the Mifflin Avenue Cabin supply well in 2011. 41-52 represents the shallow sampling interval, in feet below ground surface, during the groundwater inventory at the Mifflin Avenue Deep Well.

Aerial Photograph Source:
 PAMAP Program, PA Department of Conservation and Natural Resources, Bureau of Topographic and Geologic Survey, 2008



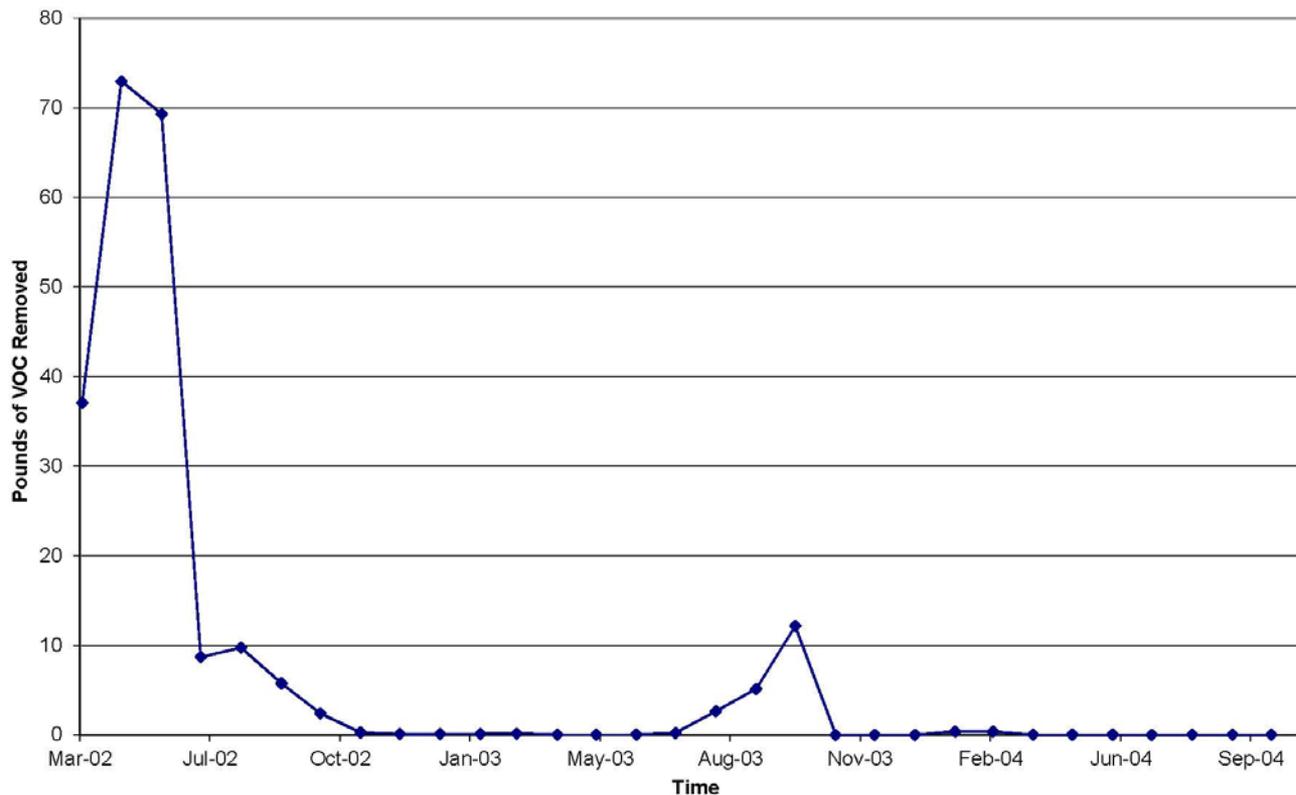
Shallow Groundwater Results

Monitoring Well	Date	PCE 5 µg/L	TCE 5 µg/L	<i>cis</i> -1,2-DCE 70 µg/L	<i>trans</i> -1,2-DCE 100 µg/L	Vinyl Chloride 2 µg/L
MW-1A	5/31/2011	ND	10.7 J	53.1 J	6.1 J	0.37 J
MW-2A	6/1/2011	ND	0.84 J	ND	ND	ND
MW-3A	5/31/2011	ND	ND	ND	ND	ND
MW-4A	6/1/2011	ND	ND	ND	ND	ND
MW-5A	4/1/2009	ND	ND	ND	ND	ND
MW-6A	4/1/2009	ND	ND	ND	ND	ND
MW-7A	4/1/2009	ND	ND	ND	ND	ND
MW-8A	6/1/2011	ND	ND	ND	ND	ND
MW-9A	6/1/2011	ND	ND	ND	ND	ND
ND = Non-Detect						



Dual-Phase Soil Vapor Extraction System

Summary of Monthly VOC Mass Removal in Pounds
Dual-Phase Soil Vapor Extraction System
Marsh Run Site, York County, PA



System Started April 15, 2002

System Shutdown Oct. 31, 2004



One Cleanup Program

2004: U.S. EPA and PADEP agreed to establish the One Cleanup Program, and the Army Corps of Engineers intended to achieve concurrent CERCLA site closure through the PADEP Act 2 Land Recycling Program

2004: Site entered Act 2; PADEP requested additional onsite and offsite data (eight additional quarters of groundwater data collected)



Continued Monitoring and Delineation: 2004-Present

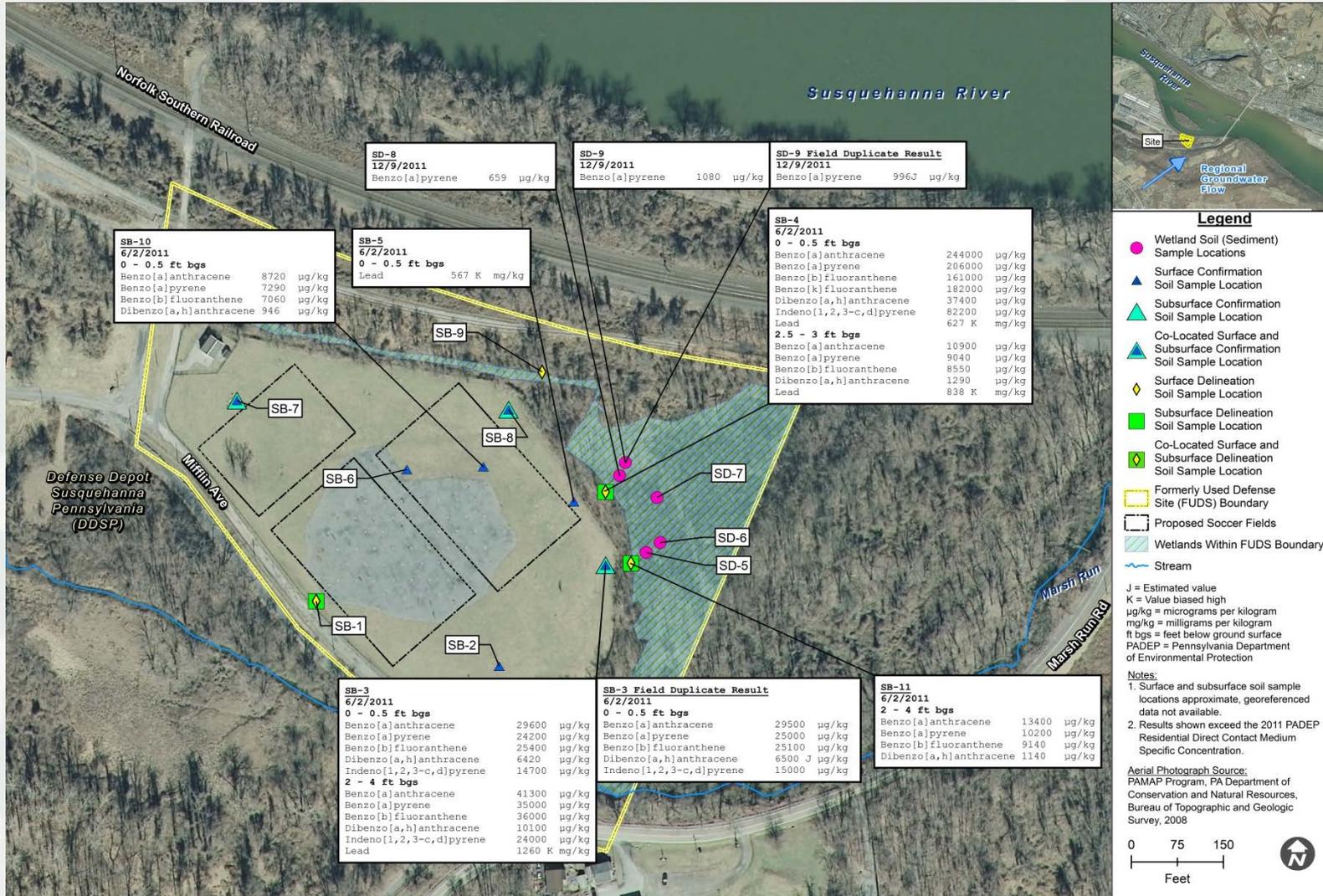
2004 to present: Army Corps of Engineers continued implementing the remedy, monitoring the landfill area and assessing bedrock groundwater and potential offsite impacts.

2005: Installed 5 wells off-site (downgradient) and began monitoring at downgradient private properties.

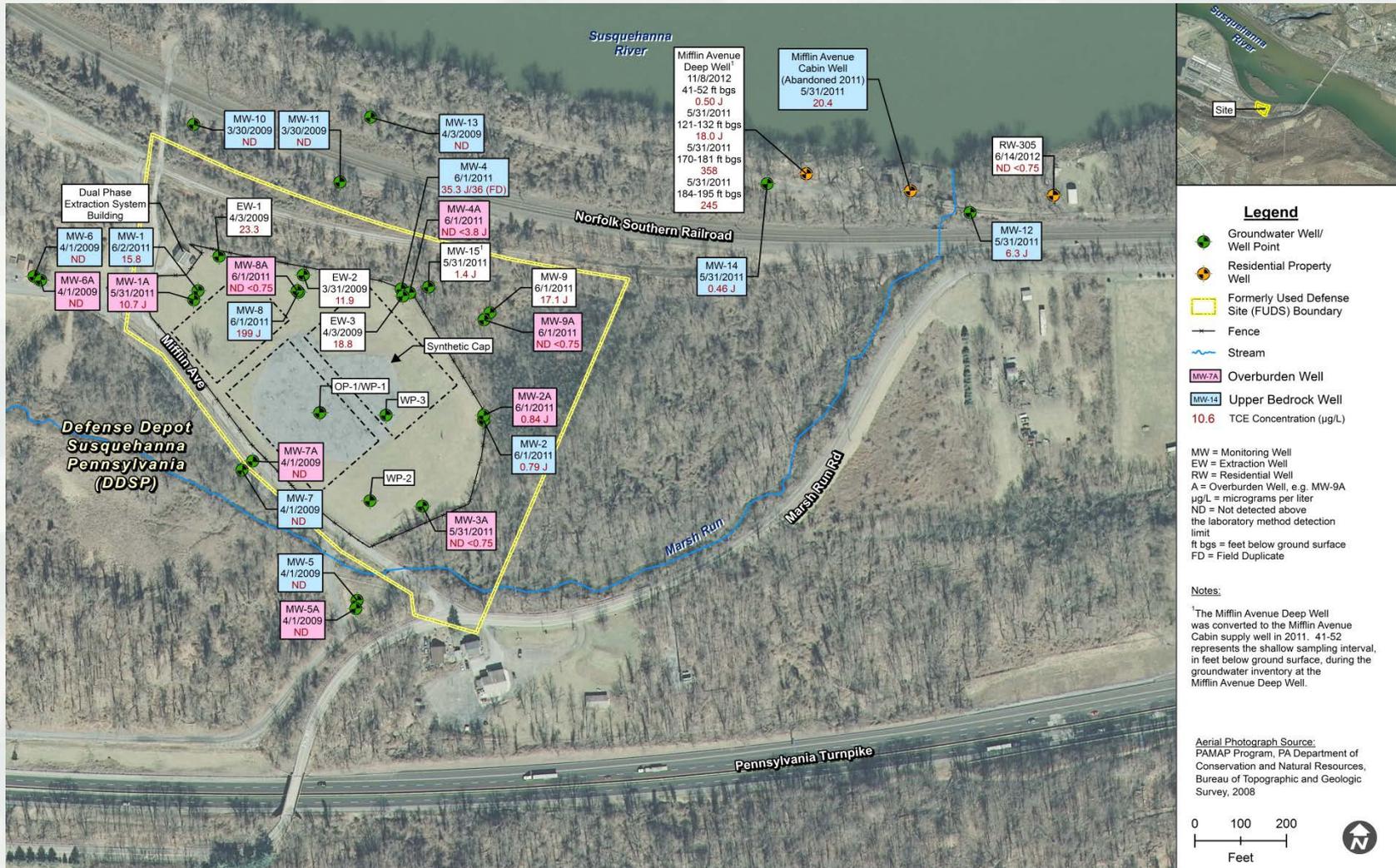
2010 to 2012: Performed additional onsite and offsite delineation of soils and groundwater.



Additional Soil Delineation/Confirmation: 2011

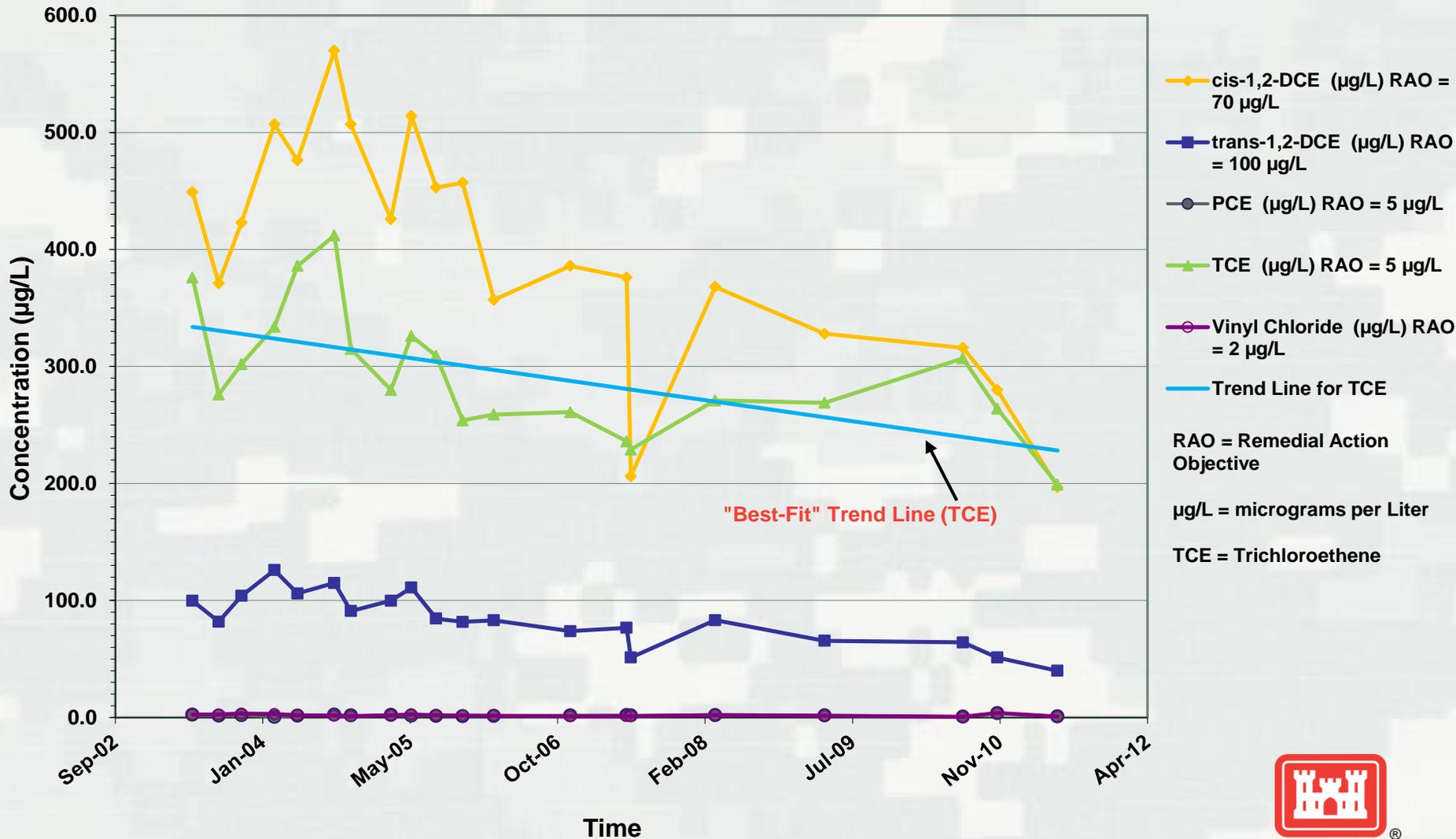


Deep Groundwater Monitoring (>60ft)



Deep Groundwater Results in MW-8 (>60 ft)

Trend Plot of Bedrock Aquifer Well MW-8 Target VOC Concentrations vs. Time



Evaluation of Marsh Run Park Use

- Risk evaluations verified the area is safe for use
 - No health concerns for adult or child park visitors, trespassers, or construction workers
 - No health concerns to residents in area
 - No health concerns to children in contact with water or sediment in Marsh Run creek
 - No concerns to ecological habitat
- Groundwater at depth should not be used



Human Health Evaluation – Risk Assessment

A “risk assessment”:

- shows who is exposed and how
- evaluates current and future site users for health concerns

At Marsh Run Park, potential human receptors are:

- construction workers, trespassers
- recreational users, and offsite residents

The potential pathways of exposure are:

- contact with surface soil
- contact with surface water/sediment in Marsh Run
- contact with groundwater including drinking

For *example*, a child recreational user who visits the park 52 days/year for 10 years may ingest, have skin contact with, and inhale soil particles from soil each day they visit the park.



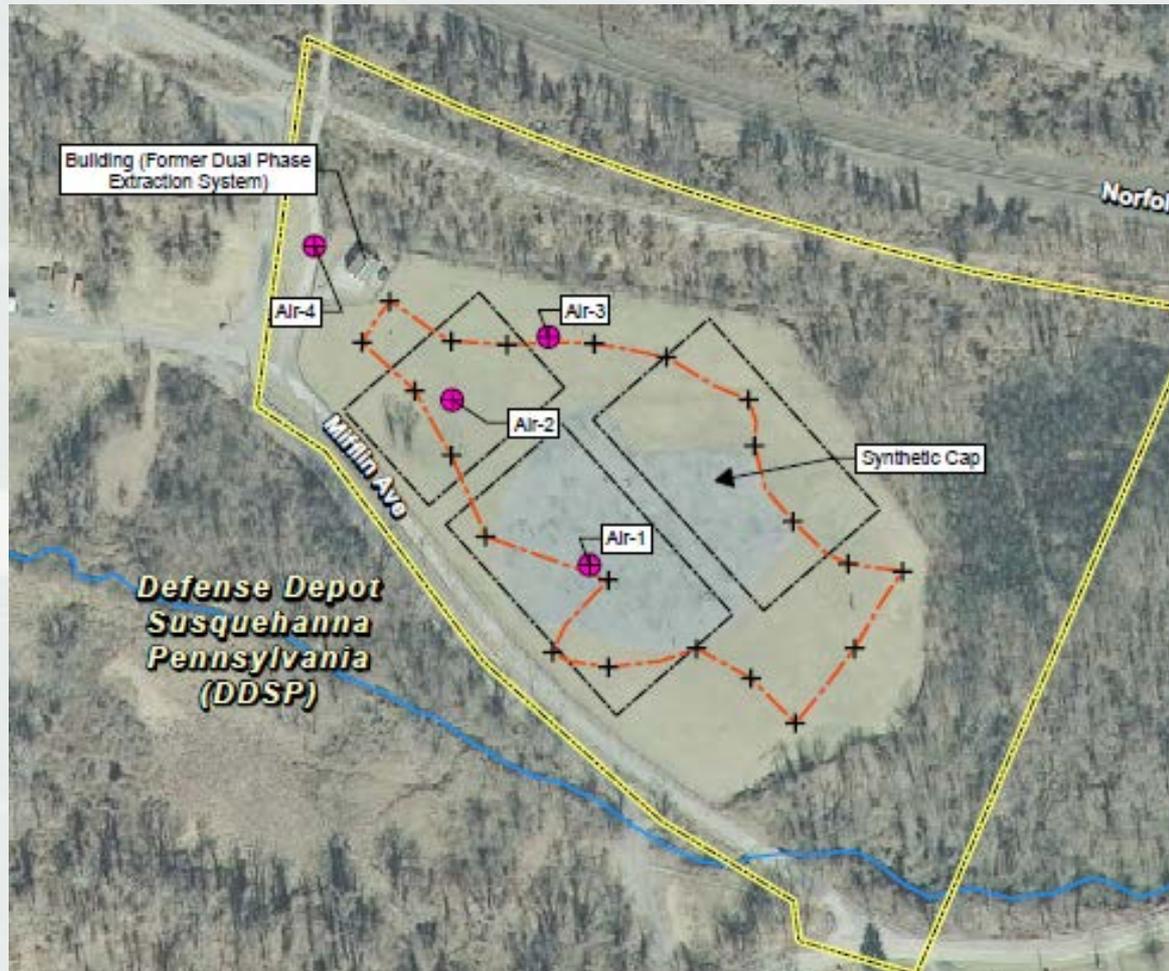
Risk Assessment – Vapor Intrusion

- Evaluated potential for health concerns from volatile chemicals in subsurface that may enter into buildings at the site and offsite
 - Site evaluation included potential bathroom or concessions
 - Offsite evaluation included a resident living above groundwater plume
- Determined no health concerns from inhalation



Outdoor Air Sample Locations: June 2012

Collected samples to evaluate if volatile chemicals in subsurface are present within the outdoor air at the soccer fields.



Outdoor Air Sample Results: June 2012

No detections of volatile organic compounds

	Sample Name:	AIR 1	AIR 2	AIR DUP	AIR 3	AIR 4
	Parent Sample ID:			AIR 2		
	Sample Date:	6/15/2012	6/15/2012	6/15/2012	6/15/2012	6/15/2012
Analyte (VOCs)	Unit					
Cis-1,2-dichloroethene	µg/m ³	ND (0.4U)	ND (0.4U)	ND (0.4U)	ND (0.4U)	ND (0.4U)
Tetrachloroethene	µg/m ³	ND (0.7U)	ND (0.7U)	ND (0.7U)	ND (0.7U)	ND (0.7U)
trans-1,2-dichloroethene	µg/m ³	ND (0.4U)	ND (0.4U)	ND (0.4U)	ND (0.4U)	ND (0.4U)
Trichloroethene	µg/m ³	ND (0.5U)	ND (0.5U)	ND (0.5U)	ND (0.5U)	ND (0.5U)
Vinyl chloride	µg/m ³	ND (0.3U)	ND (0.3U)	ND (0.3U)	ND (0.3U)	ND (0.3U)
ND = Non-Detect						



Ecological Health Evaluation

Potential ecological receptors, if in contact with surface soil and surface water/sediment in Marsh Run include:

- Benthic organisms
- Aquatic biota
- Plants and invertebrates
- Birds
- Mammals



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PADEP Act 2 – Release of Liability

- Act 2 Remedial Investigation Report and Risk Assessment Report have been accepted by PADEP
- PADEP Statewide Health Standards and/or Site-Specific Standards reached
- PADEP and USEPA risk standards met and/or exposure pathways eliminated
- Act 2 Final Report has been submitted to PADEP, and a release of liability will be granted upon report approval
- USEPA acceptance of site cleanup via One Cleanup Program
- Property is safe for recreational use, and no exposure pathways to contaminants
- Future property use will continue as recreational



2012 Explanation of Significant Differences (Final Step of the CERCLA Process)

- Land Use Controls:
 - Groundwater in the (deeper) bedrock aquifer is not currently suitable for use. Therefore, use of groundwater will be restricted (via Environmental Covenants).
 - Onsite excavation is also permanently restricted (via Environmental Covenants).
- Natural Attenuation Monitoring for the deep ground water will continue.
- Other portions of the remedy are complete.
- 5-Year Reviews continue until clean-up objectives are met.

*CERCLA = Comprehensive Environmental Response,
Compensation, and Liability Act of 1980*



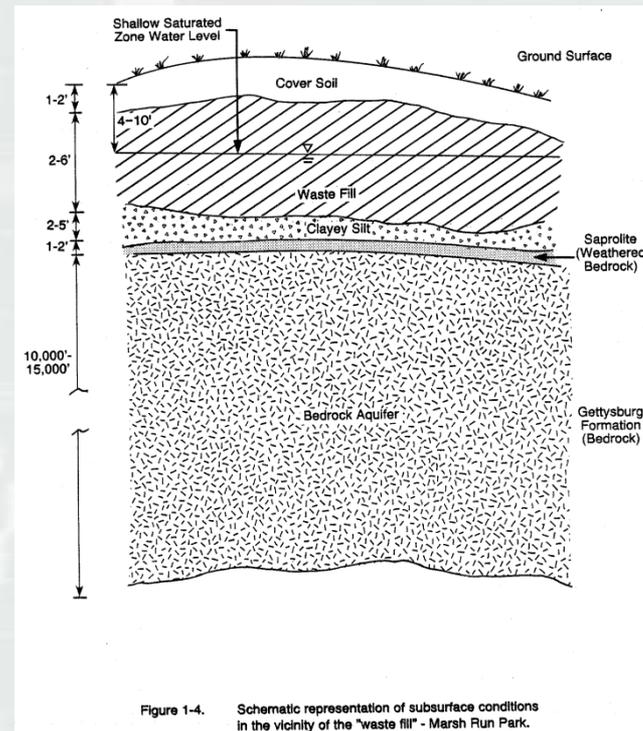
Permanent Commitment to Public and Environmental Safety

- Army Corps of Engineers cleanup efforts 1986 to 2012
- Return of safe and usable land to Fairview Township
- Environmental covenants ensure no exposure to contaminants, and will be monitored, and enforced by PADEP
- Fairview Township will be responsible for periodic reporting to PADEP that site integrity remains and covenants have not been violated
- Army Corps will continue monitoring through the CERCLA 5-Year Review process

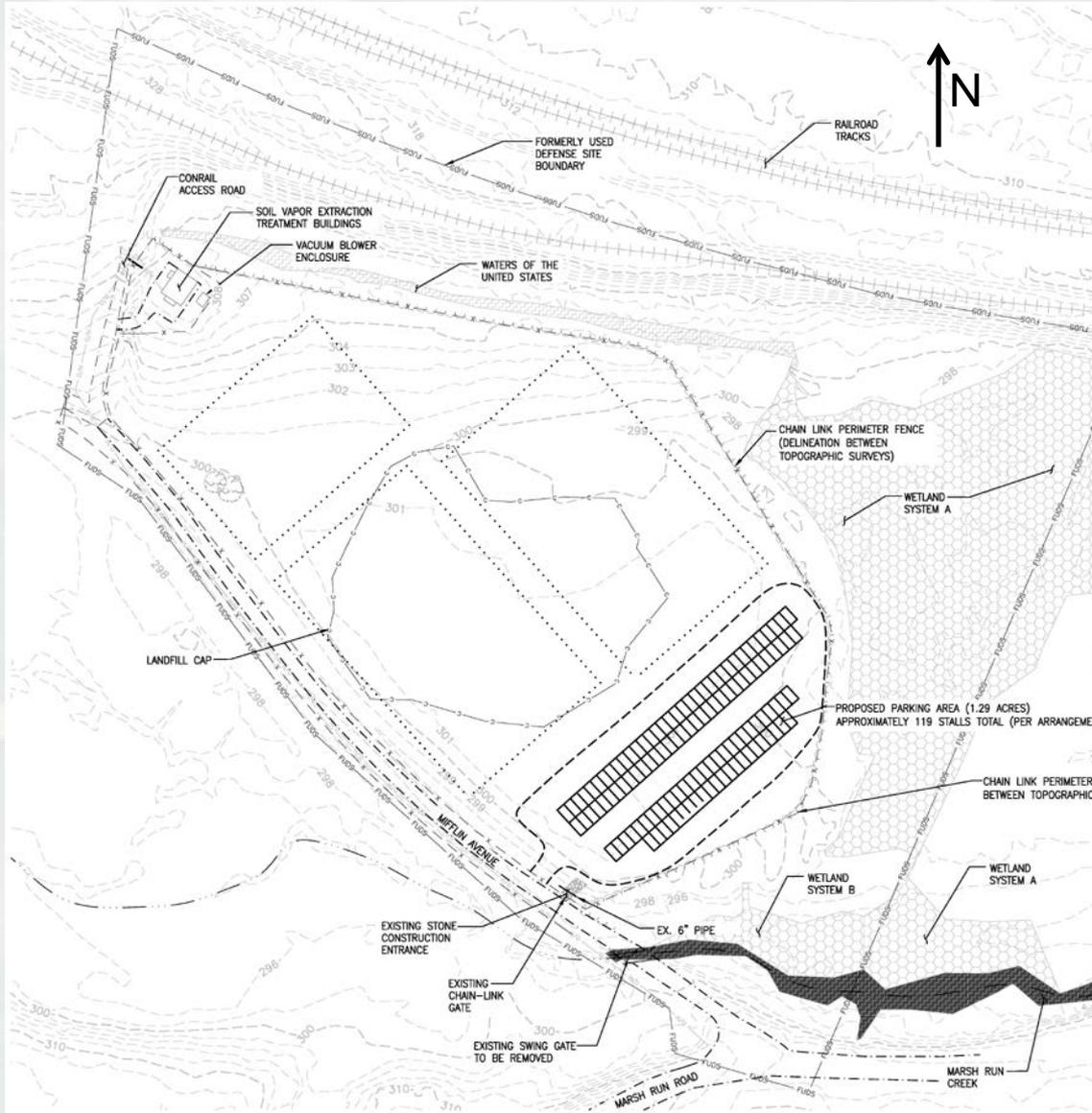


Restoration of Park - Field Construction

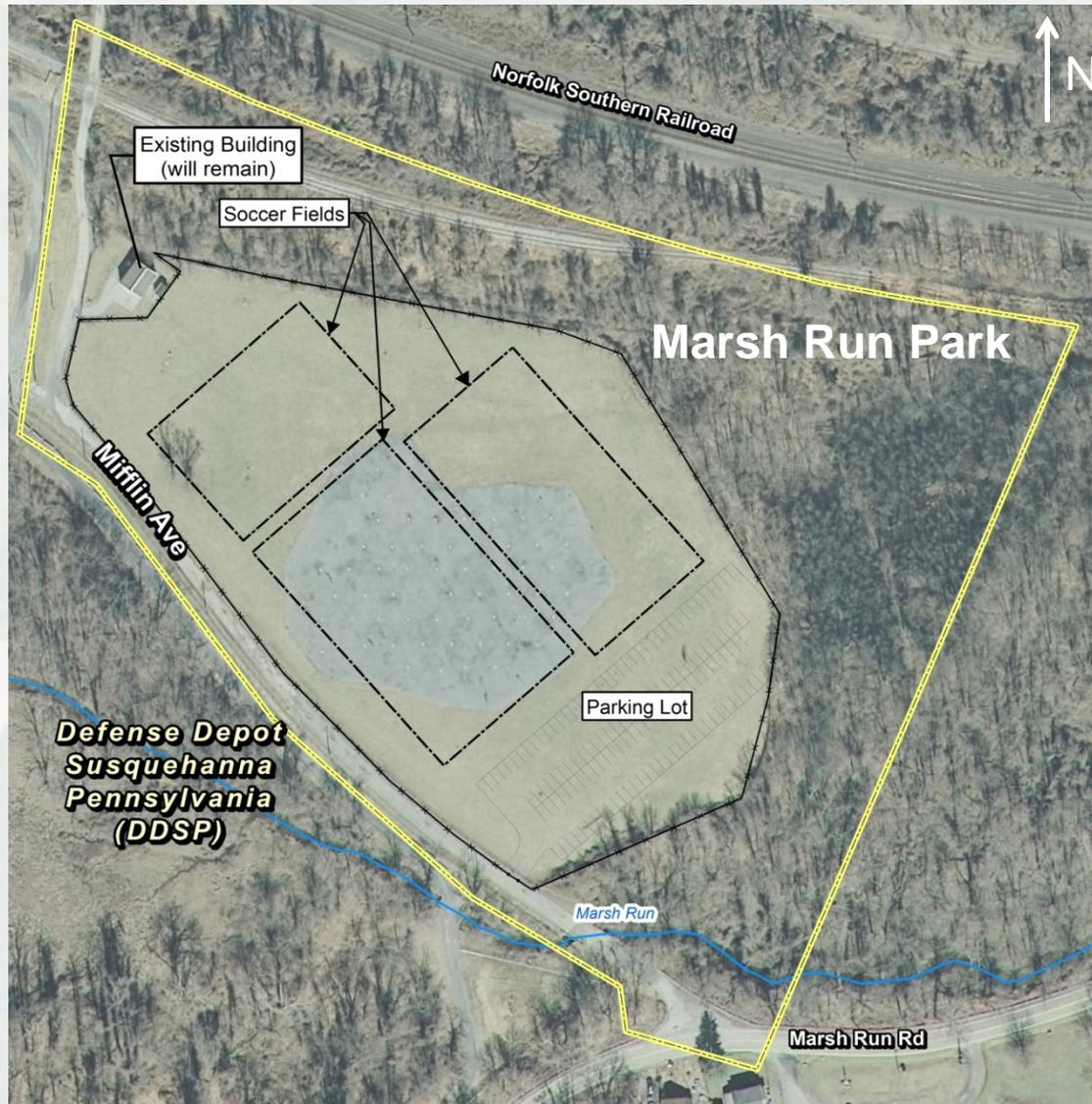
- Removal of remaining on-site wells (May/June 2013)
- Construction of 3 soccer fields
 - To grade fields ~1-2 foot thick layer of “clean fill” added
 - Fill soil must meet Pennsylvania’s Clean Fill Policy
- Bridge replacement over Marsh Run creek
- Seeding of the field areas
- 1-acre parking lot to be built



Soccer Fields and Parking Lot

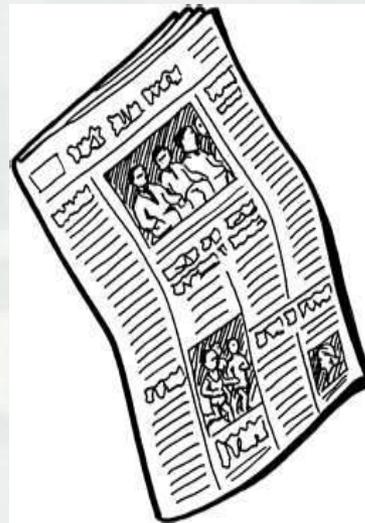


Soccer Fields and Parking Lot



What's left?

- Finalize Explanation of Significant Difference (future approach)
- Army Corps of Engineers will publish a Public Notice on ESD
- PADEP approval of the Act 2 Final Report provides relief of liability for specified contaminants.
- Army Corps of Engineers' lease of the Park will terminate, and full site custody returns to Fairview Township (~2014).



Record Repositories

Final documents can be viewed at:

Fairview Township Municipal Building

599 Lewisberry Road

New Cumberland, PA 17070

Office Hours: Mon-Fri 8 am – 4:30 pm

New Cumberland Public Library

1 Benjamin Plaza

New Cumberland, PA 17070

Office Hours: Mon-Wed 10 am – 8 pm

Thurs 10 am – 6 pm

Saturday 10 am – 5 pm

Friday/Sunday Closed



Comments, Questions, or Concerns can be submitted to:

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Questions?

