

**US Army Corps
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Baltimore District**

Fort Detrick Remedial Investigation/Feasibility Study

**Restoration Advisory Board Meeting
11 April 2002 7:30 PM
Fort Detrick, Frederick, Maryland**



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B11 Agenda

- Introductions
- Safety Shutdown of Operations per SOP
- Findings to Date
 - Soils
 - Vials
- Added Procedures
- Next Steps



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B11 Executive Summary

- Precautions Implemented
- Information from Feb 02 Meeting
- Found Possible Pathogens



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Area B-11 Removal Project Status



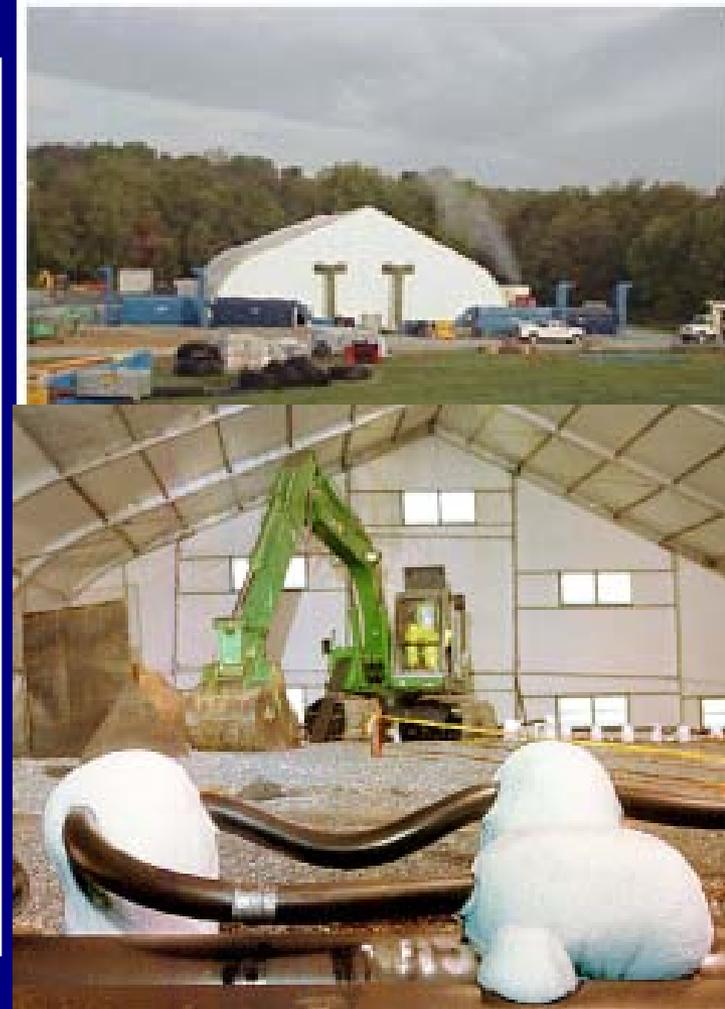


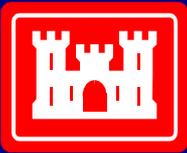
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Area B-11 Feb Information

- **Excavation of overburden material completed and clean soil moved to Area B Active Landfill - 12 Roll offs (174.7 tons)**
- **22 Roll offs (398.5 tons) of hazardous material transported to Texas for incineration and 7 Roll offs (126.8 tons) waiting for transportation**
- **4 Roll offs (53 tons) held after biological materials were found in this section of the pit.**
- **No lost time accidents or injuries (354 Days)**
- **Contaminant concentrations in the air within the containment structure were very low**
- **Air treatment system has operated as designed – no contaminants have been measured at system discharge**





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Process Changes Made due to Potential Biological/Medical Waste

- 1) Soil disinfection with bleach
- 2) Segregation of Biological/Medical Waste
- 3) Soil milling operation was upgraded to assure crushing of small vials
- 4) Upgraded air and soil sampling procedures to monitor for biological materials and check disinfection process
- 5) Must have Negative Results on PRC Before Removing Roll Offs from the Containment Structure
- 6) Installed high efficiency particulate air (HEPA) filtration on containment structure ventilation system to assure containment of biological material
- 7) Reprocessed 4 Quarantined Roll Offs
- 8) All systems and processes have been tested and performance demonstrated



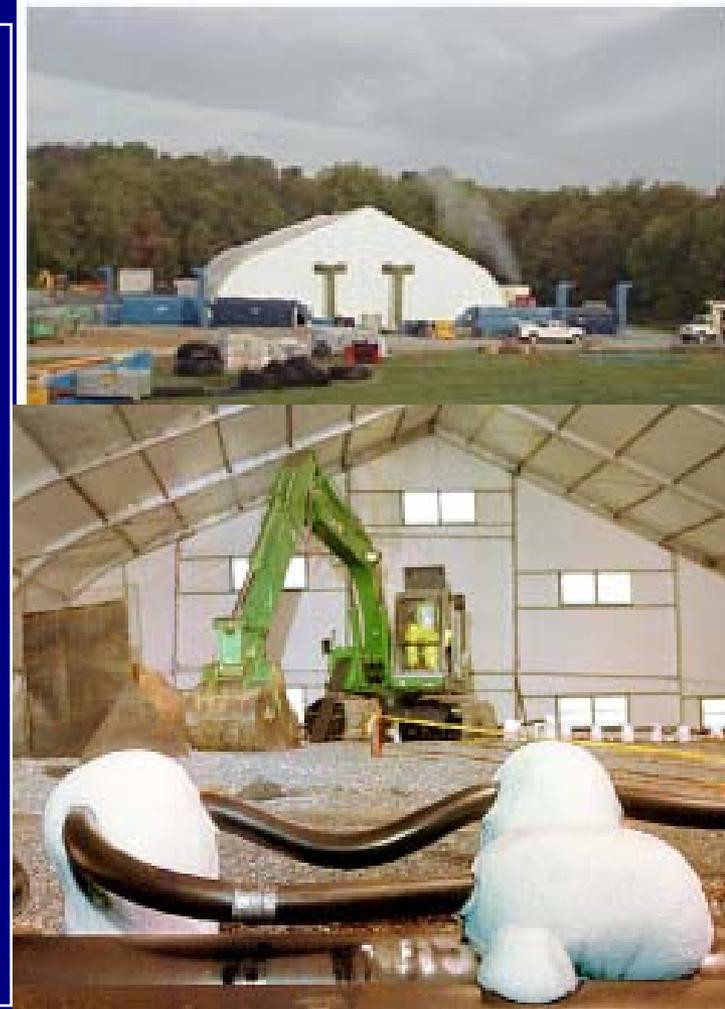


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Area B-11 April Information

- **32 Roll offs (approx 578 tons) of hazardous material transported to Texas for incineration (Includes 3 previously quarantined roll offs that were reprocessed
 - 2 of these reprocessed roll offs are suspected to contain pathogenic organisms).**
- **All 4 previously quarantined roll offs have been reprocessed and found a total of 6 additional vials**
- **Currently 5 Filled Roll Offs On-Site**
- **No lost time accidents or injuries (414 days)**
- **Very low concentrations of volatile organic chemicals in air within tent have been measured (none outside structure)**
- **Excavation operations resumed on 3 Apr 02 after systems upgrades**
- **New Excavations Produced 3 Additional Roll Offs During This We Found 11 Additional Vials and 1 Test Tube**





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Area B-11 Removal Project Status Evaluation of Biological Waste/Sampling Results

- **4 Vials From Feb 02 (Prior to Restart) - Do NOT Contain any Pathogenic Organisms (Common Bacteria that can be found in Soils) Based on the Department of Transportation (DOT) List of “Etiologic Agents Requiring Specific Packaging”.**
- **Soils From the Previously Quarantined Roll Offs:**
 - **Originally Tested Pathogen Free**
 - **Soils Were Reprocessed Using New Procedures**
 - **New Samples Showed Significantly Reduced Colony Forming Units (CFU) per gram of Soil**
 - **Roll Offs Were Considered Free of Pathogens and Were Sent to Our Disposal Facility in Texas.**
 - **Follow-Up Testing of Specific Colonies Indicates an Intact Vial was Broken During Reprocessing.**





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Area B-11 Removal Project Status

Evaluation of Biological Waste/Sampling Results

- A Broken Vial is Suspected to Have Contaminated Soils in a Roll Off with *Listeria* but With Additional Testing May Now Be *Carnobacterium*, Final Results are Pending.
- A Second Vial is Suspected to Have Contaminated Soils from a Second Roll Off with *Neisseria Meningitidis*, Confirmatory Analysis is in Progress.
- Sampling of the Third Roll Off in Texas Indicates No Pathogenic Organisms
- The Fourth Reprocessed Roll Off Indicates No Pathogenic Organisms
- Three New Roll Offs - Awaiting Sample Results.
- Awaiting Confirmatory Results for Samples Taken Inside and Outside of the Containment Structure (1-2 Wks).



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Area B-11 Removal

Vial Sampling

- **Vial Materials Sampling:**
 - Opened at Edgewood Chemical & Biological Center under strict conditions
 - All vials appear to contain different types of bacteria
 - Identification of organisms is very difficult - commercial & government libraries are limited for nonpathogenic bacteria (only 43% of named species are in the library)



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Area B-11 Removal Project Status

Evaluation of Biological Waste/Sampling Results

- 17 Vials, 1 Test Tube, and 6 Air Samples Results
 - 5 Vials - No Growth
 - 6 Vials - Normal Non-Pathogenic Bacteria
 - 2 Vials - Are Identified As *Klebsiella pneumoniae* (Pathogen)
 - 1 Vial - *Yersinia Pseudo Tuberculosis* (Pathogen)
 - 3 Vial - Growth, Being Identified
 - 1 - Test Tube - Normal Non-Pathogenic Bacteria
 - 6 - Air Samples Showing No Growth



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Area B-11 Removal

Sample Analysis Process

- **Vial Materials Sampling Process:**
 - First materials were analyzed using a culturing screen for 1-3 days;
 - Second the materials are inspected with a microscope and a gram stain analysis. **This process identifies the worst case scenario of Biological Warfare Organisms.**
 - If we cannot identify the materials we will then analyze it using a fatty acid methyl ester (FAME) system by MIDI and takes about 3 days;
 - Next these results are then compared to the database and identification methodology using the BIOLOG System.



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Area A Update

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Pending Schedule:

Area A Long-Term Monitoring (LTM) Plan

Area A LTM Sampling (1st round)

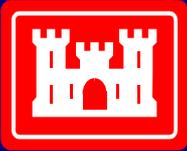
LTM (Five Year Review)

Completion Date

April 02

May 02

July 06



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Area B Update

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DOCUMENTS COMPLETED

Engineering Evaluation/Cost Analysis (EECA) Area B-11 Chemical Waste Disposal Pits (Feb 00)	
EECA (Proposed Plan)	(May 00)
EECA (Decision Document)	(July 00)
Public Involvement and Response Plan	(July 00)
Chemical Oxidation Bench-Scale Test Work Plan	(Oct 00)
Photographic Analysis (USEPA EPIC Study)	(Mar 01)
Chemical Oxidation Bench-Scale Test Report (Final)	(July 01)

PENDING

Groundwater Pilot Test Field Technology Assessment Work Plan

Area B Additional Investigation Work Plan

Dye Trace Study Work Plan (Final)

RI

FS

PP

DD

RD

RA

Area B-1 Site Close-Out Document

Area B-18 Site Close-Out Document

* Additional sites are being evaluated for Close-Out Documents.

Area B sites may be presented as separate documents. The partnering group is assessing the content for these documents using EPIC Study and existing information.

Completion Date

Pending Funding

Sept. 02

Pending Funding

Schedule being developed

Sept. 02

Sept. 02



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Area B Update

Completed and Planned Field Activities

COMPLETED TASKS SINCE LAST MEETING

- Quarterly Sampling of wells in and surrounding Area B

PLANNED

- Additional periodic residential and on-post well and surface water sampling - Every 3 months.
- Dye trace study - Schedule being developed (funding dependent).
- Water Treatment System (Krantz) - On-hold pending funding.



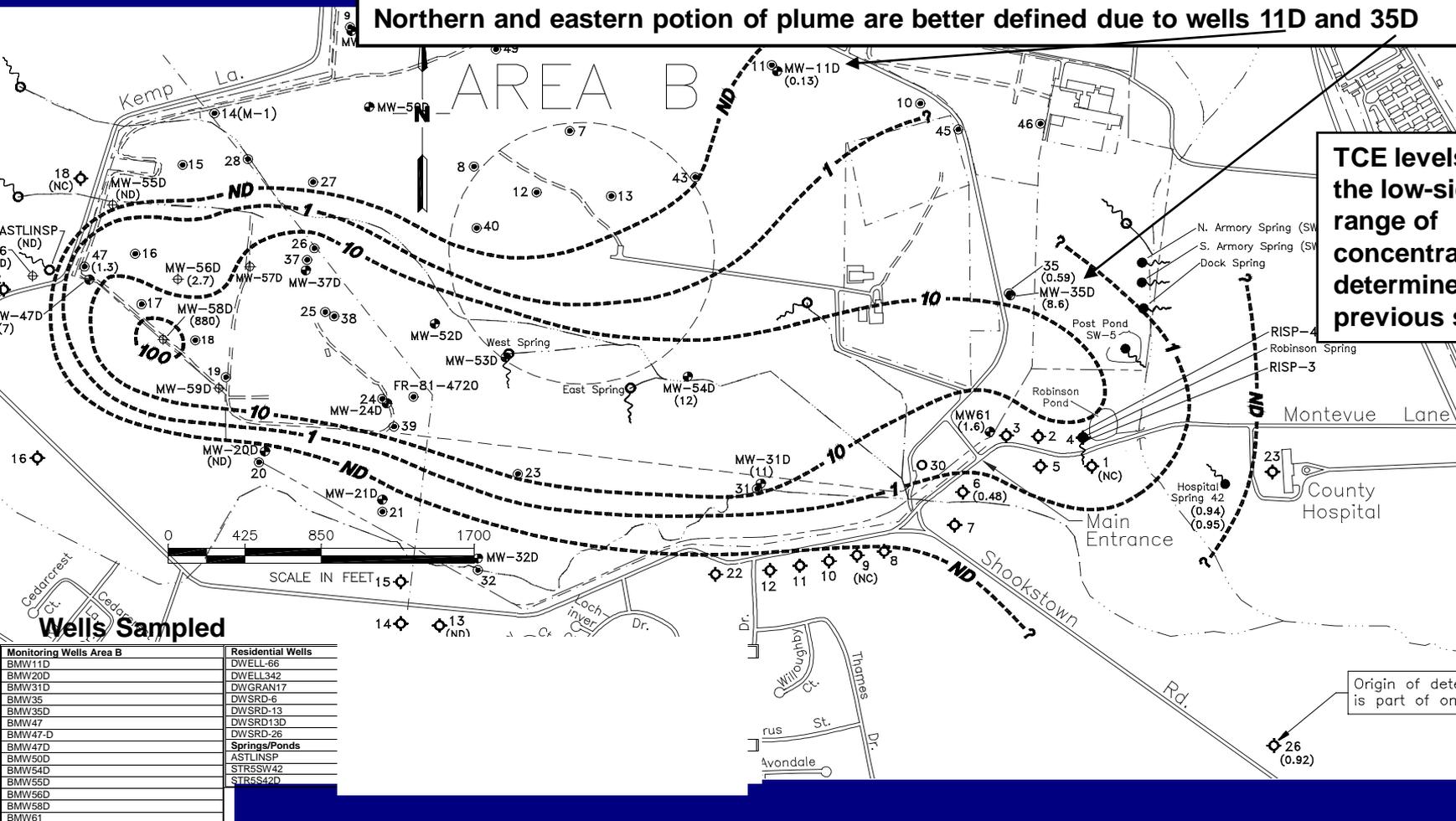
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Fort Detrick RI/FS Quarterly Sampling results TCE Plume (Feb 2002)

Several plume boundary wells were added to the program to help delineate plume.
Northern and eastern portion of plume are better defined due to wells 11D and 35D

TCE levels are on the low-side of the range of concentrations determined in previous sampling

Origin of detection at Well 26 is part of ongoing studies

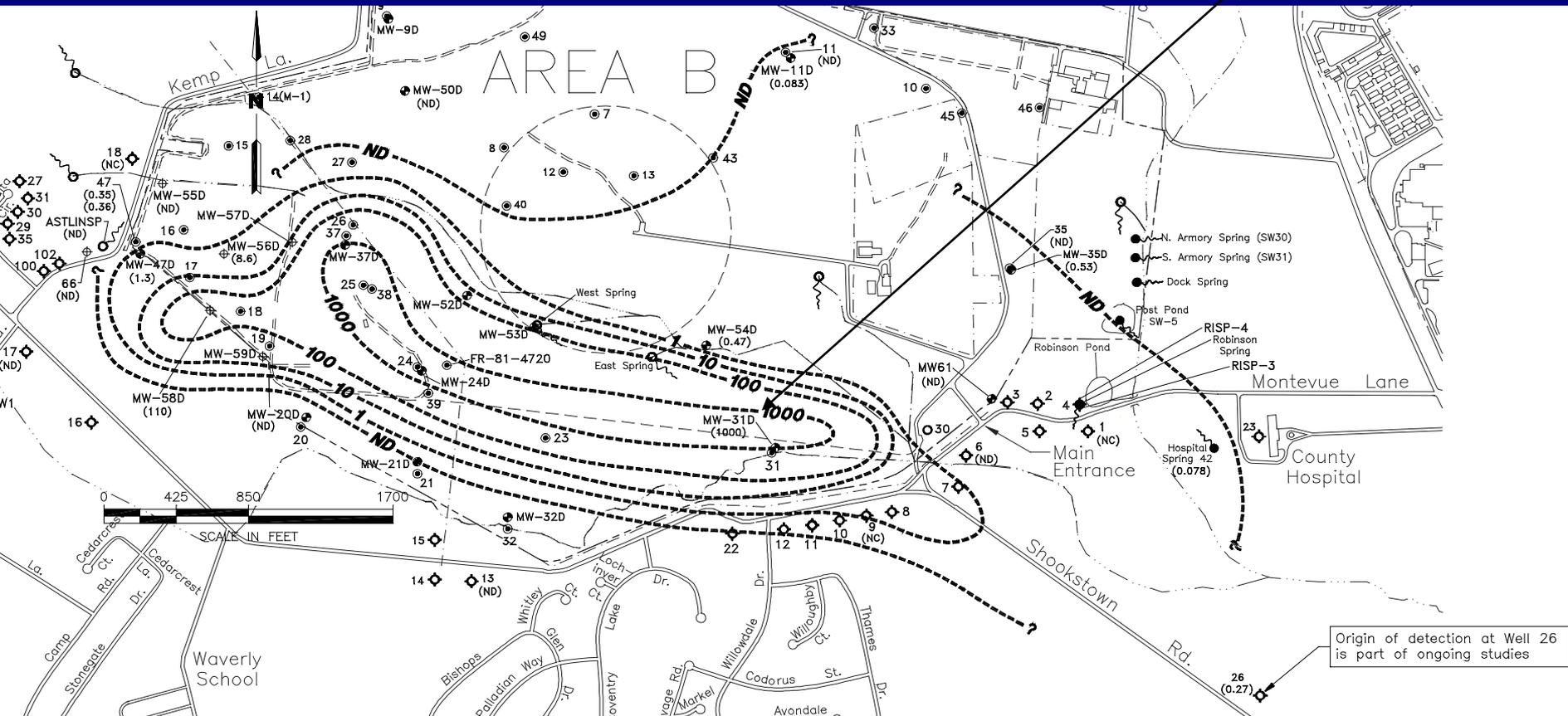




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Fort Detrick RI/FS Quarterly Sampling results PCE Plume (Feb. 2002)

Concentrations of PCE generally decreasing except area of highest concentrations appeared to be shifting to the east as seen in elevated detection at well 31D.





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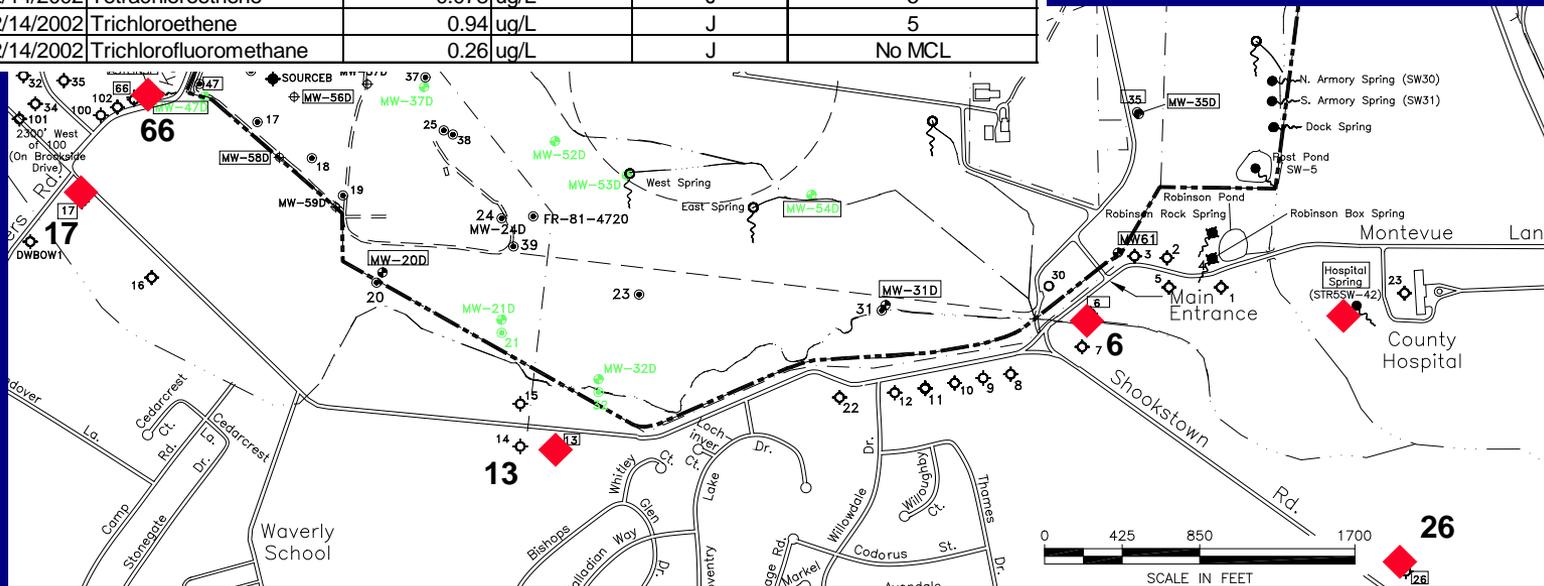
RESIDENTIAL BOUNDARY WELLS AND SURFACE WATER Sampling Locations Data (Target Compounds) February 2002

Site ID	Sample Date	Analyte Description	Concentration	Unit Measure	Lab Qualifiers	EPA MCL
66	02/14/2002	1,1,1-Trichloroethane	0.27	ug/L	J	200
6	02/14/2002	1,1,1-Trichloroethane	0.11	ug/L	J	200
6	02/14/2002	Toluene	0.27	ug/L	J	1000
6	02/14/2002	Trichloroethene	0.48	ug/L	J	5
6	02/14/2002	cis-1,2-Dichloroethene	0.17	ug/L	J	70
26	02/15/2002	1,1,1-Trichloroethane	0.38	ug/L	J	200
26	02/15/2002	Benzene	0.13	ug/L	J	5
26	02/15/2002	Tetrachloroethene	0.27	ug/L	J	5
26	02/15/2002	Trichloroethene	0.92	ug/L	J	5
26	02/15/2002	Trichlorofluoromethane	0.27	ug/L	J	No MCL
26	02/15/2002	cis-1,2-Dichloroethene	0.2	ug/L	J	70
Hosp. Sprg.	02/14/2002	Chloroform	1.3	ug/L		80 (total trihalomethanes)
Hosp. Sprg.	02/14/2002	Trichloroethene	0.95	ug/L	J	5
Hosp. Sprg.	02/14/2002	Trichlorofluoromethane	0.24	ug/L	J	No MCL
Hosp. Sprg.	02/14/2002	Chloroform	1.3	ug/L		80 (total trihalomethanes)
Hosp. Sprg.	02/14/2002	Tetrachloroethene	0.078	ug/L	J	5
Hosp. Sprg.	02/14/2002	Trichloroethene	0.94	ug/L	J	5
Hosp. Sprg.	02/14/2002	Trichlorofluoromethane	0.26	ug/L	J	No MCL

Low-levels of volatile compounds have been found at all sampled locations with the exception of location 17 and 13. These contaminants have generally been found in Area B as well; however, there may be more than one source for some of the contaminants besides Area B.

All concentrations are well below USEPA drinking water standards (MCLs).

Wells 13, 17, 66 are the only wells sampled that are used for residential purposes.

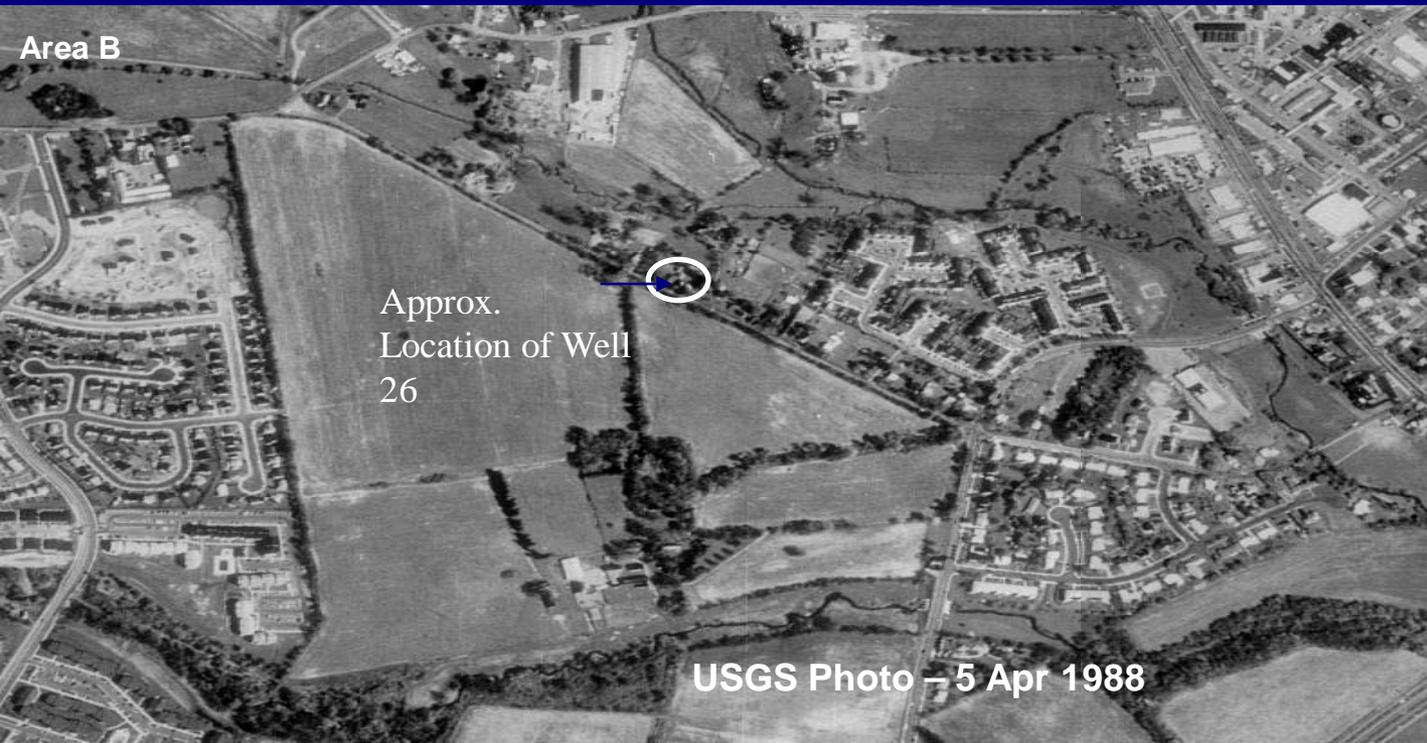


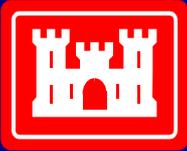


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Residential Well Reassessment and Information Dissemination

- Due to detections at residential well location 26, located on Shookstown Road – Fort Detrick is preparing to survey residents in the area to re-examine the location of used and unused residential wells in the area.
- This survey will be used to potentially develop an additional list of locations that could be sampled to help refine our knowledge of how the contaminant plume may be moving off-site.
- The information may also be used to see if there may be any risks to residents due to current use of the water.
- Fort Detrick is not aware of any resident currently using water in this area.





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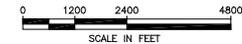
Additional Well Sampled at Owner's Request

7895 Westhills Drive was sampled at Owner's request. There were no detections of volatile organic chemicals.



LEGEND

DWELL342  Residential Well Sample Location





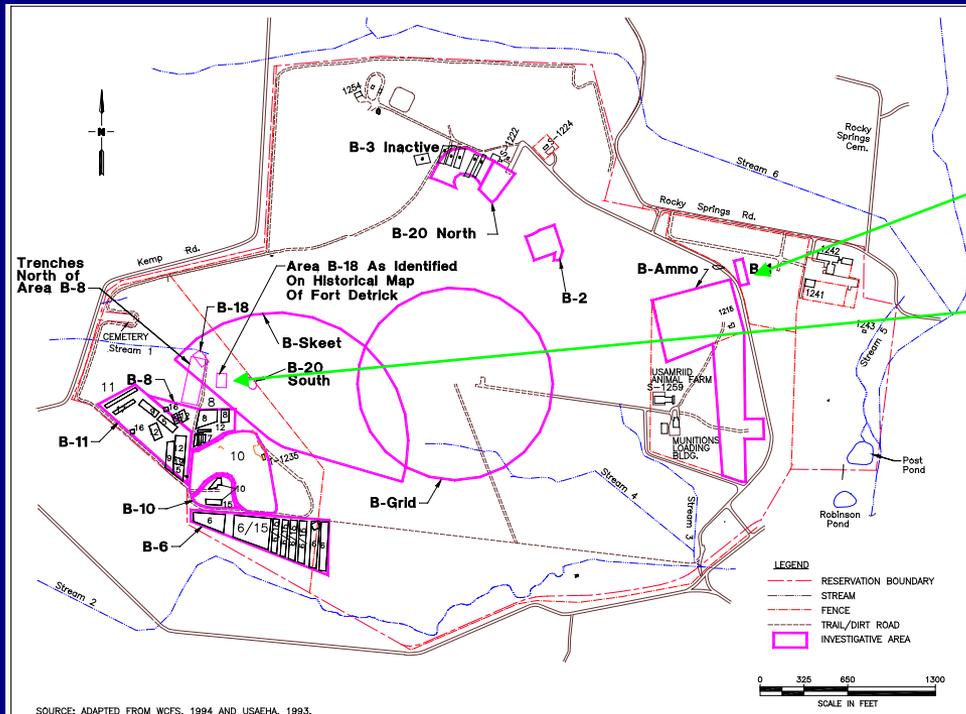
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Area B Partnering Team Site Evaluations



The Fort Detrick Partnering team has performed initial evaluations of all investigation sites in Area B using the EPA Aerial Photograph Study information. The following major consensus items were produced:

- 1) Area B-1, as originally defined (RI Work Plan/Engineering Drawing), may not have been accurately located. However, within the area originally defined as "B-1", no further investigation is required.
- 2) The sites identified in the 1998 Remedial Investigation as Area B-18 are determined not to be disposal areas and are no longer areas of concern. Data collected for Area B-18 will be evaluated to be included as background.



B-1 location

B-18 Location

Both of these sites are to be included in a Site Close-Out Document (pre-remedial investigation document).



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Area C Update

- Ash in Ash Disposal Area has been removed and disposed of as non-hazardous waste in the Area B landfill.
- EPA has not identified any at-risk ecological habitats based on the data (may allow close out of the ecological risk assessment).
- Currently finalizing assessment of groundwater data.
- Final Report to be scheduled based on funding.

