



Fort Detrick Remedial Investigation/Feasibility Study

Status Update

Fort Detrick Restoration Advisory Board Meeting
February 18, 2010
Fort Detrick, Maryland



Status Update Discussion

- Area B Groundwater Monitoring
- Area B Former Disposal Sites
 - Current Status and Schedule Update
- Area B Groundwater Remedial Investigation Work Plan



Area B Groundwater Quarterly Monitoring



Area B Groundwater Quarterly Monitoring

- Recent sampling events include:
 - *June 2009 – Sampling limited to private in-use wells neighboring Area B and on post plume periphery*
 - *Aug/Sept 2009 – Sampling limited to 5 private in-use wells neighboring Area B, 3 off-post springs, and 5 newly-installed Area B monitoring wells*
 - *December 2009 – Sampling limited to private in-use wells neighboring Area B and on post plume periphery*

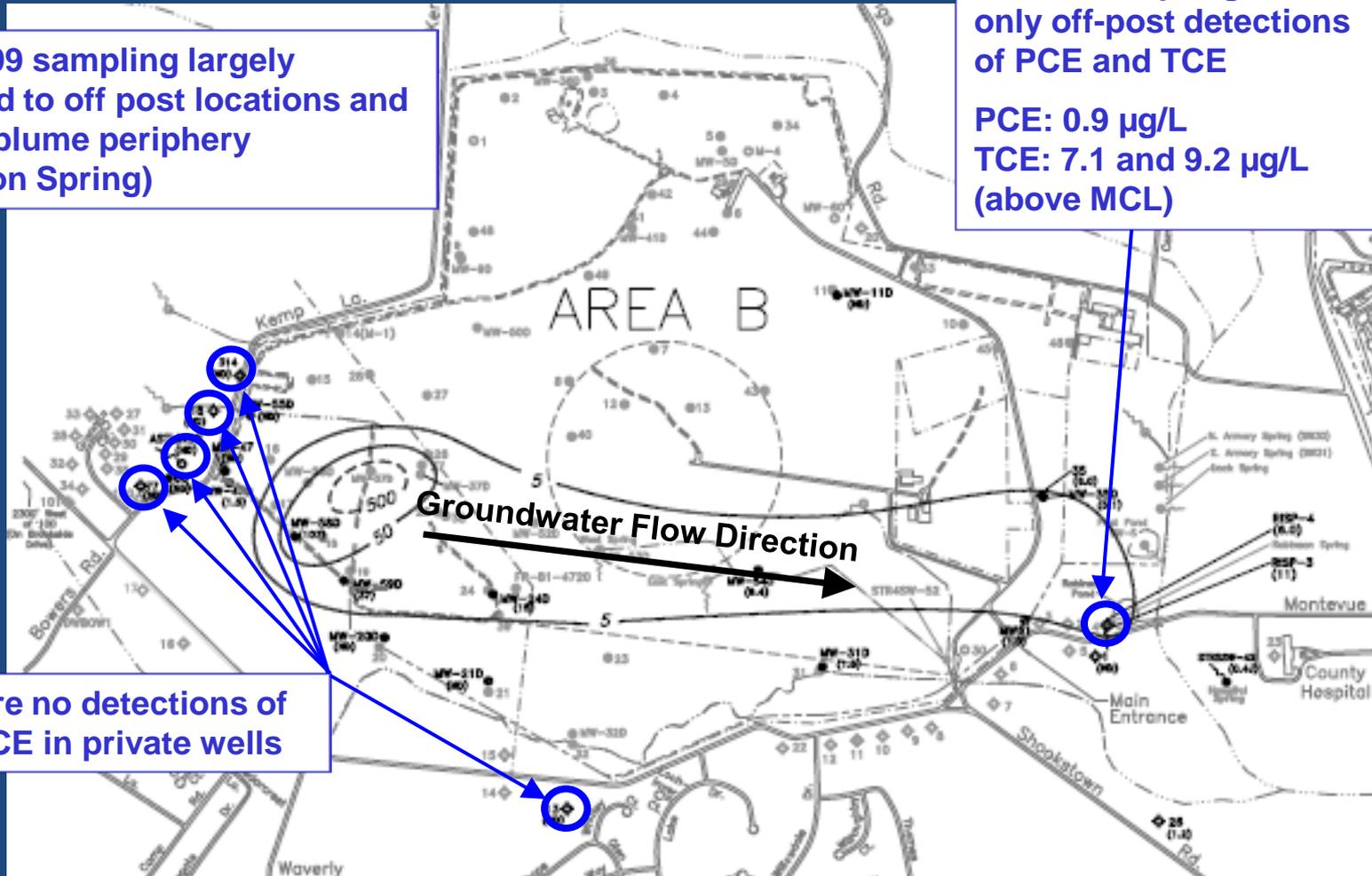


June 2009 Sampling

June 2009 sampling largely restricted to off post locations and on post plume periphery (Robinson Spring)

Robinson Spring had only off-post detections of PCE and TCE

PCE: 0.9 $\mu\text{g/L}$
TCE: 7.1 and 9.2 $\mu\text{g/L}$
(above MCL)



There were no detections of TCE or PCE in private wells



June 2009 Sample Results

- VOCs detected in samples collected during the June 2009 sampling event include; chloroform, 1,1-dichloroethene, cis-1,2-dichloroethene, PCE and TCE. The reported concentrations for all chemicals are below current Federal MCLs with the exception of TCE in RISP-3 (7.1 $\mu\text{g}/\text{L}$) and RISP-4 (9.2 $\mu\text{g}/\text{L}$).



Aug/Sept 2009 Sampling

Aug/Sept 2009 sampling included off post locations, new Area B wells, and off-post Springs.

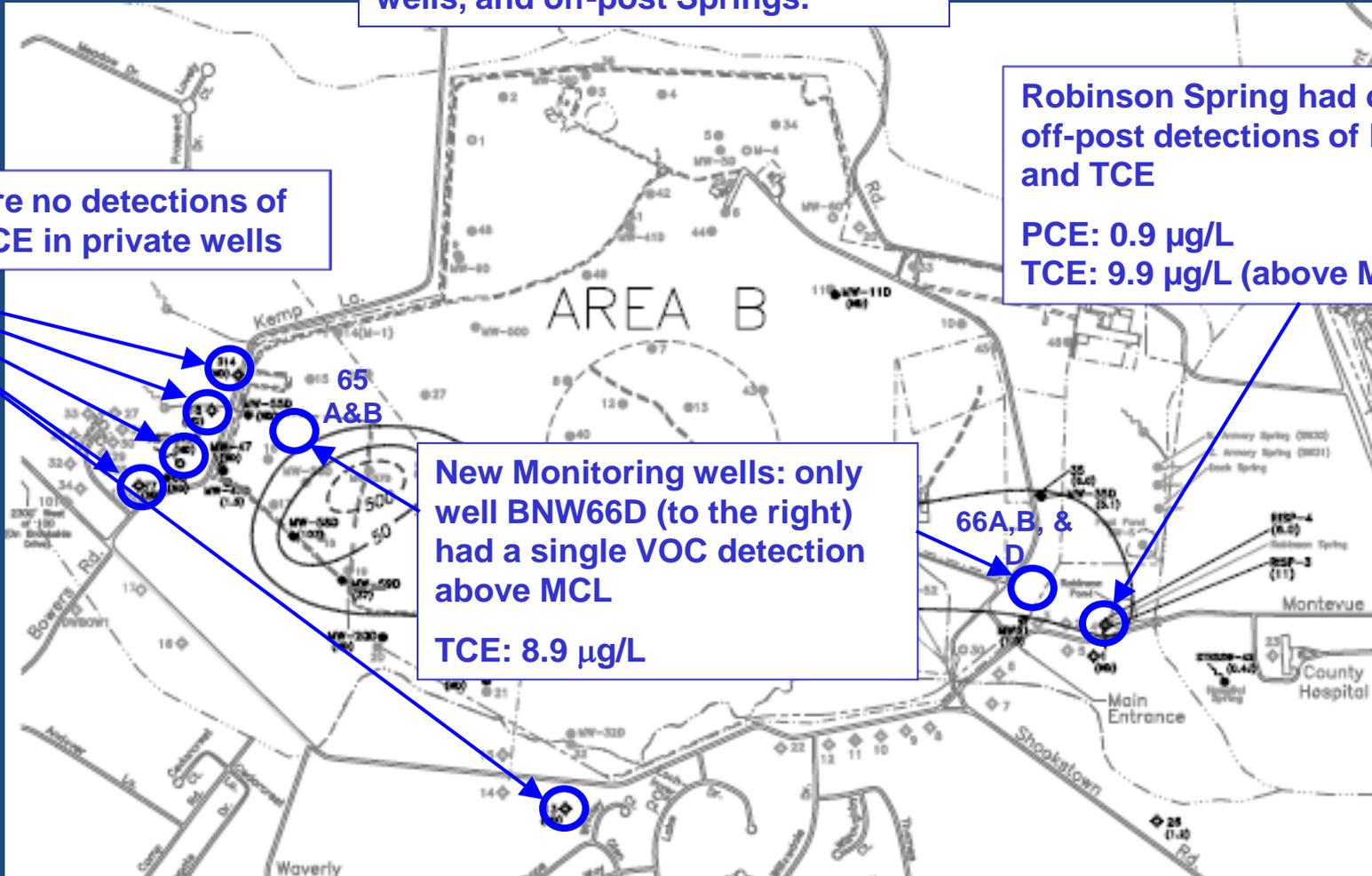
There were no detections of PCE or TCE in private wells

Robinson Spring had only off-post detections of PCE and TCE

PCE: 0.9 $\mu\text{g/L}$
TCE: 9.9 $\mu\text{g/L}$ (above MCL)

New Monitoring wells: only well BNW66D (to the right) had a single VOC detection above MCL

TCE: 8.9 $\mu\text{g/L}$





Aug/Sept 2009 Sample Results

New Monitoring Well Sample Results:

- VOCs detected at levels below MCL in the new monitoring well samples include; acetone, chloroform, cis-1,2-Dichloroethene, and trichlorofluoromethane.
- One VOC (TCE) was found above its MCL in sample BMW66D (8.9 $\mu\text{g/L}$).
- One SVOC [benzo(a)pyrene at 1.1 $\mu\text{g/L}$ in BMW66D] exceeded its MCL, but was shown to have blank contamination.

Off-Post Sample Results:

- VOCs detected below MCL include; chloroform, chloromethane, 1,1-Dichloroethene, cis-1,2-Dichloroethene, methylene chloride, PCE and TCE.
- TCE was detected above its MCL in sample RISP-3 (9.9 $\mu\text{g/L}$) and RISP-4 (7.1 $\mu\text{g/L}$).



Dec 2009 Sample Results

- VOCs detected below MCL include; acetone, chloroform, 1,1-dichloroethene, cis-1,2-dichloroethene, and PCE. The reported concentrations for all chemicals are below current Federal MCLs with the exception of TCE in RISP-3 (10.4 $\mu\text{g}/\text{L}$) and RISP-4 (6.7 $\mu\text{g}/\text{L}$).



Area B Former Disposal Sites



Area B Former Disposal Sites





Remedial Strategy for Area B Former Disposal Sites

- Utilize EPA Presumptive Remedy for Landfills B-2, B-3 Inactive, B-6, B-8, Trenches North of B-8, B-10, B-11, and B-18
- Comply with current Code of Maryland Regulation 26.04.07.21 for Sanitary Landfill Closure as a relevant and appropriate requirement, which requires an impermeable cap to minimize infiltration of precipitation



Current Capping Status

- All common fill on site and in place
- Geomembrane installation 100% complete
- Multiple select fill and top soil sources currently being used to accelerate schedule
- Extreme weather (rain, wind, snow) has seriously impacted capping schedule
- Activities for last two weeks have been halted due to weather conditions



Current Capping Status

- B-2: 12” select fill in place. Topsoil stockpiled in preparation for placement.
- B-3 WEST: Completed geomembrane installation. 20% of drainage composite installed. (This is the last area requiring composite installation).
- B-3 EAST: Just started receiving select fill (<5%) and 0% topsoil before recent snowstorms.
- B-6: 0% for both select fill and topsoil delivery.
- WDA (B-8, B-10, B-11): Select fill is 90% in place. 100% of topsoil received; 75% of topsoil in place.
- B-18: Select fill placed and spread. Needs 12” lift of top soil.



Field Work Photos





Field Work Photos (cont.)





Field Work Photos (cont.)





Area B Former Disposal Sites Schedule

- Site currently closed due to severe weather/snow
- Work will hopefully restart Feb. 22
- Need approximately 4 weeks to bring in and grade final fill material
- Hydroseeding will take place when each cap is final-graded. May take until April to establish stabilized vegetation.
- Fill placement and hydroseeding of all caps should be complete by the end of March.
- Final task is removing erosion controls such as sediment traps and dikes, and hydroseeding those areas.



Area B Groundwater Remedial Investigation Work Plan



Area B

Groundwater RI WP

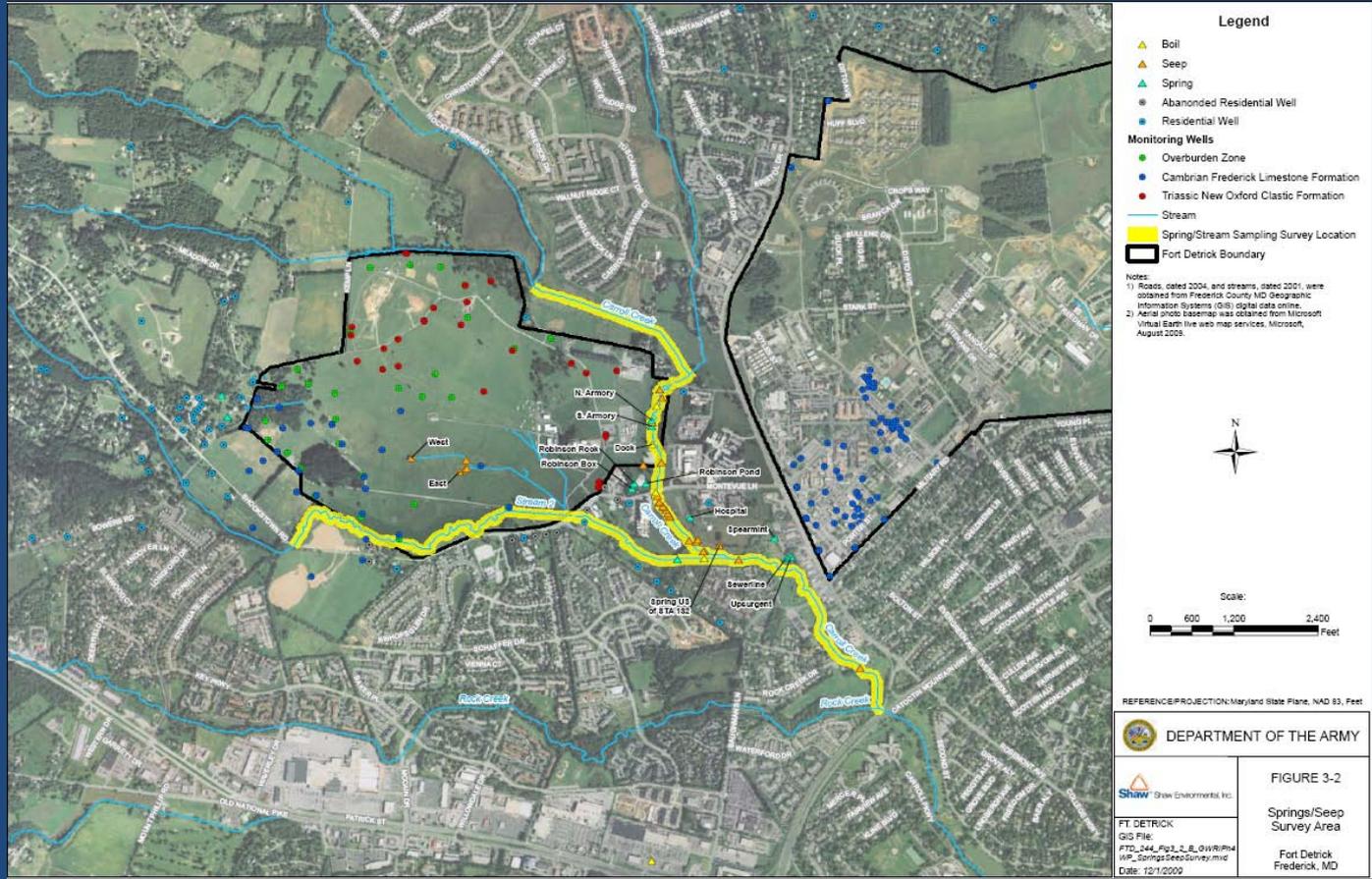
- Generalized WP since Shaw may not be performing the described work.
- WP is to fill data needs in order to finalize Area B Groundwater RI
- Data needs:
 - Confirm deep and shallow groundwater flow directions
 - Determine depth of contamination and groundwater flow
 - Establish appropriate monitoring network
 - Obtain appropriate analytical data set for characterization and risk assessments
 - Assess potential Vapor Intrusion



Area B GW RI WP Technical Approach

Proposed RI Activities (in necessary order):

- Existing well survey and repair
- Horizontal flow meter survey
- Spring/seep reconnaissance and sampling
- Focused dye trace
- DPT sampling and piezometer installation
- New well drilling, testing, and installation
- Drilling and well installation process
- Borehole logging and testing on new and existing wells
- Synoptic Monitoring of water levels
- Groundwater sampling (synoptic)
- Surface water and sediment sampling
- Vapor intrusion sampling



Spring/Seep Sampling and Surface Water Survey

Reconnaissance survey conducted to identify points of GW discharge & representative locations for SW monitoring



Focused Dye Trace Study Sample Locations

* Sample locations are dependent upon obtaining a signed right of entry.

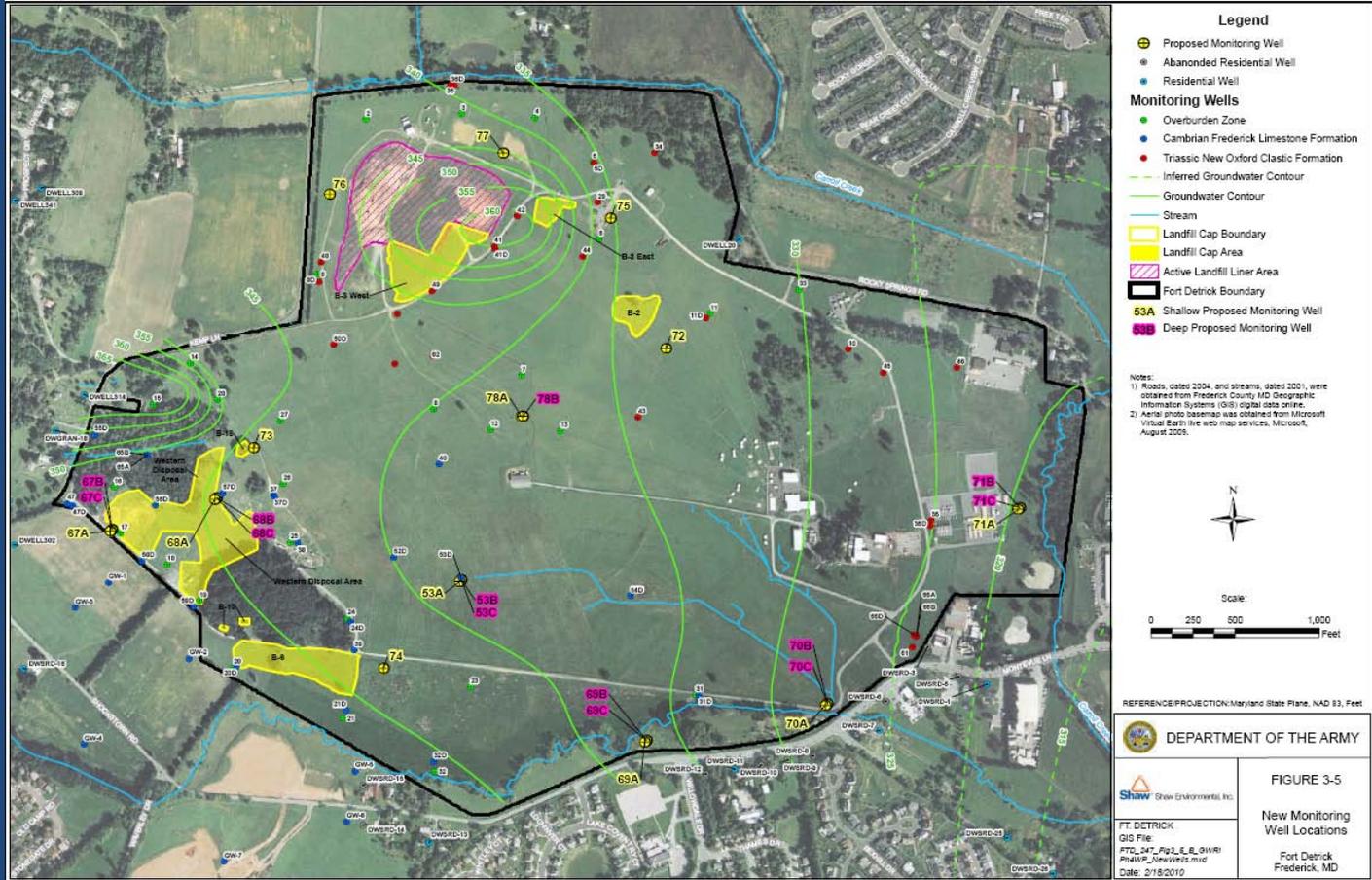


Shallow Groundwater DPT Sampling and Piezometer Installation

A total of 59 shallow GW samples proposed :

- along the southern Area B boundary
- At select interior locations adjacent to occupiable buildings
- Within the Carroll Creek floodplain between Areas A and B.

*Sample locations are dependent upon obtaining a signed right of entry.



Potential New Monitoring Well Locations

