



**TETRA TECH**

PHIL-22791

March 9, 2009

Project Number 02014

Reference: Contract No. N62470-08-D-1001 (CLEAN)  
Contract Task Order (CTO) No. WE05

Subject: Distribution of RAB Meeting Minutes, January 21, 2009  
NAS JRB Willow Grove, Pennsylvania

Dear Restoration Advisory board (RAB) Member:

At the request of Curt Frye of the Navy's Base Realignment and Closure (BRAC), Program Management Office (PMO), Northeast, copies of the RAB meeting minutes for the RAB meeting held on January 21, 2009 are enclosed. Questions should be addressed to Gloria Abarca, the RAB Coordinator for the Naval Air Station Joint Reserve Base, Willow Grove, at (215) 773-2106.

Sincerely,

Russell E. Turner  
Project Manager

RET/mp

Enclosure: RAB Meeting Minutes  
Presentation Handouts  
Distribution List

c: Garth Glenn (Tetra Tech)  
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**NAS JRB WILLOW GROVE  
DISTRIBUTION LIST  
RESTORATION ADVISORY BOARD MEETING  
JANUARY 21, 2009**

Abarca, Gloria  
Barclift, David  
Beach, Bruce  
Capito, Bonnie  
Carmeans, Donald  
Choate, Peter and Margaret  
Clark, Charles  
Cunningham, Lisa  
Downs, William L.  
Dunleavey, Jack  
Dusen, Hal  
Fredericks, Timothy  
Frye, Curt  
Gemmil, Mary (Liz)  
Glemser, Tina Marie  
Haggerty, Arnold  
Heil, William  
Hibbs, Thomas  
Horne, Gary  
Humphreys, Eric  
Kasmari, Jessica  
Kern, Abe  
Leopold, Ray  
Lewandowski, Bob  
Lindhult, Eric  
Martin, John C.  
Maxwell-Martin, Kaye  
McCaffrey, Dan  
McGee, Michael  
Merl, Tina  
Montgomery, Suzanne  
Myers, Rick  
Newell, Mark  
Opatz, David  
Peffall, Richard L.  
Pollock, Earle  
Roth, T.H.  
Shaw, Scott  
Sloto, Ron  
Vetrini, James, J.  
Vine, Eleanor  
William, Robert P.



**NAS JRB WILLOW GROVE  
RAB MEETING No. 37 MINUTES**

Meeting Date: January 21, 2009  
 Meeting Time: 6:00 p.m.  
 Meeting Place: Horsham Township Public Library

<u>Name</u>	<u>Organization</u>
Attendance: Mary (Liz) Gemmill (R)	Community Co Chair
Al Deckert	Marine Corps League
John Raup	Marine Corps League
Eric Lindhultd (R)	RAB Member
Jim Vetrini (R)	RAB Member
Ted Roth (R)	RAB Member
Kay Maxwell Martin (R)	RAB Member
Marc Newell	Horsham Environmental Advisory Board
Eric Humphreys (R)	NAS JRB Willow Grove Executive Officer, RAB Co Chair
Nathan Paukovits (R)	NAS JRB Willow Grove
Bob Lewandowski (R)	Navy, BRAC PMO
Curt Frye (R)	Navy, NAVFAC
Gloria Abarca (R)	Navy, Willow Grove
Hal Dusen (R)	Navy, Willow Grove
Richard Frattarelli (R)	Air National Guard
Charles Clark (R)	PADEP
Jessica Kasmari (R)	PADEP
Russ Turner	Tetra Tech NUS, Inc
Don Whalen	Tetra Tech NUS, Inc
(R) Designates RAB Member	

Bob Lewandowski welcomed everyone and thanked them for braving the cold weather to come to the 37th Restoration Advisory Board (RAB) meeting. Since our last RAB meeting, the bus tour in September, there has been additional legislation regarding the Air Station you may or may not have heard about. Previously, several RAB meetings ago, we talked about the legislation that established the Joint Interagency Installation (JII). That legislation obligated the Navy to transfer the Navy property to the Air Force. On September 30 last year, in the Consolidated Appropriations Act for fiscal year (FY) 2009, there was additional legislation added. The recent legislation basically says that the Air Force then will transfer the property to the Commonwealth of Pennsylvania at no cost. This is different than what we expected, and the Navy wants to make sure RAB members are aware of it. Six months ago we thought the property was going to stay in federal hands, but now, the property will be transferred to the state, along with the Air Force property.

The first item on the agenda to discuss is land area environmentally ready for property transfer. To be able to present interested parties with the status of cleanup and progress toward getting the property conditioned for transfer, the Navy prepared a series of figures using a visual presentation of our plan of progress for cleaning up the Base. In the handouts, green means ready to transfer, these are the clean areas. Red means the areas we still need to look at. As you go through the slides of projected area ready for transfer by fiscal year, you notice that there is less red and more green projected each year through FY 2011. By the end of FY 2011, everything is green except Site 12, which is a site we just recently promoted from a site screening area. The areas with the green cross-hatching represents areas where we think we will need to put a Land Use Control on the property. Right now, we are projecting that all of the property on the entire Base will be environmentally ready for transfer by 2012.

Eric Lindhultd mentioned that these (Land Area Environmentally Available for Transfer) figures are some of the better maps of the sites, most helpful in understanding where everything is and how it's going to end up.

Mr. Lewandowski mentioned that the next agenda item was the Air Force remediation project, scheduled to resume in June. Hopefully the Air Force can bring everyone up to speed on that project at the next RAB meeting.

Curt Frye provided a summary of status for Site 2 and Site 12. The Remedial Investigation (RI) report for Site 2 - Antenna Field Landfill has been in the regulatory agency hands for feedback. Mr. Frye mentioned that a series of investigations at Site 2 had not identified any substantial contamination that would constitute an actionable risk that would warrant any type of remedy. The Team has a goal to sign a no action record of decision for Site 2 this year. Previous to this year, we had been doing our investigation at Site 2. We think really what's happened is that the bulk of reported landfill activities happened over here (referring to a projected figure of Site 2 and Site 12) that we're now calling Site 12. Site 12 was initially picked up on what's called an EPIC study by EPA. Aerial photographs were examined in great detail, resulting in the EPA requesting the Navy to investigate anomalies at what is now referred to as Site 12. A contractor for the Navy performed a drum and debris removal at the anomalies that was combined with soil sampling that did yield some contamination, nothing major, but contaminants included lead, SVOCs (semivolatile organic compounds) and some pesticides. In the course of verifying previous results from Site 12 that had laboratory analysis quality control issues, the Navy assigned Tetra Tech to resample in 2007. In the process of performing the resampling and observing the site (former SSA 12) we found several other areas of partially buried metal debris and evidence of past landfill activities like uneven ground surface that appeared to have been dug up and refilled. These disturbed areas looked like they warranted further investigation. After brush clearing to perform the resample activities, the area gave an appearance like Site 3, where considerable historical landfill activity had been discovered. So last year, in 2008, at the same time the Navy performed an EM (electromagnetic) geophysical survey at Site 3, the contractor was directed to add Site 12 to the EM survey work. Based on the evidence collected so far, it has been agreed to elevate the former site screening area (SSA) 12 to Site 12, known as the South Landfill, for a full remedial investigation, feasibility study if it is warranted, and a CERCLA decision document. This fiscal year we have budgeted and scheduled test pits to verify the EM survey anomalies. From there we will decide what is necessary to delineate nature and extent of contamination at the site. For initial scheduling purposes, we're projecting having a remedy in place by 2012 if we have no major surprises.

Ted Roth asked who would be here in 2011 and 2012 to do this (remedy in place)? Mr. Frye replied that the situation can change in the future. We operate the cleanup program independent of what's going with the Base property transfer. Mr. Roth asked if there is a contingency plan if the Navy is not here? Mr. Lewandowski explained that the DoD will still be responsible, whether it's the Navy or whether the Air Force takes over. No final decision's been made as to exactly what is going to happen, but the DoD umbrella will be responsible for this. Mr. Frye added that the way the law is written, the Navy and DoD are responsible for the cleanup of the site, essentially forever. In the event of a transfer, covenants are written into the deed to allow it to come back to the government to clean up the site. Ted Roth mentioned that he thinks that's true for any environmental thing, isn't it? Mr. Frye agreed that at least for federal property transfers it is true. Al Deckert asked if the Air National Guard and the Air Force National Guard are considered a single entity in this plan, and where will they be located on the (projected) map? Eric Humphreys replied that the Navy will be there until November 2011. Right now, the current plan is for the Air Force to take over all of the property. The Air National Guard, Army National Guard, and the Army Reserve will have a military enclave approximately there (pointing to a location near Site 1 on the projected figure).

Don Whalen introduced himself to talk about Site 3, also known as the Ninth Street Landfill. Site 3 is located on the southwestern part of the Air Station bordering on Horsham Road and the Commonwealth Country Club. Mr. Whalen summarized the history of the site as well as the history of investigations. In April 2007, preliminary test pits encountered landfill waste and soil contamination. In April 2008, the Navy performed an EM survey to delineate the areas of waste discovered by the preliminary test pits. In December 2008, the Navy issued the Round 2 Interim Groundwater Monitoring Report, confirming previous investigations indicating a low level of contamination in the groundwater. In January 2009, the

Navy performed confirmation test pits, soil sampling as well as surface water and sediment sampling. The information collected will be used in a comprehensive remedial investigation report for Site 3 in fiscal year 2009, followed by a feasibility study report in fiscal year 2009-2010 and a record of decision in 2010. Results from the EM survey were presented with a series of slides (attached) showing the anomalies as well as photos from the test pit excavations. EM anomalies shown in the geophysics report were quite well confirmed by the subsequent test pits. Where the EM survey report showed buried waste, it was found, and conversely, where the EM survey found nothing, the corresponding test pit confirmed the absence of landfill waste. Waste materials encountered included scrap steel, other metal waste, burned and buried waste, and in some places unburned combustible waste like plastic, Styrofoam and general waste. In one test pit, a high level of solvent was recorded by the PID (photoionization detector) and in another, tiles suspected of possible asbestos containing material was encountered. Results from the January 2009 soil sample laboratory analysis will become available in Mid March.

Mr. Roth asked about the toxicity of the scrap metal, charred waste and Styrofoam. It's not pretty, but it is inert, not an environmental issue? No reason to fool with that, is there? Mr. Whalen and Russ Turner explained that based on visual observations scrap metal wouldn't be a concern, but the soil samples are collected for laboratory analysis, chemical analysis to see what else could be associated that is not visible to the eye. Mr. Frye added that it is correct to think that we wouldn't recommend spending money to clean it up if we don't find an actionable risk to human health.

Mr. Roth added that the charts provided were good, but it would be helpful if the chart showing the various anomalies had a legend showing what the various colors represent. Was the chart generated from some kind of an aerial shot or hand-done? Mr. Whalen and Mr. Turner explained that the figure of the EM anomalies was produced by a geophysicist using a back-pack mounted EM unit combined with a GPS to provide coordinates. The geophysicist walked over the area with an antenna (looked like a rod) out in front. The antenna induced an electromagnetic (EM) field in the area directly ahead that could be read by an EM sensor on his back. EM readings were paired with the simultaneous GPS position to prepare the figure of anomalies. Any changes in the electroconductivity in the ground would be recorded along with the corresponding GPS coordinates. Metal would give a stronger signal than nonmetal. Changes in soil type or density (resulting from trenching or other disturbances) would also be picked up but be less intense than a metallic object. Both color extremes of the spectrum – blue and red - indicate an EM anomaly response. Just the middle of the spectrum, pale yellow on the figures, is neutral.

CDR. Humphreys asked how deep the sensing goes. Mr. Whalen replied that the signal is good to 15 or 20 feet, but that the top bedrock is between about 6 and 12 feet in the area. No landfill activities would have been possible deeper than the top of bedrock.

Mr. Frye informed the meeting that in accordance with the process specified in the FFA (federal facilities agreement) for NAS JRB Willow Grove, the Navy, EPA and PADEP had reached consensus for no further action at Site 4. The No Action Consensus Document was ready for signatures by Navy, EPA and PADEP. Site 4 is the site known as the North End Landfill. Mr. Frye provided a summary of the discovery and investigation steps taken to arrive at consensus for no action. A Record of Decision (ROD) is not required for this site under CERCLA because in the site did not enter the "Remedial Investigation" phase.

Mr. Frye introduced Russ Turner to provide an update of plans and activities at Site 5 – Fire Training Area. Referring to figures handed out to meeting attendees as well as projected slides, Mr. Turner reviewed the Site 5 location, nearby features recognized by the public, the history of fire training operations at Site 5, and the site conceptual model, including a review of the groundwater flow regime and groundwater contamination issues. Compounds, mostly consisting of solvents and chlorinated solvents, leaked from drums or were spilled in the area of historical drum storage, resulting in a groundwater contamination plume the Navy is preparing to remediate. The Navy is in the process of implementing a pilot-scale test to gauge feasibility and determine advantageous conditions for enhancing the bioremediation process naturally underway. Bioremediation will be promoted to reduce concentrations of chlorinated solvents in the relatively shallow groundwater beneath the historical drum storage area. After all of these years, it is not uncommon to find the natural flora, the biological system,

remediating the chlorinated compounds. The goal is to circulate groundwater and add amendments to augment the natural biological system there at Site 5. Groundwater samples have been collected for analysis of the parameters that will affect the viability of the naturally occurring bacteria (commonly referred to as "bugs"). The bacteria thrive in low oxygen environments with a pH slightly above neutral. Many of the locations we sampled had the reverse conditions, too high dissolved oxygen and too low pH. After performing hydrogeological investigations of the aquifer region, an injection and extraction well array was discussed among all parties (Navy, Tetra Tech, EPA and PADEP), designed and installed. Testing of the well array led to modifications to the final plan for pilot groundwater circulation operations. It was decided that each circulation well will be piped to allow reverse operation, that is, each circulation well can function either as an injection well or extraction well at different times. This flexibility will enable the Navy to reverse the groundwater flow regime in the study area if that is deemed desirable later in the test. After the engineering support structures and machinery, pumps and piping are installed, the first step will be to inject and recirculate groundwater mixed with sodium bicarbonate buffer solution to raise the pH of the study area groundwater. Raising the pH is expected in itself to promote the natural bacterial action underway. Control of pH will be followed directly by the introduction of a metabolic amendment carbon source such as lactate to further promote biological activity. Eric Lindhult added that sodium lactate or molasses are common compounds used for this purpose. Mr. Turner finished his presentation by stating that first construction of the installation of bioremediation support and piping structures should begin in February 2009.

Mr. Lewandowski added that the tricky thing is to get as much contact as possible among the bacteria and amendments in the contaminated groundwater. That's the idea about being able to reverse the pumps, basically to get as much contact as possible. Mr. Turner agreed and added that because the contamination is in a non-homogeneous rock matrix, by pumping just one direction you could even be bypassing part of the contamination in the matrix. We want to keep all of our options open as we proceed with this test. Mr. Lewandowski mentioned the deeper groundwater. This treatment won't be contacting or affecting that deeper groundwater now, but once we knock this source of higher contamination down, then any improvement will follow through to the deeper groundwater as well. Pointing to the projected figure of the area, Mr. Turner explained that the strong center of the plume contamination exists only in the shallow zone near the historical drum storage area. Diffuse deeper groundwater contamination from Site 5 can be found as far away as approximately 200 feet below ground at the well installed near the Army Reserve vehicle maintenance shop, but only the relatively more contaminated groundwater in the shallow zone very near the Site 5 historical source is in the range of concentrations that we can effectively deal with through biostimulation. Mr. Roth asked if the well off the runway behind the Army Reserve buildings had been suspected of containing contamination coming from under the Army building, contamination dumped off helicopters? Mr. Turner explained that the well being discussed is unique, being the downgradient well in the deep aquifer for Site 5, and the upgradient well for Site 3 in the shallow zone. Pointing out the features on the projected slide, Mr. Turner added that as Don Whalen had mentioned, Site 3 has a low level of solvent contamination in the groundwater in addition to the history of landfill operations recently discovered and delineated. In searching for the source of the Site 3 groundwater contamination, we focused on the oil-water separator at the corner of the Army Reserve Hangar. That oil-water separator probably had received solvents and oil washed from helicopters during maintenance activities, and reportedly, it had been replaced twice in the early to mid-1990s. There is no record of disposal of soil or other waste from those construction projects. Wells installed near the oil water separator encountered PCE in the shallow zone and the deep zone. Our hydrogeologists concluded that the only place the deeper contamination could be coming from would have been further upgradient, in the vicinity of the Army Reserve vehicle maintenance shop. So eventually, a monitoring well was placed there (pointing to the location on the projected slide) for the dual purpose of defining the downgradient edge of Site 5 groundwater, and to investigate the upgradient limit of the Site 3 groundwater plume.

Mr. Lewandowski announced that the meeting was a little ahead of schedule due partly to not having an Air Force presentation. That wraps up the Navy's portion of the RAB meeting, but as always we're open

to receive questions and comments of what we did well tonight or suggestions how we could improve to make this information more understandable or clarify what it is we are doing.

Mr. Lewandowski proposed that the next RAB meeting be held on April 15, 2009 at 6:00 PM at the Horsham Township Library. A brief discussion of the proposed date (tax day) ensued and the date was found to be acceptable among those in attendance.

Mr. Lewandowski thanked everyone for coming and adjourned the 37<sup>th</sup> Restoration Advisory Board meeting.





**BRAC  
PMO**



**NAS JRB  
WILLOW GROVE  
RESTORATION  
ADVISORY BOARD  
(RAB)**

**January 21, 2009  
Meeting Number 37**



# Agenda

**BRAC  
PMO**

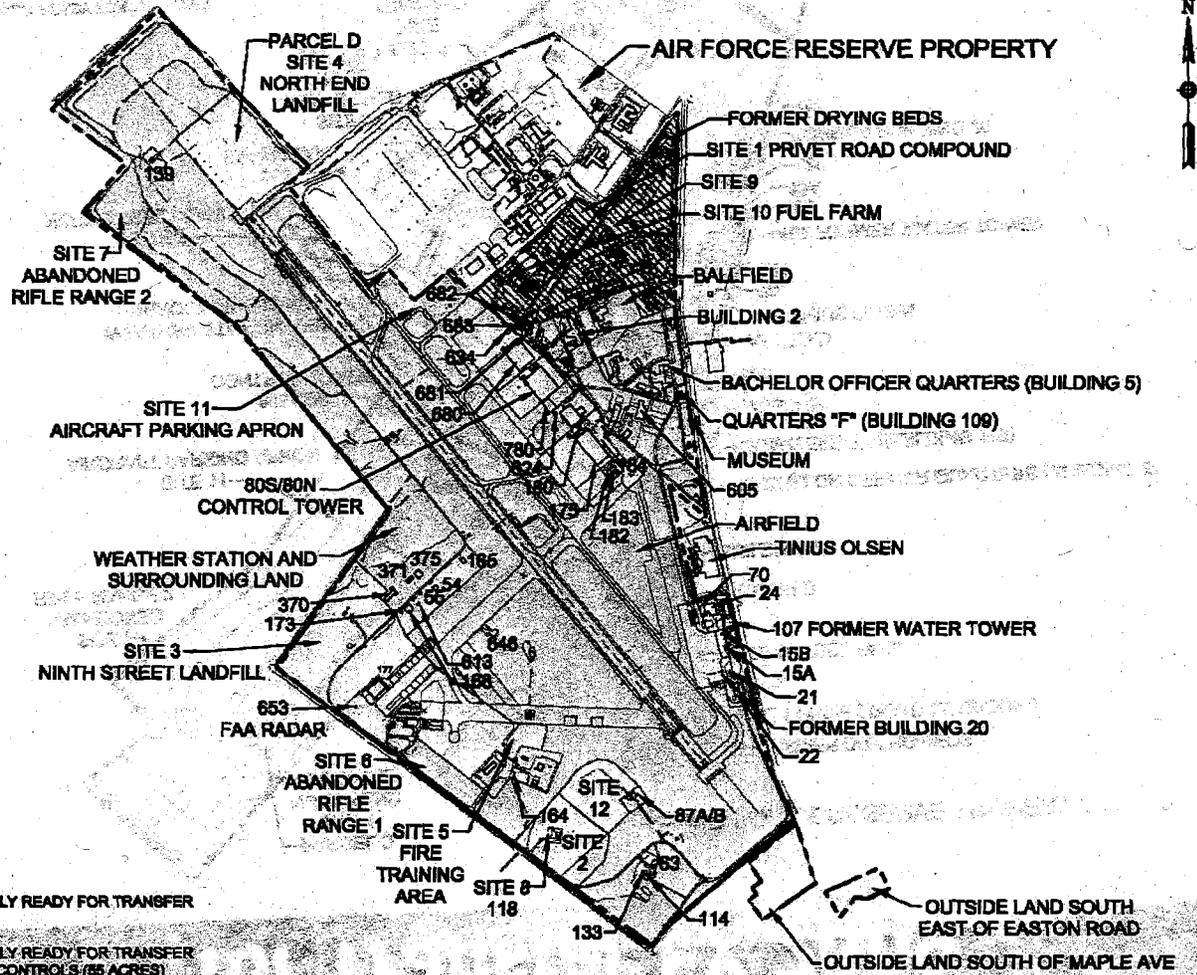
- Land Area Ready for Future Property Transfer
- Air Force POL Site Remedial Action
- Site 2 – Antenna Field Landfill RI Report; Site 12 – South Landfill Remedial Investigation
- Site 3 – Ninth Street Landfill Investigation
- Site 4 – North End Landfill
- Site 5 – Fire Training Area Pilot Bio-Remediation Status





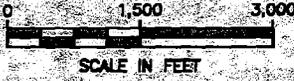
# Land Area Environmentally Ready for Transfer December 2008

# BRAC PMO



**LEGEND**

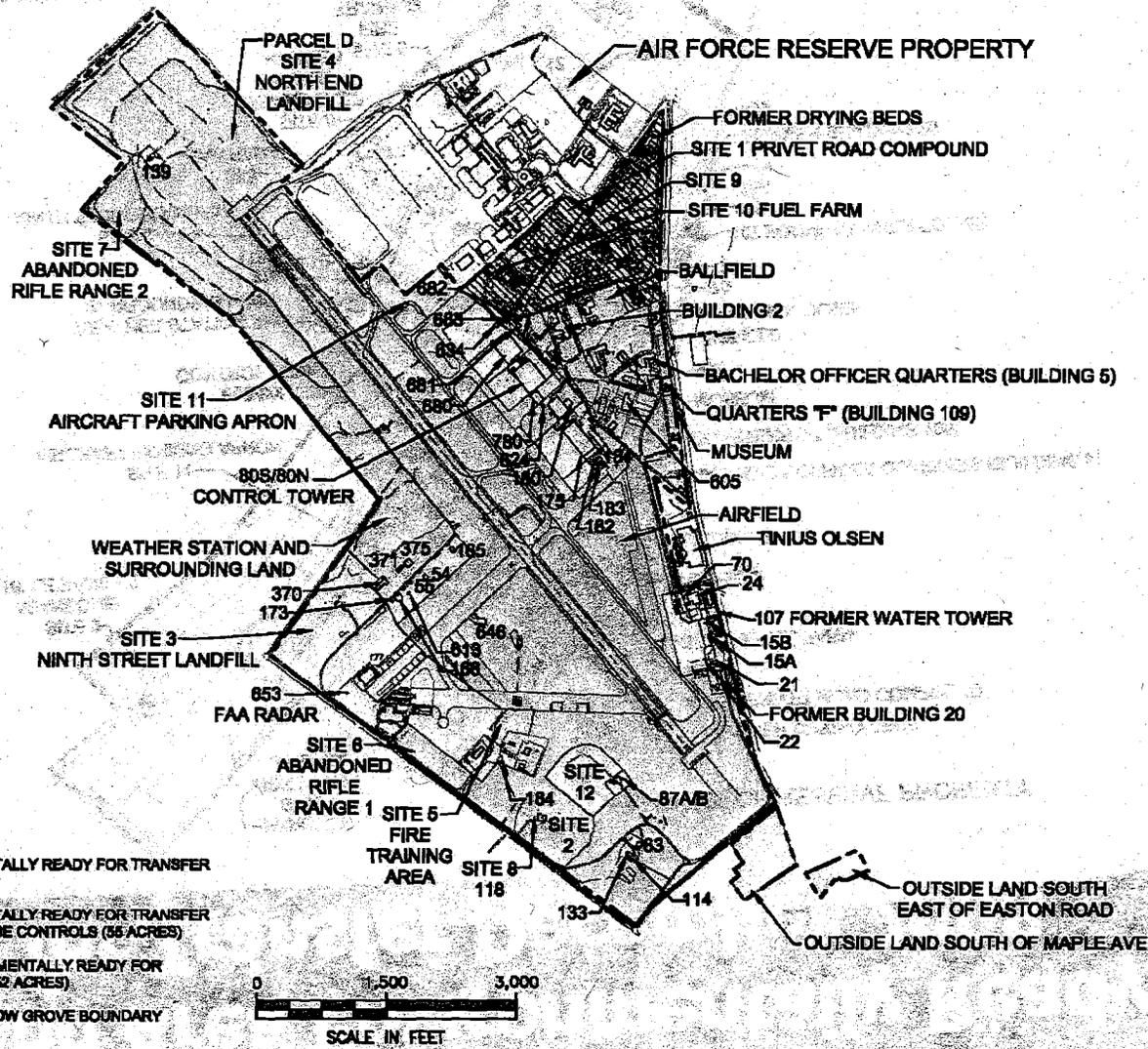
-  ENVIRONMENTALLY READY FOR TRANSFER (802 ACRES)
-  ENVIRONMENTALLY READY FOR TRANSFER WITH LAND USE CONTROLS (65 ACRES)
-  NOT ENVIRONMENTALLY READY FOR TRANSFER (188 ACRES)
-  NAS JRB WILLOW GROVE BOUNDARY





# Land Area Environmentally Ready for Transfer FY 2009

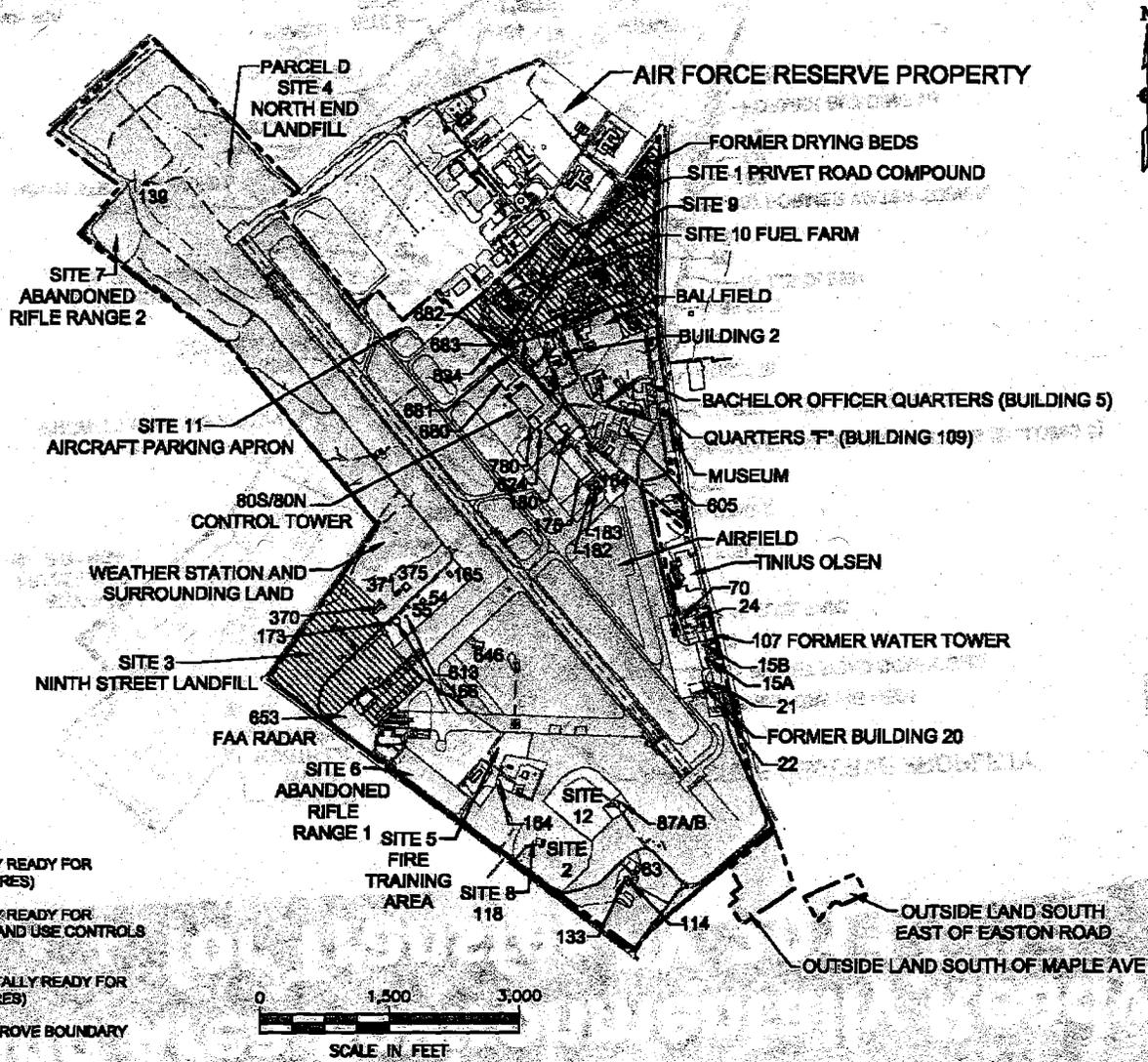
## BRAC PMO



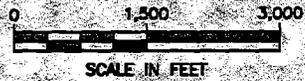


# Land Area Environmentally Ready for Transfer FY 2010

## BRAC PMO



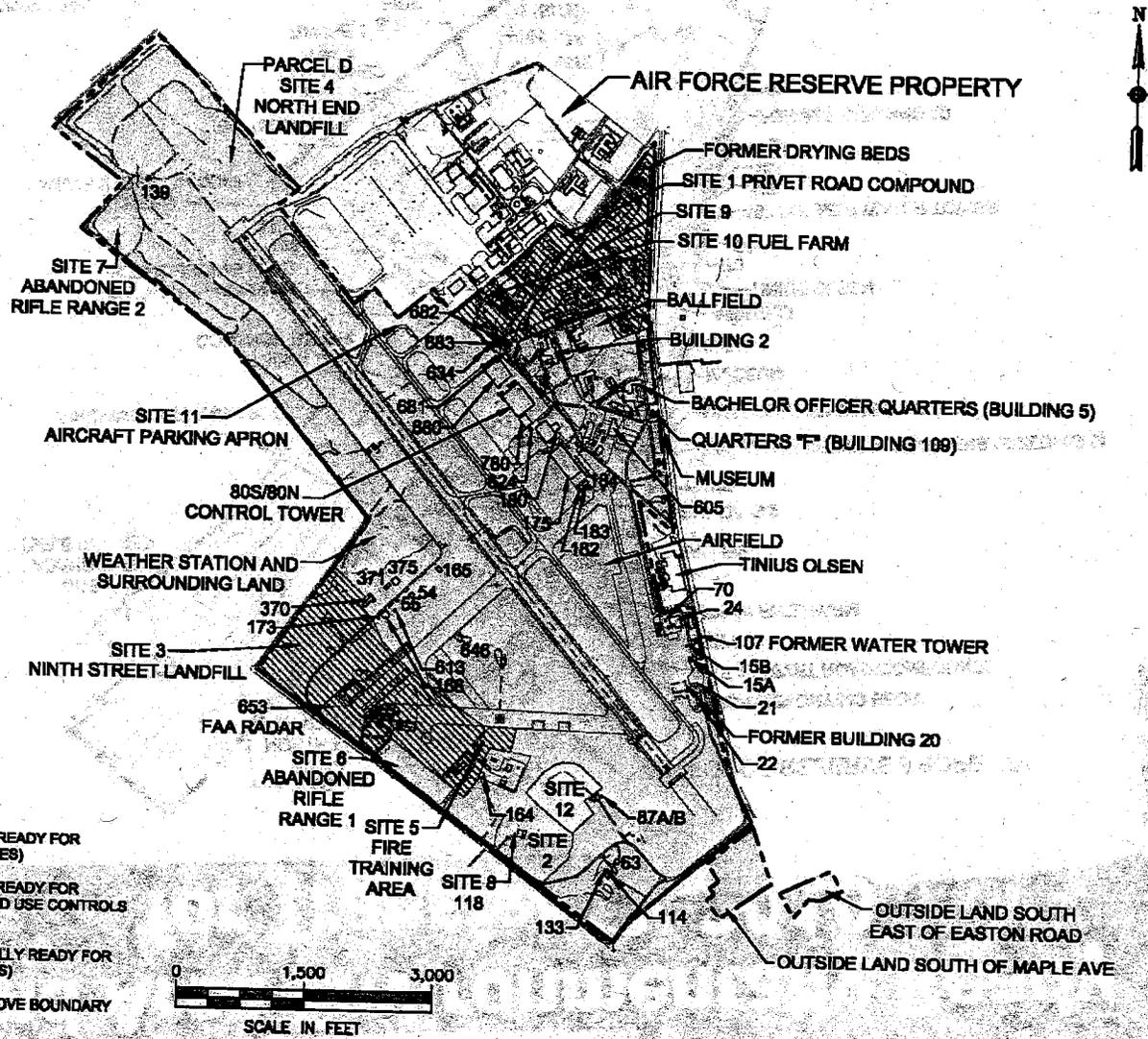
- LEGEND**
- ENVIRONMENTALLY READY FOR TRANSFER (870 ACRES)
  - ENVIRONMENTALLY READY FOR TRANSFER WITH LAND USE CONTROLS (86 ACRES)
  - NOT ENVIRONMENTALLY READY FOR TRANSFER (81 ACRES)
  - NAS JRB WILLOW GROVE BOUNDARY





# Land Area Environmentally Ready for Transfer FY 2011

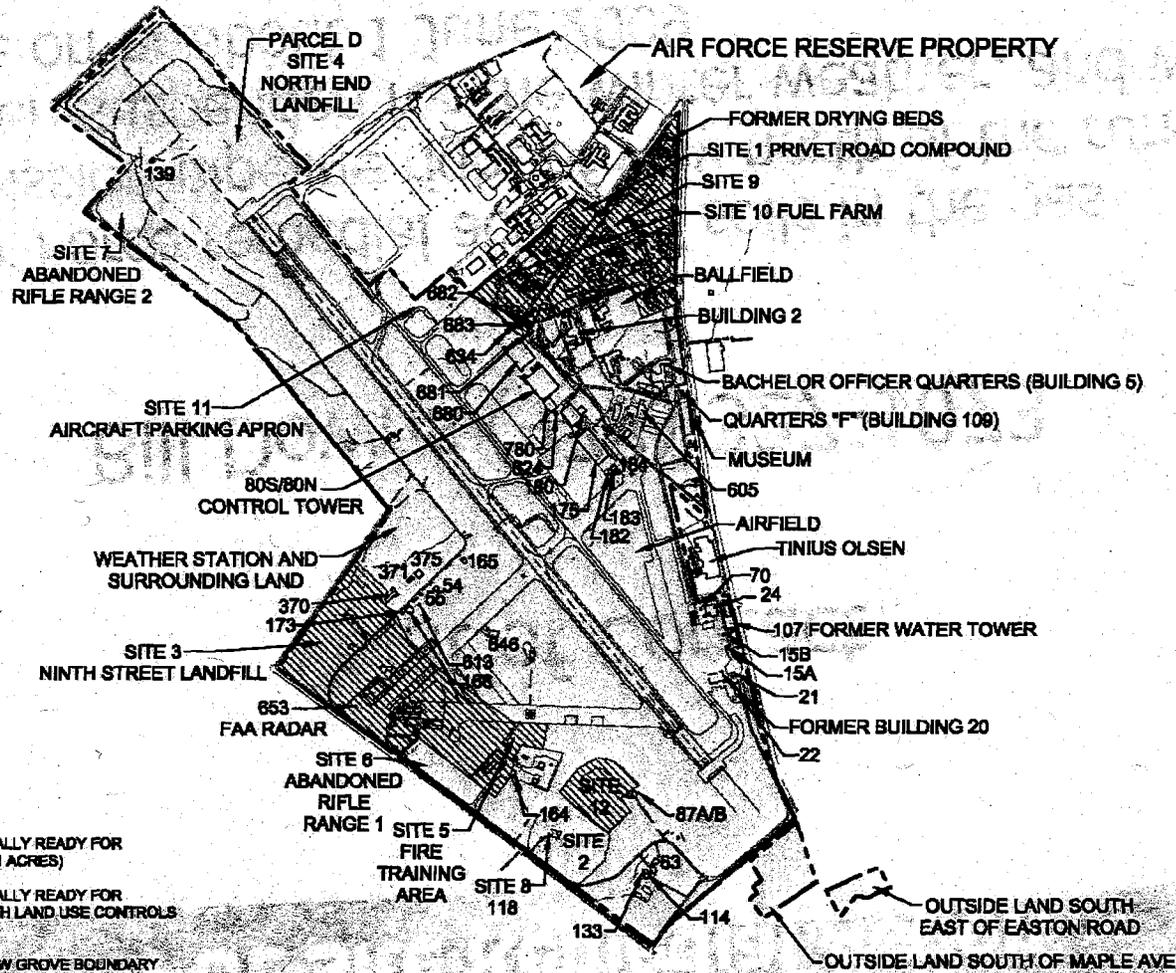
# BRAC PMO





# Land Area Environmentally Ready for Transfer Beyond FY 2011

## BRAC PMO



### LEGEND

-  ENVIRONMENTALLY READY FOR TRANSFER (711 ACRES)
-  ENVIRONMENTALLY READY FOR TRANSFER WITH LAND USE CONTROLS (135 ACRES)
-  NAB JRB WILLOW GROVE BOUNDARY



NOTE: SITE 12 PROJECTED ENVIRONMENTALLY READY FOR TRANSFER APPROXIMATELY FISCAL YEAR 2012.





# Air Force Reserve POL Site Remedial Action

**BRAC  
PMO**

## Point of Contact

**Bill Downs (478) 327-1073**

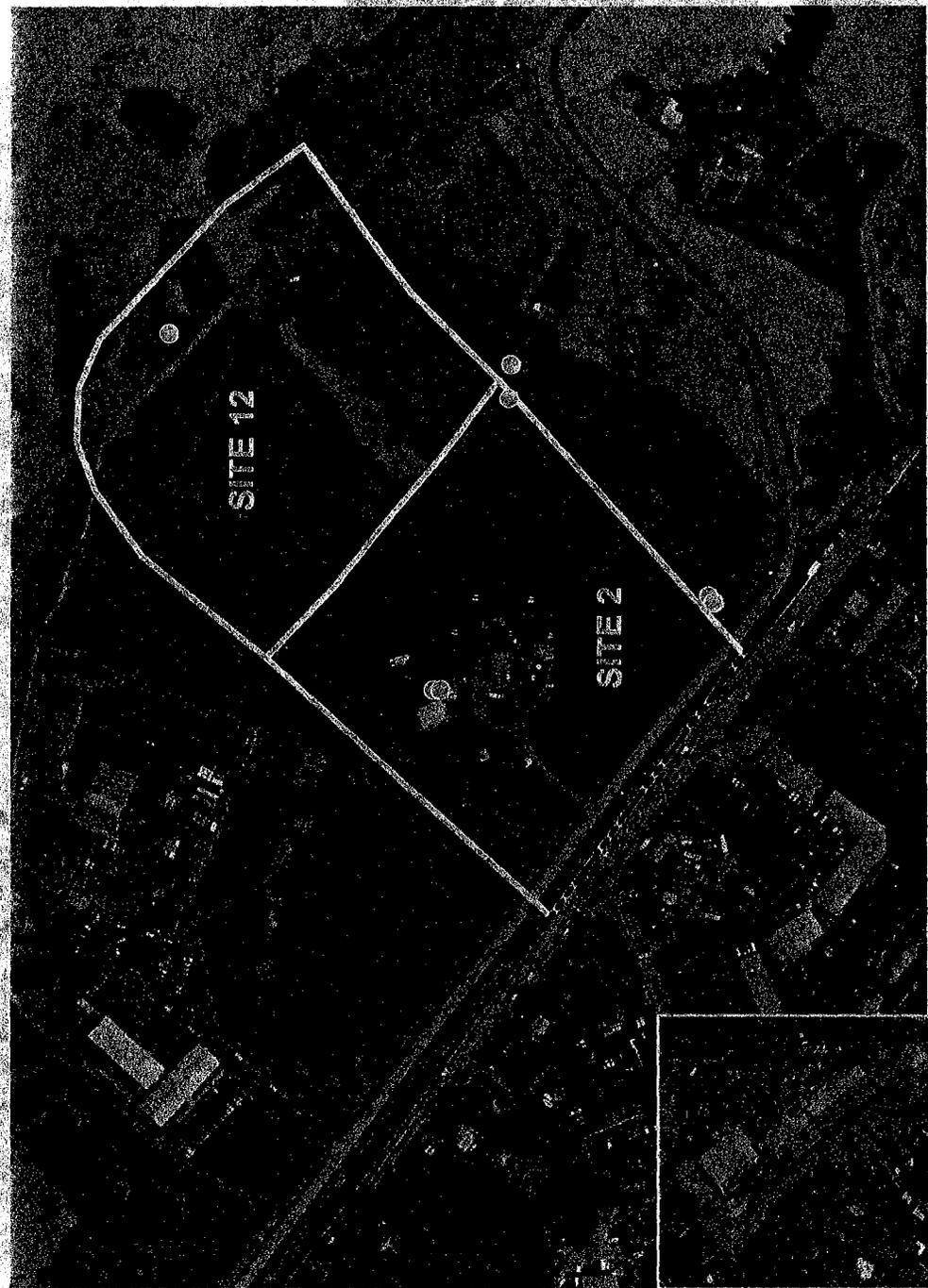
- The Air Force remedial action of soils in the gas transmission pipeline right of way north of the runway has been suspended for the winter weather, and will resume on or about 1 June 2009





# Site 2 RI Report Site 12 South Landfill

**BRAC  
PMO**



LEGEND  
● MONITORING WELL LOCATION

SOURCE:  
DELAWARE VALLEY REGIONAL PLANNING COMMISSION  
2005 DIGITAL ORTHOMAGERY





**BRAC  
PMO**

# Site 3 Landfill Investigation



SOURCE:  
DELAWARE VALLEY REGIONAL PLANNING COMMISSION  
2005 DIGITAL ORTHOMAGERY



## Site 3 Landfill Investigation Status

**BRAC  
PMO**

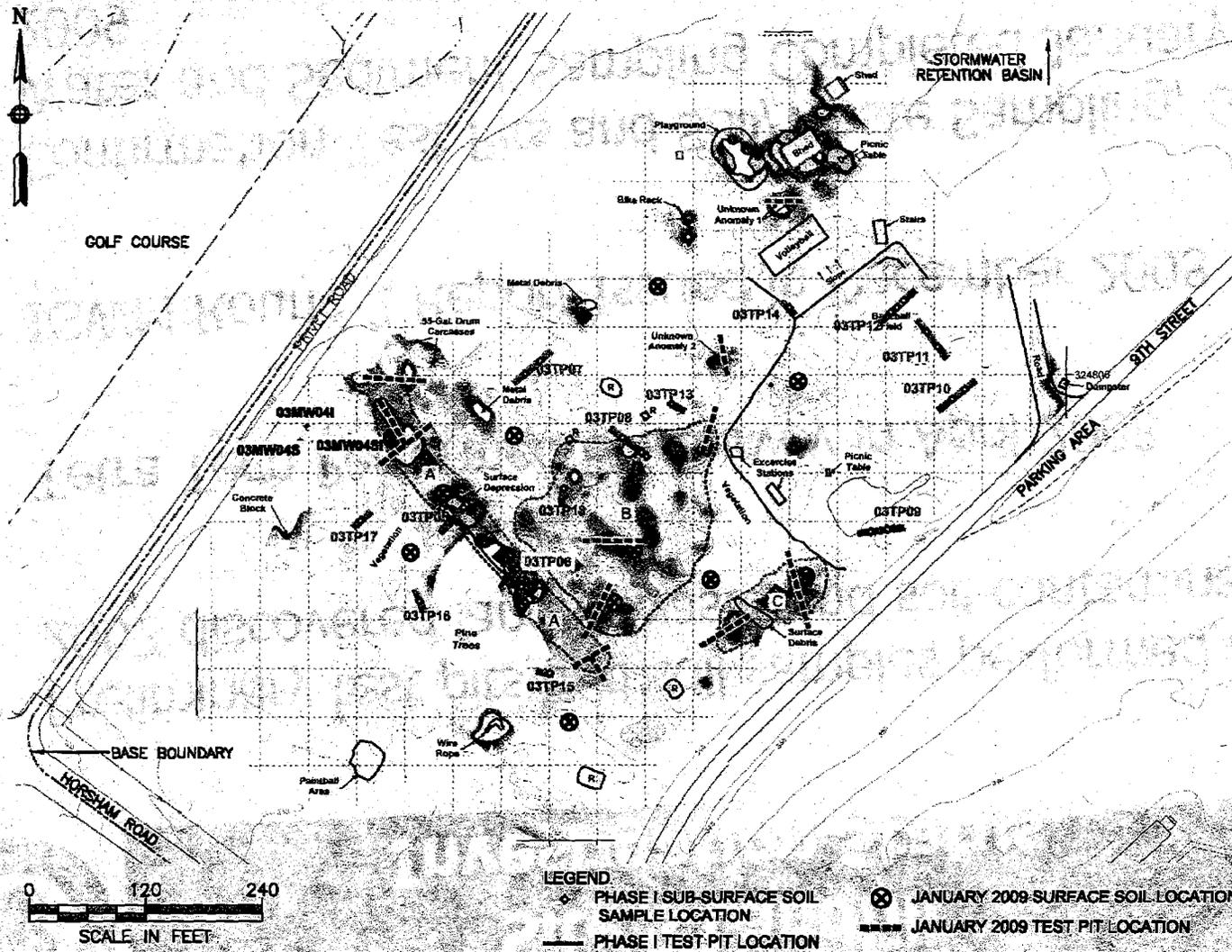
- Preliminary test pits and soil samples performed in April 2007 discovered landfill waste and soil contamination
- Tetra Tech Performed EM Survey in April 2008
- IGWM Round 2 Report Issued in December 2008
- Confirmation Test Pits and Soil/Waste Sampling, Surface Water and Sediment Sampling Completed January 15, 2009

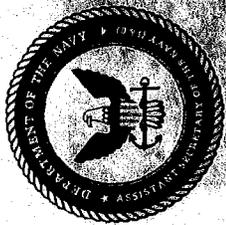




# Site 3 Test Pit Locations January 2009

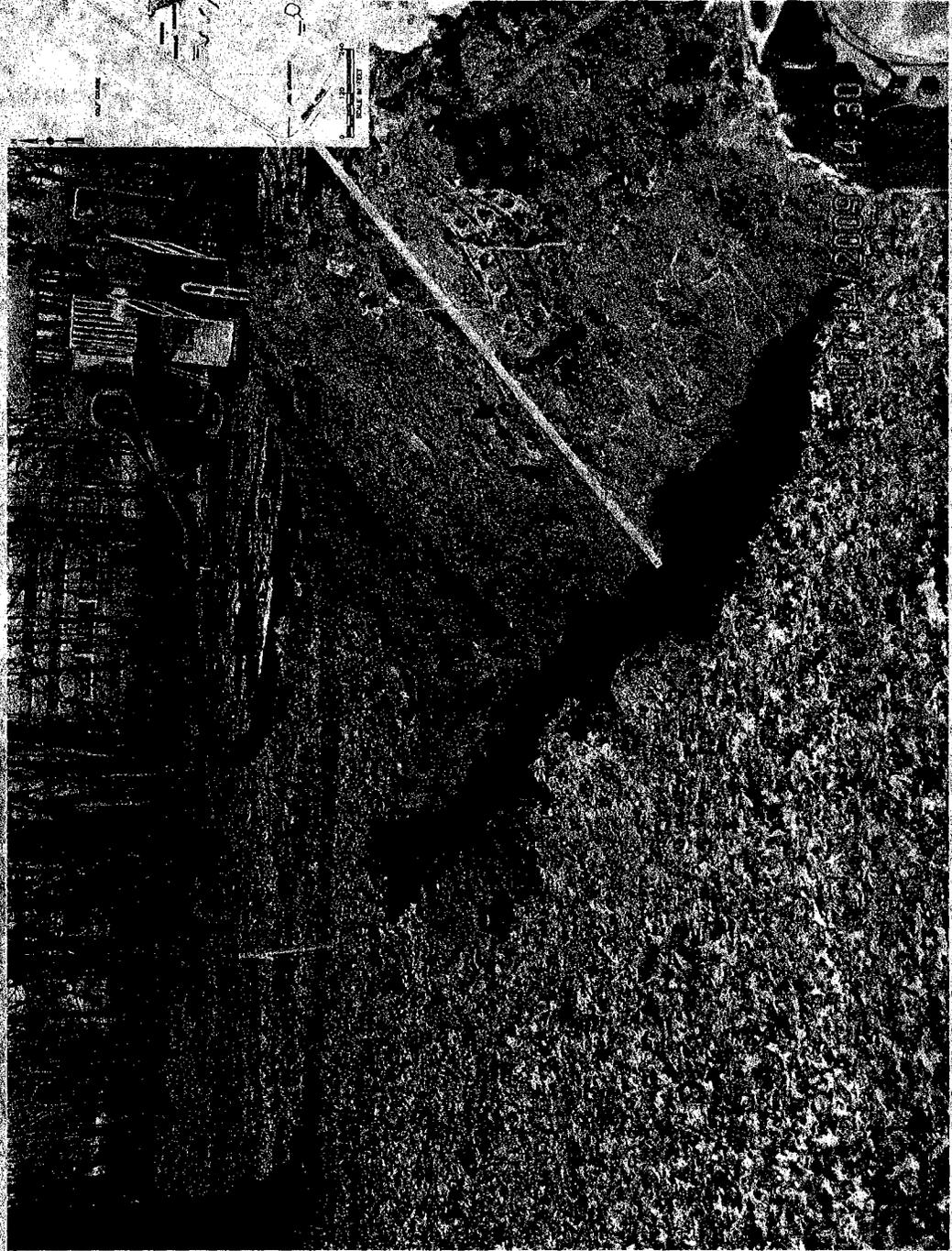
**BRAC  
PMO**





**BRAC  
PMO**

# Site 3 Test Pits January 2009

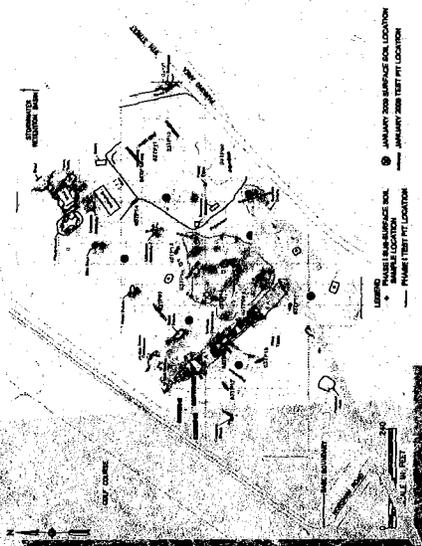






# Site 3 Test Pits January 2009

BRAC  
PMO



01/12/2009 15:08



# Site 3 Test Pits January 2009

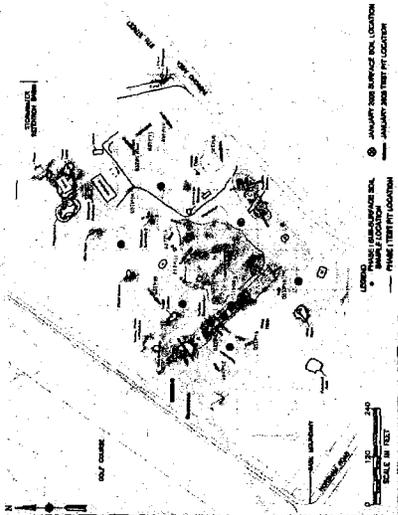
BRAC  
PMO





# Site 3 Test Pits January 2009

BRAC  
PMO

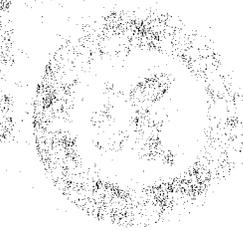




# Site 3 – Ninth Street Landfill Next Steps

BRAC  
PMO

- Remedial Investigation Report anticipated FY '09
- Feasibility Study Report FY '09/'10
- Record of Decision (ROD) FY '10



NAVAL AIR STATION  
WILLOW GROVE, PA  
JOINT RESERVE BASE



# Site Screening Area 4 (Site 4)

**BRAC  
PMO**



Site 4 – North  
End Landfill

No Action  
Consensus  
Agreement  
Signed January  
2009





# Site 5 - Fire Training Area Bioremediation

## BRAC PMO



LEGEND

- MONITORING WELL LOCATION
- PROPOSED MONITORING WELL LOCATION

SOURCE:  
DELAWARE VALLEY REGIONAL PLANNING  
COMMISSION 2005: DIGITAL ORTHOIMAGERY

SCALE IN FEET

0 240 480









# RAB Member Questions Closing Remarks

**BRAC  
PMO**

- RAB Member Questions/Suggestions
- Document availability at Horsham Township Library and on line
- Next Meeting Date

