



NAVAL AIR STATION JOINT RESERVE BASE (NAS JRB) WILLOW GROVE Restoration Advisory Board (RAB) Meeting Minutes RAB Meeting No. 38

Meeting Date: April 15, 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
	Rick Meyers	RAB Member
	Eric Lindhultd (R)	RAB Member
	Ted Roth (R)	RAB Member
	Jeff Fread	Resident
	Joe Donnelly (R)	NAS JRB Willow Grove Executive Officer, RAB
Co Chair	Lisa Cunningham	U.S. EPA
	Bob Lewandowski (R)	Navy, BRAC PMO
	Curt Frye (R)	Navy, NAVFAC
	Bill Heil (R)	Navy, Willow Grove
	Hal Dusen (R)	Navy, Willow Grove
	Bill Downs	HQ AFRC
	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
	Kevin Kilmartin	Tetra Tech NUS, Inc
	Scott Shaw	Tetra Tech
	Andrew Kendray	Tetra Tech
Andrew Johnson	Tetra Tech	
	(R) Designates RAB Member	

Bob Lewandowski introduced himself as the BRAC (Base Realignment and Closure) coordinator from the Navy's program management office in Philadelphia. Mr. Lewandowski thanked everyone for coming to this RAB meeting on tax day 2009 and mentioned that he wanted to thank the RAB members not only for paying their taxes that pay for the salaries of the government employees and contractors here, but by assisting with the RAB process you help keep the program working efficiently and help us to maximize our use of tax dollars to clean up this Base. So thank you very much.

Mr. Lewandowski introduced and welcomed Commander Joe Donnelly. CDR. Donnelly will be taking the place of the NAS JRB Willow Grove Executive Officer and RAB co-chair, CDR. Eric

Humphreys. CDR. Donnelly mentioned that he expects to be at NAS JRB Willow Grove about six months.

Mr. Lewandowski pointed out that this is the 38th RAB meeting and that the Navy has been sponsoring these meetings at least ten years generally four times per year, so that adds up to a lot of meetings. Ted Roth asked how much longer RAB meetings will continue? Mr. Lewandowski explained that he thinks the Navy will continue with the meetings as long as the Navy has responsibility here for cleanups. At some point in time, the Navy is expecting to transfer those responsibilities by special legislation along with the property to the Air Force. At that time the Air Force will decide. Bill Downs introduced himself from Air Force Reserve headquarters, and explained that the Air Force Center of Environmental Excellence has taken the reins for the remediation for the Air Force. The (National) Guard does not come under that. Most of the property the Air Force once occupied is going to be turned over to the (National) Guard, but the Air Force will continue to do the restoration on the northeaster part of the Base over what was the Air Force Reserve section of the facility. But when the Navy side is transferred over to the Air Force, it is not completely decided which Command will have the responsibility for finishing cleanups. At least at this level we aren't exactly sure what will be decided. Mr. Lewandowski agreed, that is how he understands it, the decision isn't 100% solid, and added that the transition is at least a couple of years from now, after operational closure by the Navy in 2011. So you won't get rid of the Navy any time soon.

Mr. Lewandowski mentioned an item that wasn't on the agenda. The Navy will shortly be awarding a "historical radiological assessment." That is an exercise to research if there were ever any radiological materials used on the Base, and if so, what was the disposition of those materials. At other similar bases, other Air Stations that have done this type of assessment, investigators have identified the main type of this material as paint for instrument dials used back in the day to be visible in the dark. This project will be an exercise to research back through old documents and interview personnel to see if any of these types of products were used and what happened to them. We will try to have a representative of the Navy entity responsible for the investigation to the next RAB to give a briefing.

Mr. Myers asked if there haven't been any other findings like that. Do you do a sweep with a Geiger counter? With the age of some of these sites isn't that something you should do to protect yourselves? Curt Frye and Mr. Lewandowski explained that unless there is other evidence causing us to suspect radiological waste, that's an effort we wouldn't usually take. This upcoming project will be a detailed records search to determine potential likelihood for radiological materials as Step 1. Then we will see where that leads.

Mr. Lewandowski mentioned that the next agenda item was the CERFA (Community Environmental Response Facilitation Act) Category 3 parcels. About two years ago the Navy completed the CERFA Determination of Uncontaminated Properties. The primary purpose of that document was to identify uncontaminated parcels that could be available for quick transfer. Category 1 properties (referring to the projected slide) are the parcels in white. These are the areas of no known release of contaminated material, or no known storage of contaminated material. In order to arrive at Category 1 parcel status, the Navy had to identify parcels known to

have had a release or storage of a hazardous material (Category 2 parcels), the red areas on the projected slide. Then the third type of parcel, Category 3, areas of potential release are marked in yellow on the projected slide. Don Whalen is the Tetra Tech contractor who researched existing documents to further investigate Category 3 parcels. Referring to the projected slide, Mr. Whalen mentioned the documents he obtained and reviewed to help clarify the property status of Category 3 parcels. If the CERFA report indicated a potential asbestos problem, there was a 1997 asbestos survey report from a Navy contractor that performed asbestos inspections of all buildings Base wide. If the issue was lead-based paint, there was something similar done Base wide by another Navy contractor in 1996 inspecting all buildings for lead-based paint. In the case of the parcel where the former elevated water tank was removed, the CERFA report pointed to potential for lead contamination in the soil from old lead paint. The closeout report for the water tower removal Mr. Whalen was able to find provided information regarding confirmatory soil samples obtained after the tank demolition and associated soil removal were completed. There were lots of storage tanks on the Base. We were looking for UST (underground storage tank) closure reports to clarify status of several of the Category 3 sites. If no closure report could be found, that means there could be a potential problem, so field samples may be warranted. Spills of AFFF fire fighting foam was another class of concerns for Category 3 sites. There is a fluorinated chemical in AFFF that may be emerging as a concern, so those parcels are awaiting further government guidance expected soon for resolution. Mr. Whalen then provided a brief summary of various communications, emails, reports, sample analysis results; file memos, historical aerial photographs and blueprints he reviewed in the process. Mr. Lewandowski added that Don has prepared a report of his findings as well as a matrix of site information to be used to put together a field work plan. Now we're using his work to figure out what kind of sampling we want to do at each those various Category 3 sites to clarify its' status.

Mr. Myers asked if asbestos found around a pipe wasn't breaking apart, is that passable, or are you removing all asbestos that is accessible. Mr. Lewandowski replied that if the asbestos is not damaged or friable or accessible, then we are allowed to transfer the property as long as we provide notification that the asbestos exists, so the next owner is aware that asbestos is in the particular facility.

Mr. Whalen then provided examples of his findings. Building 20 had been demolished and removed some years back. There is information to suggest that there were UST's associated with Building 20, but no report to document that there was proper closure (of the UST's). The tanks may have been taken away when the building was demolished, but we haven't been able to show that. So the Navy will probably want to investigate in the field. Similarly, at Building 164, at the Marine Corps Center, the CERFA report mentioned a suspected septic-type tank or leach field for the waste water drains from the building. We were able to find an old blueprint in the Navy's archives showing a septic tank leach field associated with Building 164. As far as we know it is still there, it just hasn't been closed properly. This is another case where the Navy may want to take a closer look. Russ Turner asked, just to show the other side of the coin, what about the "sludge drying beds." Mr. Whalen answered that the former sludge drying beds Category 3 site at the waste water treatment plant were closed out properly, with a report documenting proper closure that was not available to the CERFA investigators. No further field sampling should be needed to consider this parcel as Category 1.

Mr. Meyers asked if the yellow highlighted parcels are the Category 3 sites we have been referring to? Mr. Lewandowski confirmed that the yellow were the Category 3 sites and the red were mostly IR sites we have been dealing with since the beginning of the RAB. The yellow sites remain with questions.

Mr. Downs mentioned that it has been about a year since the Air Force provided a briefing of activities. The Air Force has only one site where active remediation is underway, the POL (petroleum, oil and lubricants) area. So tonight we will provide not only an update of what has been done over the past year, but also what we are planning the coming year and give a "road map" of where we are taking the site for closure. Scott Shaw of our contractor, Tetra Tech, will be making the technical portion of the briefing.

Mr. Shaw mentioned that the first slide is to bring the group up to date on Air Force activities. Phase I and Phase II will be discussed throughout this briefing. Phase I investigation refers largely to the fall 2008 investigation. Phase II will be what the Air Force is going to be doing later this year and into the fall in the same general area. One of the biggest issues we've had to deal with has been the amount of soil excavated during the initial Phase I investigation and then what we are going to do with soil that is generated in the spring and summer of this year. The Air Force also has a groundwater treatment biosparge system active in the POL area that is running now. We have been conducting compliance groundwater monitoring since 1998.

Referring to the projected slide, Mr. Shaw gave an in-depth historical summary of the POL area that originated as an initial spill of jet fuel from the storage/pumping facility near the northern property boundary of the Base. Groundwater monitoring wells and temporary monitoring well installations and their purpose over the years was pointed out. The location of the natural gas pipeline was described along with a brief summary of soil borings in the area. In the fall of 2008, largely between October and December, excavation was performed in the area indicated on the projected slide. Mr. Shaw finished his historical summary by referring to a projected slide of a photograph taken last fall showing the gas pipeline excavation and recoat process.

Mr. Roth mentioned that he is on the Board of Greame Park which is located north of the Base, up to County Line Road. At a past RAB meeting he had requested that someone should look at the water quality in the well at Greame Park, that there was contamination of some sort in the well water and possibly over at the Strawbridge House also. Nothing has been done about it. There's not even a report on it. Do you know anything about it? Jessica Kasmari replied that water quality in the Greame Park well was sampled, and analysis came back as OK. That sample was obtained about a year or year and a half ago. Results should have been sent to the Park, that is the procedure. Mr. Lewandowski added that the Navy also believed that sampling had been done by PADEP. Mr. Roth mentioned that the last thing (notice) Greame Park has (received) is that the water was contaminated. Charles Clark offered to speak with PADEP water quality department people to find out about status and will be in contact with Mr. Roth. Mr. Lindhult asked does groundwater flow to the northwest? Mr. Shaw explained the relationship between the surface water stream, that effects shallow groundwater flow direction in the vicinity, with the general flow direction of groundwater to the northwest.

Mr. Shaw continued, stating that this will be the same sort of work planned for this spring, excavation continuing toward the west. Preparations include construction of roads for access, and looking at soil and vegetation to make sure no wetlands are impacted. Once the right-of way excavation and pipeline recoat process is completed, the Air Force will perform another excavation in the area identified for source removal based on the 2006/2007 soil investigation, as shown on the project slide.

Mr. Lindhult asked what the contamination there is. How did it leapfrog over there that far? Is there a hypothesis how it got there? Mr. Shaw replied that contamination is the same jet fuel, but the photo is distorted and explained the actual distances and features are not that far apart. Mr. Roth asked if that is Transcon's pipeline? Mr. Shaw confirmed, yes it is.

Mr. Shaw showed a projected slide of Building NR201 with the soil excavated last fall. The soil is still there today and the Air Force is getting ready to deal with it as well as the soil to be excavated this season. A soil treatability study was performed as part of the Feasibility Study (FS) to look at ways to deal with the large amount of soil to be excavated, considering things like the volume of soil, treatment options, transportation costs etc. The treatability study found that vapor extraction was a viable treatment option for the soil. However, economic factors have changed since the original calculations were made. Transportation costs are now far lower than earlier calculated because of the drop in the price of fuel. Opposed to a year ago, when transportation costs were so much higher, off-site disposal is now probably the best option for the government.

Mr. Meyers asked if there is any reason this work can not be done in the winter and asked if you can not treat the soil and put it back where it came from. Mr. Shaw replied that there is so much soil to be treated; there is not enough room to treat the soil on Base and still maintain an active airfield. Mr. Clark added that Transcon's people had some requirements that the Air Force could only expose a certain length of pipe before it must be backfilled before digging up another length, so they would have had to treat the soil within a week; isn't that correct? Mr. Shaw confirmed, yes that's right. Mr. Roth asked how has the excavation been backfilled at this point? Mr. Shaw answered that backfill material has been brought in.

Mr. Shaw showed a projected slide of the next phase of the biosparge and groundwater compliance monitoring parts of the project. There are as many as 30 wells in Area B and 16 in Area D. Referring to the projected slide, Mr. Shaw explained that work was completed at Area H approximately one year ago and work continues as discussed. Currently the groundwater sparging system is operating in Area G, where we anticipate continuing operation until August, and then moving on to Area D, where we will be operating until next spring.

Mr. Lindhult asked about the rate of groundwater flow, and if the treatment process included recirculation of oxygen into the water to expedite the rate of flow and the contact of oxygen to the contaminant? Mr. Shaw replied that the groundwater flow rate varies considerably as you approach the stream, but he once calculated that it takes up to a year and a half or two years to cross the impacted area. The biosparge system does, in

effect, increase the exposure of groundwater to oxygen. Jeff Fread asked when will all of this biosparge treatment be completed? Mr. Shaw replied that he will be discussing that with the Air Force this afternoon, but it looks like it could be through 2011. Mr. Fread said so you are treating one lettered area at a time? Mr. Shaw replied that we have facilities to treat two areas at a time. For now, with the other work that has to be done in the area, working (biosparging) in more than one area would be tough because of the other vehicle traffic and heavy equipment operating. Once the excavation project is done, biosparging will be moving into more than one area at one time.

Mr. Frye introduced himself as the Navy remedial project manager, to give a quick update on the schedule for Site 2. Using a projected slide of Site 2 and Site 12 boundaries, Mr. Frye pointed out the location of Site 2 on the southwestern corner of the Air Station along Horsham Road across from the new WAWA store and pointed out the antenna array on the hill the site is located on. This site has been around for a long time. If we hold to schedule, we will be through with it this fiscal year. We submitted the draft remedial investigation report to the regulators. They reviewed it, and we recently submitted the draft final report to them. The next phase will be the final report. We have tentatively reached a consensus with the regulators on no action for this site based on the findings of the remedial investigation and a very detailed risk assessment process. In a large part, we think the lack of risk from the site is mostly because the original evidence of landfill activities, the reason Site 2 was investigated, was really pertaining to Site 12 (referring to the projected slide showing the location of the new Site 12 adjacent, east of Site 2). So, rather than just moving the investigation over here (to Site 12), our plan is to actually close out Site 2 with a no action ROD (Record of Decision) and then start up a new Site 12. We're hoping to finish the Site 2 remedial investigation phase and sign off on the final report fairly soon.

In the review of the Site 2 remedial investigation report, EPA mentioned concern for our groundwater sample results. There are seven wells at this site we sampled, but the sampling is not recent, it is from 1997. Based on those sample results, we did our risk assessment. So before we all agree to the no action ROD, we reached consensus to collect a current round of groundwater samples so everyone can be comfortable with the decision for no action. We don't anticipate any adverse change in the groundwater results. Assuming there is no change resulting from the current groundwater results, we will move ahead with the next phase in the CRECLA (Comprehensive Environmental Response and Liability Act) process, which is to prepare the Proposed Plan which requires a public meeting. That should occur at the next RAB meeting planned in the first half of July. Public notice of the Proposed Plan would be in Mid January, with the required 45 day public comment period to close in the end of July. Questions? No questions were received.

Mr. Whalen then presented an update on the Site 3 investigation. Site 3 – the Ninth Street Landfill is in the western part of the Base. Referring to figures handed out to meeting attendees as well as projected slide, Mr. Whalen reviewed the Site 3 location, nearby features recognized by the public, the history of suspected operations at Site 3, and the history of investigations (see handout). There was a Phase I remedial investigation in 1993 and a Phase II remedial investigation in 1996 that found that groundwater was contaminated with PCE (tetrachlorethene). In 2007, the site was revisited by the Navy because of suspicions the Navy had about the

appearance of certain observable irregularities on the site surface. Test pit excavations confirmed the existence buried waste in areas not identified by the earlier remedial investigation. In 2008 the Navy performed a geophysical electromagnetic (EM) survey to identify the extent of buried waste. In January 2009, the EM survey was followed up with a second test pit landfill delineation field investigation. Using the handouts and projected slides, Mr. Whalen summarized the field actions and results. The test pits confirmed excellent agreement with the EM Survey. Where the EM survey indicated buried waste, buried waste was found in the subsequent excavation. And conversely, where the EM survey indicated absence of buried waste, no buried waste was found in the subsequent excavation. In test pit 25, a number of volatile compounds, mostly toluene, ethylbenzene and xylene, were found in soil. PCE was encountered at a concentration of 200 parts per billion in the soil sample. This confirms the Phase II remedial investigation report that there appeared to be some sort of PCE source in Site 3 that contributed to the PCE found in groundwater. We also found some asbestos-containing material in test pit 20 (referring to the location of test pit 20 on the projected slide). Lead was found in 11 test pits and PAHs were found in five test pits. PAHs are the semi volatile compounds you get when you burn carbon-containing material.

Mr. Lewandowski added that one of the purposes of the test pits was not only to look at what was in the test pit, but also to determine if our boundary from the EM survey was accurate to finding the edge of the disposal zone. So we had our test pits going through the suspected waste disposal area into the adjacent area the EM survey indicated as clean or undisturbed soil. Mr. Whalen confirmed that we did a number of test pits like that through an (EM) anomaly and came out into clean soil (indicating several examples on the projected slide) just as the EM survey predicted, confirming the results of the EM survey. Mr. Lindhult asked about the PCE found in groundwater in an area mixed with fuel components, mentioning that that combination could cause anaerobic conditions and an anaerobic reaction. Did you ever find any TCE or other daughter products in the groundwater? Mr. Whalen said no daughter products of PCE have been noted, which is unusual. Generally PCE would degrade to daughter products, but for some reason, we have not detected that. Mr. Frye asked for more information about the asbestos encountered. Mr. Whalen explained that the "tiles" excavated in test pit 20 were old and not in very good shape. Mr. Turner added that the asbestos materials appeared to be thicker than typical siding used on homes in the long past. This material appeared more like the larger and thicker sheets of asbestos sheeting used to cover temporary structures and that sort of siding that was bolted on in sheets. Mr. Frye offered Transite? Mr. Turner and Mr. Roth agreed that sounded likely. Lisa Cunningham asked where the asbestos was encountered (indicating a spot on her handout). Mr. Whalen confirmed that was the correct location, and added that future plans for Site 3 include an RI (remedial investigation) report this fiscal year, the feasibility study report in fiscal year '09/'10 and the ROD in fiscal year 2010. Mr. Lewandowski added that those dates refer to the Federal fiscal year, not the state of Pennsylvania fiscal year which ends on a different date..., we can't keep up with those guys. Ms. Kasmari and Mr. Clark rebutted good naturedly, saying that the Pennsylvania fiscal year ends in July.

Kevin Kilmartin provided an update on the bioremediation project at Site 5. Using a projected slide of the site, Mr. Kilmartin started off with a review of site location, groundwater flow direction, and a description of the chlorinated solvents-contaminated groundwater plume the Navy is actively treating as we have discussed before. The bioremediation will use the naturally occurring bacteria within the aquifer that use these solvents in their metabolism to reduce or destroy the solvents. Initial biosampling and analysis indicates that these bacteria are present at a level too low to effectively conduct remediation. Using a projected slide and photo, Mr. Kilmartin pointed out the features of the groundwater wells, transfer lines and the treatment trailer, etc. that make up the pilot remediation system. Currently, the system has been operating a short time working on the first task, circulating sodium carbonate to raise the pH of the groundwater unit. The next task will be adding the substrate, the lactate material. Once we've adequately distributed the substrate material, we will stop injections and let nature take its course. After a period of about six weeks groundwater samples will be collected to determine progress. If we determine that even with these pH and amendment actions, the aquifer still needs a little help, we will proceed to the next optional action. These bacteria can be purchased commercially and are available in the form of bacteria preparations ready for injection using the type of system the Navy has installed here. We can actually buy the bacteria and add them to the aquifer to increase the populations to the densities we need to remediate this groundwater if necessary.

Mr. Lewandowski asked if Kevin could remind us of what the contaminants are at this site. Mr. Kilmartin replied that the contaminants here are chlorinated solvents. The three primary ones are 1,1,1-TCA (trichloroethane), TCE (trichloroethene) and tetrachloroethene (PCE). Unlike at Site 3 we discussed a few minutes back, where the PCE has not broken down, these solvents at Site 5 show evidence of partial break down to their early stage break down products. Mr. Clark, referring to the photo of the treatment trailer asked if this is all the government got for all of the money spent. Mr. Frye replied good naturedly that it's the most expensive trailer in the world. Mr. Kilmartin added a short summary description of the features of the treatment system including the monitoring wells, well pumps, trenches for the buried pipes, transfer lines, concrete pads, electrical service line, and the types of equipment in the trailer. Mr. Lindhult asked what is the flow rate of the system, and if there is a contingency plan if you get stall at cis-1,2 or vinyl chloride (VC)? Mr. Kilmartin explained that we are already at cis 1, 2, so what we are looking at is the presence of TCA, which is preferentially consumed by dehalobacter, and the ethenes PCE and TCE, which are preferentially consumed by dehalococoides. Unfortunately, the bacteria dehalococoides is inhibited by the presence of TCA. So the first thing will be to have dehalobacter reduce the concentration of TCA in the aquifer to the point where the dehalococoides can thrive and to help consume the ethenes. If we see stall for example at VC, we will perform a genetic test to see if the dehalococoides in our environment has the VC reductase gene that not all dehalococoides has. If not, we can purchase dehalococoides commercially that has the VC reductase gene and inject that to enhance our population with the ability to break down VC. Mr. Myers asked if the treatment system operated on a schedule on/off or is it constantly running, saying when he visited the trailer he didn't hear anything working in there. Mr. Kilmartin explained that at this stage of testing, the system is constantly working. It runs 24/7. There isn't a lot of sound, because the

extraction pumps are in the wells, below water, and the equipment in the trailer is quiet. At this point, relatively early in the program a technician visits the trailer and inspects conditions frequently; about three times per week to perform system checks and obtain samples to see how things are progressing. Later, maybe we will visit once or twice a week and later yet, after the amendments have been distributed throughout the aquifer, we will shut down the injection/distribution systems and let nature go to work on it. Mr. Roth asked why wait on the (biological) enhancement? Why go through all this if you could put them (the commercial bacteria stocks) in there and get it going. Mr. Kilmartin explained that the first step, that may be the longest step, will be to get the environment right for the bacteria, raising the pH of the water and driving to anaerobic conditions may take about six weeks. If we're lucky, and the bacteria populations explode, then there won't be any need to do any enhancement. Mr. Lewandowski pointed out that one of the things we've done here is to have installed a distribution system that would be compatible with other candidate remediation approaches. For instance, should bioremediation not work, or only partially work, there are other technologies like chemical oxidation, or even a small pump and treat system that could be installed with just minor modifications. But the basic infrastructure is in place to extract and reinject groundwater. Mr. Lindhult added that his concern is that lactate will not be able to drive the conditions enough in there to achieve anaerobic conditions. Mr. Kilmartin agreed that is something we will be monitoring closely. The oxygen in the hottest part of the plume there are actually pretty low now, barely above one milligram, but yes that may be the hardest part of this test. Mr. Lewandowski added that in planning this program, we have been working with the EPA scientists in Ada, Oklahoma who specialize in this technology. They have been advising us every step of the process. We have had that EPA resource working for us as well.

Mr. Frye stepped up once again to talk about Site 12. Using a repeat of the projected slide shown earlier, Mr. Frye pointed out the relationship between Site 2 and Site 12. Site 12 is our newest site. We refer to Site 12 as South Landfill. As mentioned earlier, Site 2 has been recognized as a site since the beginning of the CERCLA program here at Willow Grove in the early 1980's. From historical interviews and document searches, it was suspected that this area was a landfill in years past. From all of our investigations, we really didn't find anything substantial at Site 2, but we did recently find some drums and debris at Site 12 after responding to an EPA EPIC (Environmental Photographic Interpretation Center) survey of old aerial photographs from the area. A small CERCLA removal action was done to remove those drums and debris. About a year ago, while the Navy was performing the EM survey at Site 3 that Don Whalen described earlier tonight, we took the opportunity to also go to Site 12 and perform an EM scan. Results of the EM scan at Site 12 found a lot of buried metal debris looking pretty similar to Site 3 landfill results. That investigation helped us understand what was going on. It confirmed our suspicions that the historical landfill in this area was more in the area designated as Site 12 than Site 2. Now we have to go through the CERCLA process for Site 12; remedial investigation, feasibility study, proposed plan and record of decision, that we have kicked off this year. Using a series of projected slides of historical aerial photographs (in the handouts), Mr. Frye pointed out the features that helped us confirm even more that we are on the right path here. A summary of the progression of activities over the years as shown in the periodic aerial photographs was discussed, demonstrating part of the procedure used to arrive at the conclusion

to investigate Site 12 separately from Site 2. The next slide (also in the handouts) comes from the results of the EM survey performed last year. Dark red and dark blue areas are indications of some anomaly below the surface such as buried metal debris.

Mr. Frye mentioned that to start off our remedial investigation phase for this site we had a meeting back in February with EPA and PADEP to work out the scope of what we are going to do. We talked about test pits, surface soil samples, sediment samples, and soil borings. Right now, we are putting together a work plan to include the investigations discussed in February with the regulators. We will submit a draft of that for regulatory agency review through the spring and summer. The last slide shows the proposed schedule. Field activities for the Phase I remedial investigation are planned for later summer. Based on the findings from that, we'll see if a Phase II investigation is warranted that could be performed in the spring of next year.

Mr. Clark offered to clear up one question. I should know this already after spending eight hours in the February meeting, but when you mention surface soil samples, just to explain to everybody, in the test pits there will be soil samples taken at different levels, not just from the surface of the soil? And the field sampling team will screen different areas, obtaining a sample if they see something that indicates they probably should sample in that area using field judgment, correct? Mr. Frye agreed. We went through a lot of those details. Our intent with the test pits is to go down to the very bottom of any apparent waste disposal area. We assume we are going to find something, because the EM survey shows anomalies like at Site 3. We will use the excavator bucket to dig to the bottom of any waste we find, and as Chick mentioned, we'll take samples as we go down, pinpointing the sample location to where we see the worst evidence of contamination visually or by the PID (photo ionization detector). We'll also take some surface soil samples at areas away from the test pits or EM anomalies for ecological risk assessment reasons. For the animals that are out there, we're not too worried about soil well below grade, we're more concerned about the top two feet or so where rodents and worms, those organisms live. There are some areas that don't warrant a full test pit. In those areas we will obtain some surface soil samples. We'll also go to areas where there is no EM anomaly and obtain soil at varying depths using a hand auger soil boring just to make sure we don't have something there like a solvent or something that might have been dumped that wouldn't be associated with metal EM anomaly response.

Mr. Lewandowski announced that wraps up presentations for tonight. As always we're open to any questions or comments from RAB members or the public that's here visiting. We are always open for suggestions on improvements, are the presentations hitting the mark, are they technical enough, and are they clear enough? Like with Site 12, we're trying to make our presentations more graphic, add more pictures because they say a picture is worth a thousand words. And we want to keep the meetings short, so we are using photos and graphics in place of a thousand words.

Mr. Myers asked about the status of contamination coming onto Base property from the eastern part of the Township, across Route 611? Mr. Roth clarified the area as the former Kellet Aircraft. Mr. Lewandowski answered that we have nothing new on that. The Navy is in the process of preparing our land use control plan for Site 1. We call it a land

use control remedial design. We are in the process working with EPA and PADEP to put that together. The record of decision explains what we want to do, and the RD (remedial design) tells how we're going to do it. Mr. Lindhult stated that the presentations were very good. Well done. Mr. Lewandowski added that we will keep trying to improve them. If you have any suggestions at any time, you have our e-mail and telephone numbers. Pick up the phone or send e-mail. We're happy to hear from you.

Mr. Lewandowski proposed that the next RAB meeting be held on **July 8, 2009 at 6:00 PM.**((NOTE: Date changed to August 5, 2009)) That would put it approximately in the middle of our public comment period for the Site 2 Proposed Plan. A brief discussion of the proposed date resulted in agreement among those in attendance.

Mr. Lewandowski thanked everyone for coming, informing all present that they had three hours left to submit their tax returns and adjourned the 38th Restoration Advisory Board meeting.

**NAS JRB
WILLOW GROVE**

**RESTORATION
ADVISORY BOARD
(RAB)**

April 15, 2009
Meeting Number 38

Agenda **BRAC PMO**

- Confirmation Investigation for CERFA Category 3 Parcels
- Air Force Remedial Action of Soil North of the Runway
- Site 2 – Antenna Field Landfill RI Report, Proposed Plan and Record of Decision
- Site 3 – Ninth Street Landfill Investigation Status
- Site 5 – Fire Training Area Remediation Status
- Site 12 – South Landfill Remedial Investigation
- RAB Member Questions and Comments

Confirmation Investigations for CERFA Category 3 Parcels **BRAC PMO**

LEGEND

- CATEGORY 1 - AREAS OF NO KNOWN RELEASE AND/OR DISPOSAL (ENVIRONMENTALLY READY FOR TRANSFER) 26,622,919 SQ. FT. APPROXIMATELY 616 ACRES
- CATEGORY 2 - AREAS OF KNOWN RELEASE AND/OR DISPOSAL 7,363,000 SQ. FT. APPROXIMATELY 170 ACRES
- CATEGORY 3 - AREAS OF POTENTIAL RELEASE AND/OR DISPOSAL (REQUIRES FURTHER STUDY) 3,025,811 SQ. FT. APPROXIMATELY 69 ACRES
- NAS JRB WILLOW GROVE BOUNDARY

SCALE IN FEET: 0, 1,400, 2,800

3

Confirmation Investigations for CERFA Category 3 Parcels **BRAC PMO**

DOCUMENT RESEARCH

ASBESTOS

- 1997 Station-Wide Asbestos Survey, 89 Buildings.

LEAD PAINT

- Residential: 1996 Lead Management Plan for Senior Enlisted Quarters/Officer Housing.
- Non-Residential: 1998 Water Tank 108 Soil Removal and Disposal report.

TANKS

- 1996 Survey, Inspection, Test; Aboveground and Underground Storage Tanks at NAS JRB Willow Grove.
- Individual UST Closure Reports

SPILLS

- Spill Reports (AFFF)

MISCELLANEOUS

- Investigation reports
- E-mails
- Sample analysis results
- File memos
- Blueprints
- Historical Aerial photographs

4

Confirmation Investigations for CERFA Category 3 Parcels

BRAC PMO

CERFA CATEGORY 3 SITE FIELDWORK MATRIX

SITE	DESCRIPTION	DH/GPR SURVEY	HAND AUGER	DIRECT PUSH	SOIL SAMPLES	LAB ANALYSIS	NOTES AFTER TETRA TECH TABLE TOP INVESTIGATION
10B	Former water tower						Cased and sampled, but Pb in soil above 600 mg/kg non-residential limit.
Former Sig 30 and Old Flight Line	Buildings 22, 29, 70 and former hangar, etc.						Visual evidence of possible UST found. Ed Bernas also investigating historical record of Fuel Farm No. 1 west of building 20.
15A	Old boiler building						ACHM present, good condition.
15B	Former maintenance vault						ACHM present, good condition.
21	Paved shop						Pb found in soil.
20	Transformer building						Artificially Ignition Vault. No file information found.
70	Civil works						UST No. 20. Properly closed.
82S, 82N	Control tower						Check DoD Web site of emerging contaminants. Wait for Navy guidance on AFPR. Spill reported initially reached soil.
164	Building at Marine Corps Reserve Center						Possible health field. Found drawing of location of crane field.
181, 184	Hangar area						Three AST removed? Props. closure not confirmed.
175	UST 14 (Tank 018)						Confirmation samples less than action levels. Properly closed.
660, 634	Hangar area						Wait for Navy guidance regarding AFPR. Reported fuel spill on "grass west."
681							AST and UST properly closed.
Outside Fence line Maze	Flight approach clear zone, Concrete slab						Aerial photos in 1970's show scattered vehicles and debris on base soil surface. No further file information found.
Aviation	Aviation						See report for records.
176, 177, 178, 663	Army Reserve vehicle maintenance facility						UST No. 019 removed. Contaminated soil removed.
16	Former skidpad drying beds						Properly closed.
104, 115	LCM Storage						ACHM in Building 115.
Building 109	Quarters 7						Pb and Asbestos inspections performed. See Report Table.
63	Quarters A Barn						No Pb or ACHM inspections performed.

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Air Force Reserve Remedial Action

BRAC PMO

Point of Contact

Bill Downs (478) 327-1073

6



7



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Site 3 - Ninth Street Landfill Investigation Status

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- Phase I Remedial Investigation 1991
- Phase II Remedial Investigation 1996
- Phase II Follow-On Activities
- Test Pit Investigation 2007
- Electromagnetic Geophysical Survey 2008
- Landfill Delineation 2009

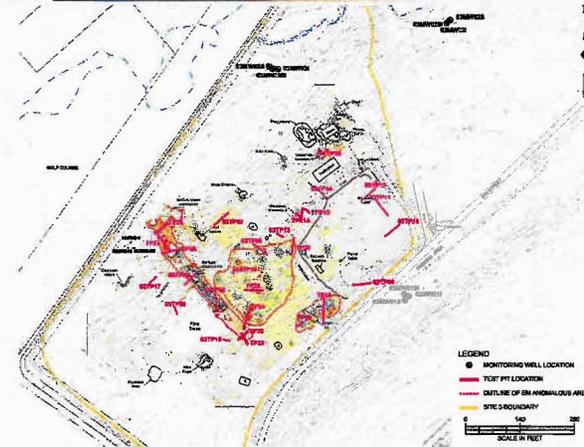


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Site 3 - Ninth Street Landfill Investigation Status

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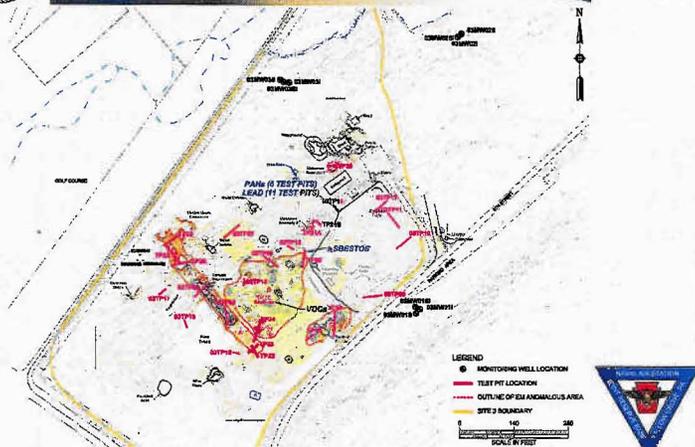


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Site 3 - Ninth Street Landfill Investigation Status

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Site 3 - Ninth Street Landfill Investigation Status

BRAC
PMO

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



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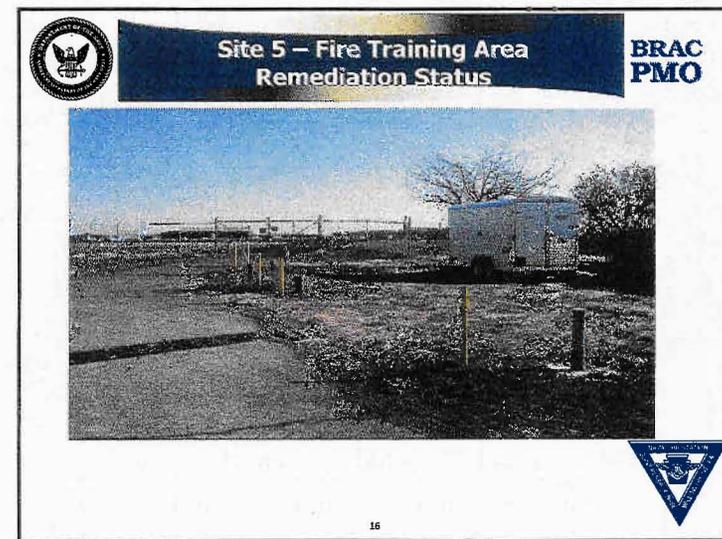
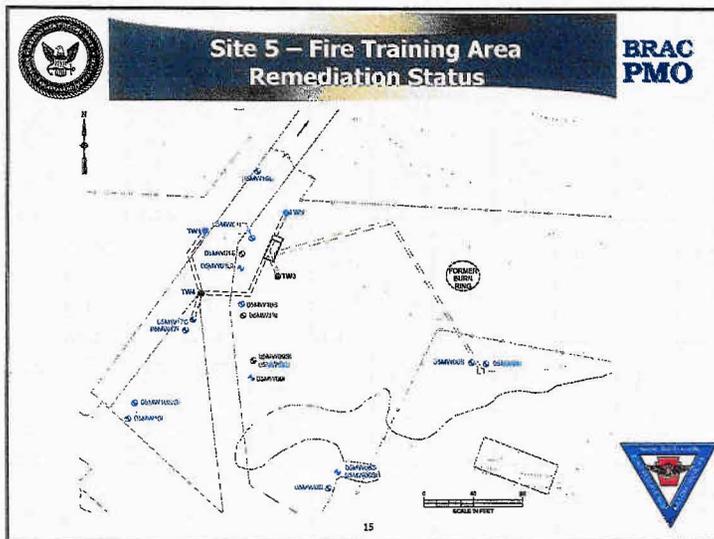


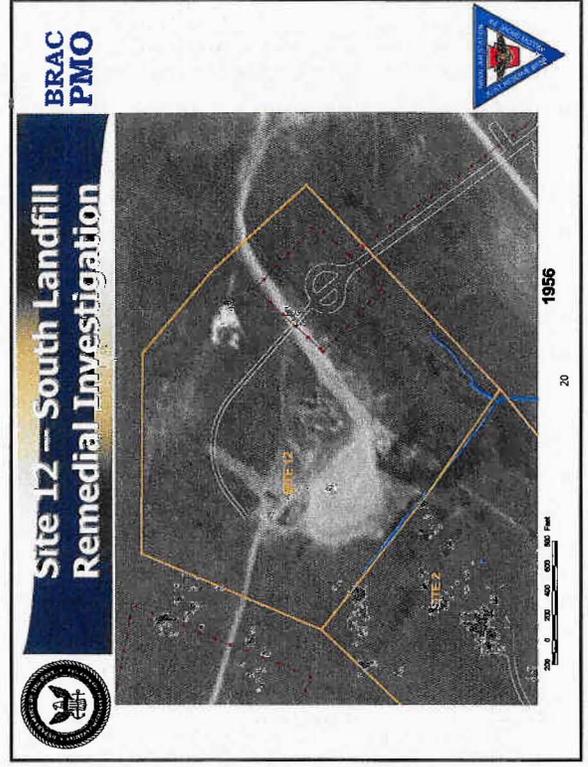
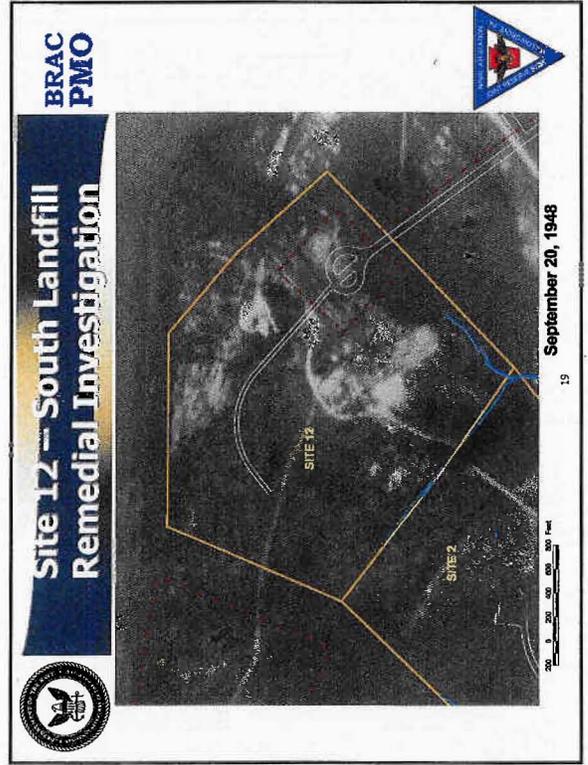
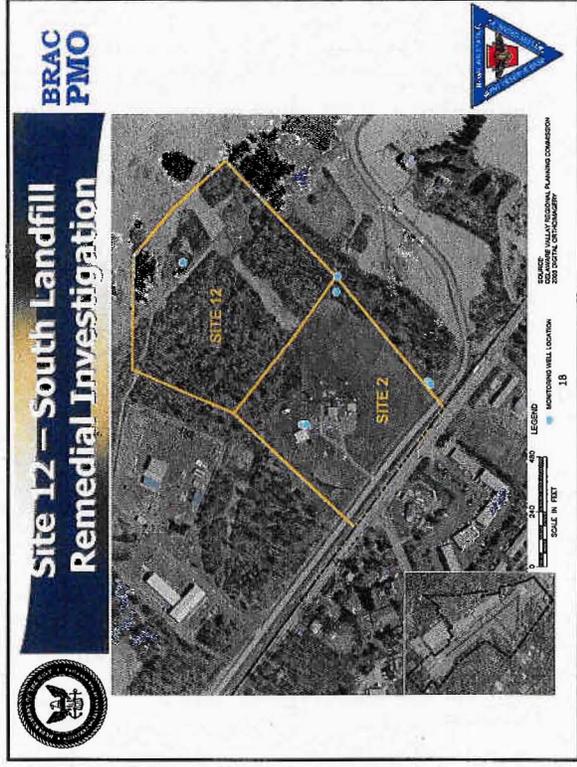
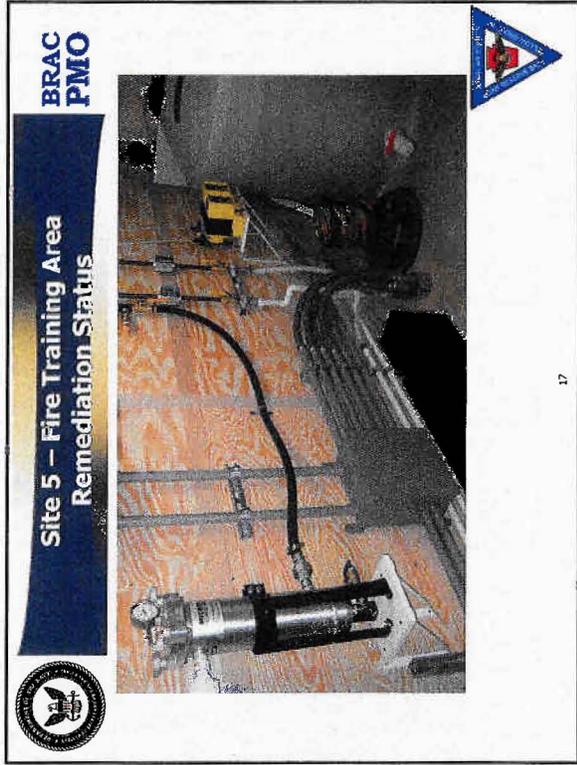
**Site 5 – Fire Training Area
Remediation Status** BRAC PMO

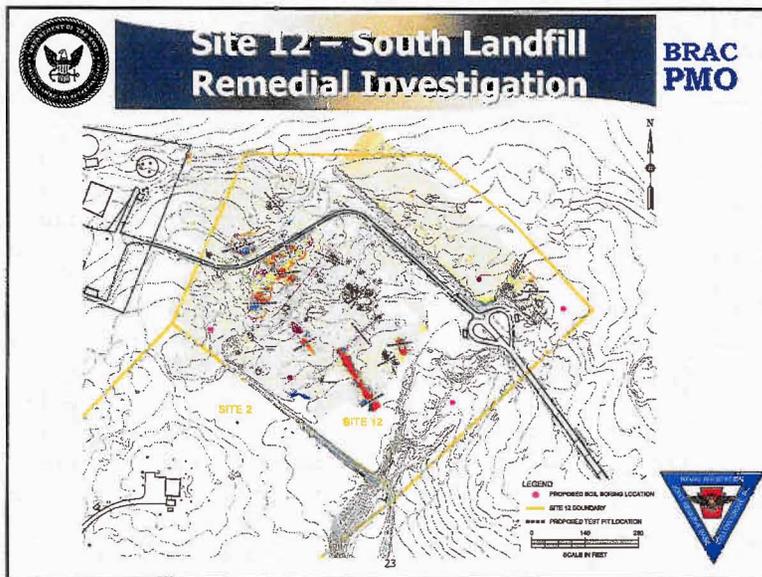
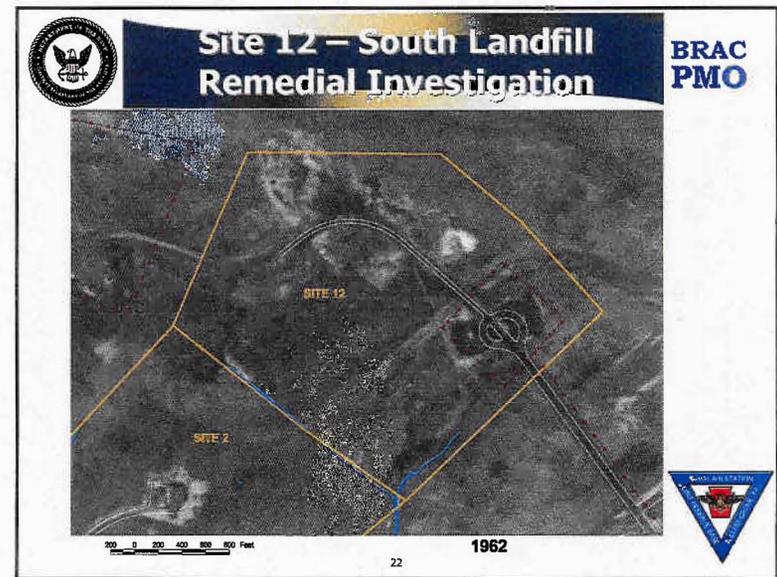
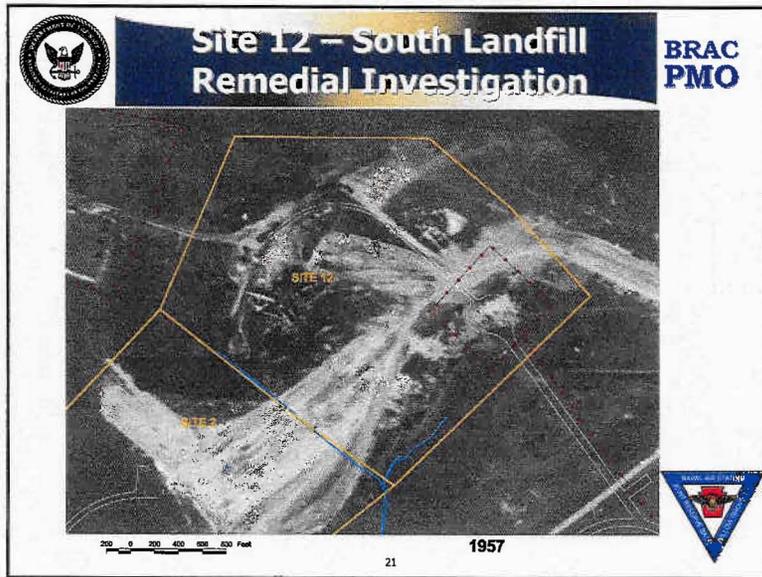
Bioremediation Pilot Test

- System Is Installed And Operating April 7, 2009
- Currently Adding Sodium Bicarbonate To Raise The pH Of The Groundwater
- Lactate To Be Added As Substrate
- Evaluate Need For Bioaugmentation

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- Site 12 – South Landfill Remedial Investigation** BRAC PMO
- Site 12 Sampling and Analysis Plan (SAP) August '09
 - Field Investigations/Sampling and Analysis August '09
 - Phase I Remedial Investigation Report January '10
- 24



RAB Member Questions Closing Remarks

**BRAC
PMO**

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



Willow Grove ARS, PA – POL Site (ST-01)
 Air Force Reserve Command
 Restoration Advisory Board Meeting



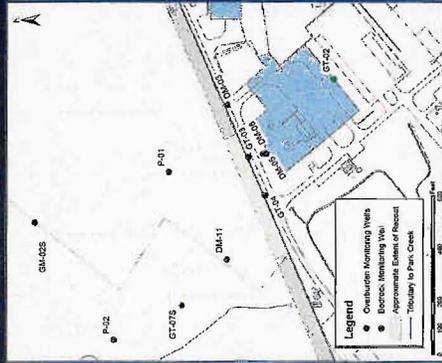
Wednesday, April 15, 2009



Points of Discussion

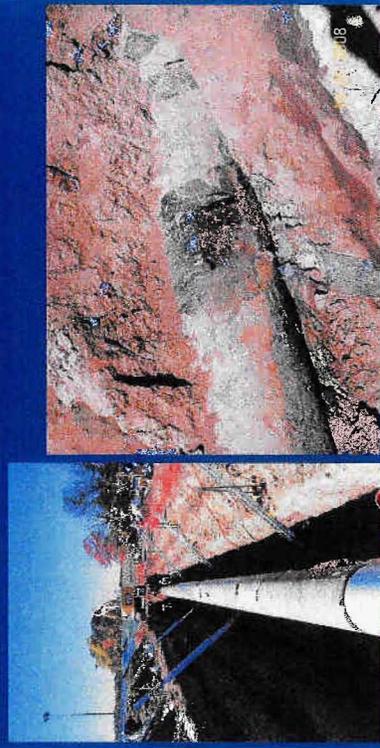
- Site Excavation
 - ROW Fall 2008
 - ROW Spring/Summer 2009
 - POL Site Excavation Spring/Summer 2009
- Soil Handling and Treatability Study
 - Phase I - Fall 2008
 - Phase II - Spring/Summer 2009
- Biosparge System
- Compliance Groundwater Monitoring
- Future Plans for the POL Site

Fall 2008 ROW Excavation



- Part of the area delineated by pipeline company for repair/recoat
- Consistent with areas investigated in 2006 and 2007
- Excavation and recoat completed from mid-October to early December 2008

Fall 2008 Pipeline Recoat



Spring/Summer 2009



- Site Preparation
 - Area Access
 - Wetlands Delineation
 - Water and Sediment Management Facilities
- ROW Excavation and Pipeline Recroat
- Soil and Water Management
- Additional Excavation



07/2008

Spring/Summer 2009



Soil Handling and Storage

October 12, 2008



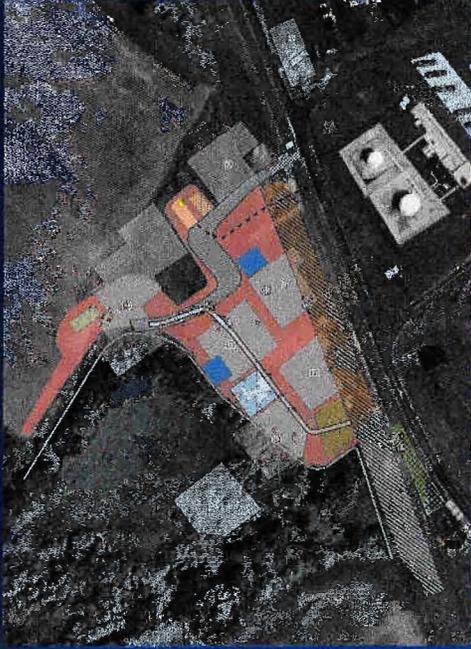
November 23, 2008



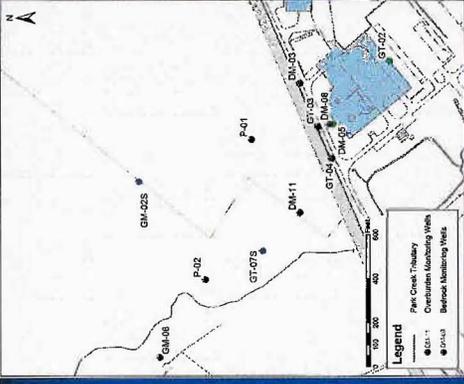
Soil Treatability Study

- Evaluated Two Treatment Technologies
 - Composting
 - Biopiles
- Treatability Study Findings
 - Study successfully demonstrated that vapor extraction will reduce VOC levels in soils
 - Low levels of contamination in pilot study samples
 - Pilot study and field observations confirmed discrete zones of heavily contaminated soil are within area of interest - hot spots
 - Volume of excavated soil (~500 yd³) and access to a large enough treatment area are limiting factors
- Other Factors
 - Transportation costs
 - Analytical requirements for reuse
- Recommendation — Offsite Disposal

Biosparge System



Compliance Monitoring



- Quarterly sampling to evaluate contamination in groundwater
- Samples collected from eleven overburden and one bedrock monitoring well
- Concentrations of jet fuel COCs lower than PAD/EP action levels
- Groundwater contamination limited to biosparge treatment areas

Anticipated Timeline

- Planning for upcoming bid work
- Implement next phase of removal in ROW with dig and haul of soil - mid-June to end of July 2009
- Implement additional excavation with dig and haul of soil in area adjacent to ROW - August 2009
- Conduct TRD of soil spilled soil - September 2009
- Site restoration
 - Off Base area - September 2009
 - Hangar area - November 2009
 - Gracie Park driveway repair - November 2009
- Removal and disposal reporting - October through December 2009
- Continue implementation of groundwater treatment with biosparge system
 - Area C - March through August 2009
 - Area D - October 2009 through March 2010

Questions and Answers



DEPARTMENT OF THE NAVY
BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE, NORTHEAST
4911 SOUTH BROAD STREET
PHILADELPHIA, PA 19112-1303

5090
Code BPMO NE/RL
Ser 08-202
September 5, 2008

Ms. Lisa Cunningham
Remedial Project Manager (3HS11)
U.S. Environmental Protection Agency, Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Ms. Cunningham:

The Navy is pleased to forward the Interim Record of Decision (ROD) for Site 1 Groundwater, Operable Unit 3 (OU 3), at the Naval Air Station Joint Reserve Base Willow Grove, PA.

The soil at Site 1, Privet Road Compound, has been addressed by a separate operable unit, Operable Unit 1 (OU 1).

If you have any questions, please do not hesitate to contact me at (215) 897-4908.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert F. Lewandowski".

Robert F. Lewandowski, P.E.
BRAC Environmental Coordinator
By direction of BRAC PMO

Enclosure:
Interim ROD Site 1 Groundwater, OU 3

Copy to:
G. Abarca, NASJRB Willow Grove
C. Frye, NAVFAC Midlant
C. Clarke, PADEP
R. Turner, TtNUS