



NAVAL AIR STATION JOINT RESERVE BASE (NAS JRB) WILLOW GROVE Restoration Advisory Board (RAB) Meeting Minutes RAB Meeting No. 41

Meeting Date: March 17, 2010

Meeting Time: 6:00 p.m.

Meeting Place: Horsham Township Public Library

	<u>Name</u>	<u>Organization</u>
Attendance:	Eric Lindhult (R)	RAB Member
	Liz Gemmill (R)	RAB Member
	Kaye Maxwell Martin (R)	RAB Member
	Peter Choate (R)	RAB Member
	Steve Nelson	Montgomery County and Horsham LRA
	Bob Lewandowski (R)	Navy, BRAC PMO
	Jeff Dale (R)	Navy, BRAC PMO
	Bill Heil (R)	Navy, Willow Grove
	Hal Dusen (R)	Navy, Willow Grove
	Richard Frattarelli (R)	PA Air Guard
	William Hudson	USEPA
	Charles Clark (R)	PADEP
	Jessica Kasmari (R)	PADEP
	Don Whalen	Tetra Tech
	Russ Turner	Tetra Tech
	(R) Designates RAB Member	

Bob Lewandowski introduced himself, explaining his function as NAS JRB Willow Grove environmental coordinator for the Navy's BRAC (Base Realignment and Closure) office in Philadelphia, and welcomed everyone to the 41st NAS JRB Willow Grove Restoration Board (RAB) meeting.

Mr. Lewandowski applauded the dedication of those choosing to be present at our RAB meeting despite the beautiful weather and it being Saint Patrick's Day. Thanks for coming out. The agenda tonight shows us going to about 7:30. Things should move pretty quickly. The Air Force does not have a presentation. The Navy is going to bring the RAB up to speed on some of the issues we have going on.

Mr. Lewandowski introduced Don Whalen to give an update on the Site 12 remedial investigation. Referring to a projected slide, Mr. Whalen explained that Site 12- South Landfill, is adjacent to the area referred to as Site 2 – Antenna Field Landfill. Historical information from records and former employee interviews, suggest that there were active landfill operations in this area from 1948 through 1960. The method of disposal reported was burning and burying of waste. The file information indicates that there was a wide variety of waste disposed, mostly general refuse, but also paint wastes, and possibly solvents, among other things. Very little

evidence of landfill activities was found at Site 2. However, an electromagnetic (EM) geophysical survey performed at Site 12 in April 2008 found five anomalies and six linear features shown on the projected slide, indicating the probable presence of buried wastes. Test pits were excavated in January 2010 into the suspected buried wastes indicated by the EM survey, confirming the presence of buried wastes and suspected past landfill activities. The Navy took about 60 soil samples from 15 test pits and ten soil samples from five soil borings, as well as collecting surface water and sediment samples at eight locations indicated on the projected slide.

Referring to a series of projected slides of photos, Mr. Whalen described the types of materials encountered in the test pits and explained that items ranging from recognizable aircraft parts to metal scrap to unidentifiable burned and buried trash and glass or ceramic kitchen items were unearthed. The corresponding soil was sampled for laboratory analysis. Laboratory data was being validated at the time of the RAB meeting, with a draft Phase I report due out in April. If there is a need to perform groundwater investigations, the Navy will do that in a Phase II investigation.

Mr. Lindhuldt asked what the preliminary results indicate in general? Was the waste found associated with jet fuel? Russ Turner replied that there were high concentrations of petroleum-type compounds like PAHs in asphalt and maybe other things like jet fuel, but we do not know yet. We were looking for the worst material we could find to sample, and we took samples for dioxins in areas where burning looked probable. Mr. Whalen added that some high metals results could be expected based on the nature of the waste.

Mr. Lewandowski asked if the EM survey here was found to be as accurate as the survey performed at Site 3 for correlation of EM waste anomaly to the actual finding of waste in the test pit? Mr. Whalen replied that in every test pit, evidence of waste was encountered in the area indicated by the EM anomaly. We extended the excavation of each test pit until we didn't find any more waste, and that correlated very well with the results of the EM survey also.

Mr. Lindhuldt asked about the EM survey linear anomalies, were they more or less open trenches where they just kept dumping until they covered it over? Mr. Whalen replied yes it looks like that. It looks like trenches they dug and pushed wastes into, burned, then just covered over.

Mr. Lewandowski introduced Jeff Dale to give a summary of Site 3 groundwater sampling. Mr. Dale began with a reminder of the location of Site 3 with the golf course nearby. Pointing out the locations of the anomalies identified in the EM geophysical survey, Mr. Dale explained that test pit samples from those same areas encountered a range of contaminants, some of which exceeded screening criteria for possible impact to groundwater. Based on simple analysis of the data on hand, the Navy acknowledged that there were no wells placed in the area downgradient to monitor potential impacts to groundwater. Rather than proceed with an RI report with that big gap in it, the Navy agreed with EPA and PADEP to hold off on the report while monitoring wells were installed and sampled as shown on the projected slide. Laboratory analytical results from the new wells are in. The results show similar groundwater quality to the wells that already existed at Site 3, low levels of chlorinated solvents slightly above drinking water standards. We

did not find any fuel-related compounds in groundwater that we found in some of the soil samples upgradient at concentrations above the impact to groundwater criteria. The soil to groundwater criteria are conservative, but in this case we were able to conclude that the soil in the area of these test pits is not impacting downgradient groundwater. The Navy will finalize the Site 3 remedial investigation and feasibility study this year. Next year we will have a proposed plan and record of decision for Site 3 soil and groundwater actions.

Mr. Lindhult asked if the concentrations are significant enough that you anticipate some sort of remediation will be required, or you're not sure? Mr. Dale replied that the Navy does not anticipate active remediation. The highest concentration found in groundwater is less than two times the drinking water standard. So an active remedy would not be cost-effective. Mr. Lindhult agreed. Mr. Dale added that the decision has not been made yet. Mr. Choate asked about the Proposed Plan for (fiscal) year '11. What's the relationship with the Navy leaving in March or April of '11? Mr. Lewandowski replied that The Navy BRAC office that I work for, with Jeff also working for our office, isn't leaving. Our office will be there through the duration of the cleanup. Even though the aircraft and sailors and others are leaving the Base in '11, we're going to continue working on the remediation at the Base. We'll probably have to establish some sort of office at the facility, what they call a caretaker office, until the property is ready for transfer. Mr. Choate mentioned that he is on the environmental committee of the Land Reuse Authority and asked what will your relationship be with the Horsham Land Reuse Authority when the Navy's not there (leaves the Base)? Mr. Lewandowski offered that the Navy would be happy to meet, sit down and talk in more detail and pore over maps, whatever it is we can do (to help the LRA). The Navy will still be here with the Navy BRAC office, but the active or reserve units will be moving on.

Mr. Dale used the projected slide to orient the group with the Site 5 – Fire training Area location south of Site 3, along Horsham Road, north of Sites 2 and 12 we were talking about previously. The Site 5 groundwater bioremediation pilot system uses sodium bicarbonate to raise the pH of groundwater to a range more suitable for the naturally occurring bacteria and then by feeding the bacteria sodium lactate, which is essentially a food grade sweetener, promotes growth of the natural bacteria living in the aquifer to break down the chlorinated solvent contamination in situ. The Navy initially recirculated groundwater, adding amendments, from April through June of 2009. Groundwater samples collected in July and October showed that ideal conditions were not achieved. We had not added enough sodium lactate to reduce the oxygen content sufficiently for optimal growth of the bacteria. So in February the Navy spoke with EPA and the State, with all agreeing that we have the correct system in place, but we really didn't add enough food. From February through the current date (with plans to continue through June) we have been recirculating groundwater and injecting the sodium bicarbonate and sodium lactate amendments to raise the pH and to provide a ready supply of nutrients for the existing bacteria. Referring to a projected slide of the site, Mr. Dale explained the injection and extraction well network composed of new and some older wells at Site 5 and described the treatment trailer that contains mixing tanks, dosing pumps and controls. Referring to a series of projected slides of graphs of the analytical results through last October, Mr. Dale explained that the results indicate that we were able to change the chemistry of the aquifer in the manner we hoped, pH was increased to about 6, but not above as we would have liked, dissolved oxygen (DO) was reduced, but not to

the extent we would want to see, oxidation reduction potential was also reduced, but not to a level below zero in most wells as we had hoped. The natural bacteria had been stimulated to reproduce, but the increased biological activity was not sustained. In summary, we added the amendments last summer and we quickly got results with ORP down to about minus 50, but then conditions returned to normal (like pre-injection conditions), so we concluded that we had not added sufficient substrate in the first injection. The naturally occurring carbon in this groundwater unit is deficient. So this spring we're adding up to about four to six times the amount of sodium lactate injected last summer, to increase the microbial cell count. If successful, at the end of the current (second) injection, hopefully we'll have enough information to conclude that this technology will work, and we'll have a Proposed Plan and Record of Decision done by early next year. Any questions on Site 5?

Mr. Lindhult asked if with the increase in lactate that you're seeing, have you seen any increase in dissolved iron? There's a fair bit of natural iron in the groundwater. Mr. Dale replied that it is probably going to rise in the test zone where we have reducing conditions, but we haven't seen it yet. Mr. Lindhult asked if the Navy is analyzing for natural attenuation parameters? Mr. Dale replied yes, we are monitoring for a whole suite of parameters – it is what you would call the standard list, breakdown products from the chlorinated solvents, including methane, ethene, ethane, carbon dioxide, iron, nitrate, sulfate, etc. Mr. Lewandowski asked if increasing iron wasn't one of the concerns the EPA ADA lab had mentioned? Was the concern about clogging the well screen if we did see increasing iron beginning to precipitate out? Mr. Turner replied that yes, EPA had mentioned that concern, so we installed an industrial-type bag filter on the inlet to the treatment plant. So when we reach reducing conditions we may precipitate elemental iron which will be caught in the bag filter. After one month of operation, we are beginning to see the pressure drop across the bag filter beginning to rise (indicating collection of solids in the bag). We are not sure what is causing the pressure drop increase, but it is something we are watching. We ordered extra replacement filter bags in case they are needed. Mr Dale added that you often get just what you are trying to promote – a lot of bacterial growth. Adding too much nutrient could cause the wells to plug-up also. We haven't had that problem yet, but is usually of more concern than the iron. Mr. Lindhult asked if the bag filter is installed downstream of the bicarbonate injection point. Mr. Turner replied that yes it is.

Mr. Lewandowski introduced Don Whalen to speak about the investigation the Navy did at the CERFA areas of interest. Mr. Whalen explained that CERFA stands for Community Environmental Response Facilitation Act. The Navy is required to identify uncontaminated property scheduled for transfer. A report completed in 1996 divided the Base into three categories. Referring to a projected color coded figure of the Base, Category 1 was coded in white – areas of no known release and/or disposal (clean areas); Category 2 in red - areas of known release and/or disposal (dirty areas); and Category 3 areas were coded yellow, indicating insufficient evidence to decide if there had been a release or not.

Mr. Whalen mentioned the first step in the investigation process of the Category 3 areas of interest was further document search/review. Referring to a projected slide showing an investigation matrix for remaining Category 3 areas of interest, Mr. Whalen explained that there

were only five areas of interest remaining for further investigation after the in-depth document search and review. Mr. Whalen summarized the layout of each area of interest investigated, summarized the sampling activities performed, mentioned any lab analysis underway, and gave a brief summary of field observations. Any Questions?

Charles Clark remarked that finding no evidence of solvents in the leach fields means the Navy got lucky because these features historically are often associated with problems. Mr. Turner explained that field evidence shows no signs of gross contamination you could see or smell, but the analytical laboratory will tell if there is anything. Mr. Lewandowski asked if anyone in the community would like to receive a copy of the CERFA areas of interest investigation report. Mr Lindhuldt requested a copy to be e-mailed to him

Mr. Lewandowski mentioned that Lisa Cunningham conveyed her apologies that she could not be here to present an update of the Site 1 off-Base groundwater source investigation. Bill Hudson from EPA has agreed to give a short update. Mr. Hudson explained that he had a very short update presentation from Lisa. Soil samples from the former Kellett Aircraft site have been collected, analyzed and data validation performed. There is a draft investigation report developed that is under review by the Assessment group at EPA. Once the draft investigation report is reviewed and the data interpreted, finalized and so forth, then Lisa will provide an update of the findings.

Mr. Clark asked if they encountered shallow groundwater when they did their borings, or is there just soil information available? Mr. Hudson could not add more. There were no more questions.

Mr. Lewandowski explained that the agenda for the evening was complete a little ahead of schedule and invited any comments or anything else RAB members would like to bring up or ask about, we'd be glad to try to answer those questions now. There were no further questions or comments, so after a brief discussion of individuals schedule conflicts/availability, Mr. Lewandowski confirmed that the next RAB meeting will be held on June 16, 2010 and thanked everyone for coming on such a beautiful evening. The meeting adjourned.





**NAS JRB
WILLOW GROVE**

**RESTORATION
ADVISORY BOARD
(RAB)**

March 17, 2010
Meeting Number 41




Agenda

- Welcome Community RAB Members/Announcements
- Site 12 –South Landfill Remedial Investigations
- Site 3 – Ninth Street Landfill Groundwater Samples
- Site 5 – Fire Training Area Groundwater Pilot Investigation Amendment Reinjection
- CERFA Areas of Interest Investigation
- Site 1 Off-Base Groundwater Source Investigation
- Closing Remarks



2




Site 12 – South Landfill

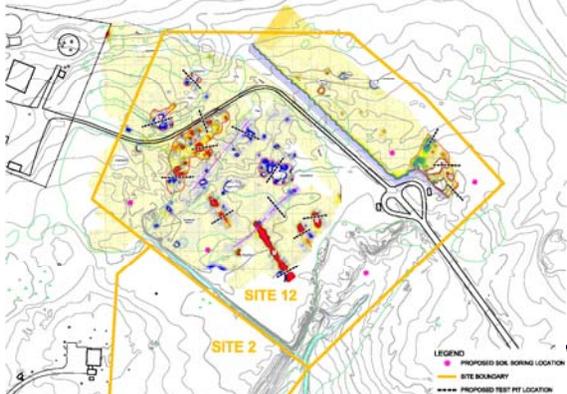


3

SOURCE: SEABOARD VILLAGE REGIONAL PLANNING COMMISSION
2008 DIGITAL ORTHOPHOTOGRAPHY




Site 12 – South Landfill Remedial Investigation



4





Site 12 – South Landfill Test Pits January 2010

BRAC
PMO



9



Site 12 – South Landfill Test Pits January 2010

BRAC
PMO



10



Site 12 – South Landfill Actions

BRAC
PMO

- Field Investigations Test Pits, Soil Borings, Soil Samples, Surface Water/Sediment Samples Completed January '10
- Approximately 60 Soil Samples From 15 Test Pits
- Ten Soil samples from Five Soil Borings
- Eight Surface Water and Sediment Samples
- Laboratory Analysis and Data Validation Completed February/March '10
- Phase I Remedial Investigation Report April '10
- Groundwater Investigation Will be Based on Soil Results



11



Site 3 - Ninth Street Landfill

BRAC
PMO



12



Site 3 - Ninth Street Landfill Investigation

BRAC
PMO

- 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
 - Ecological Risk Assessment Samples 2009
 - 03MW09 Wells Installed January 2010

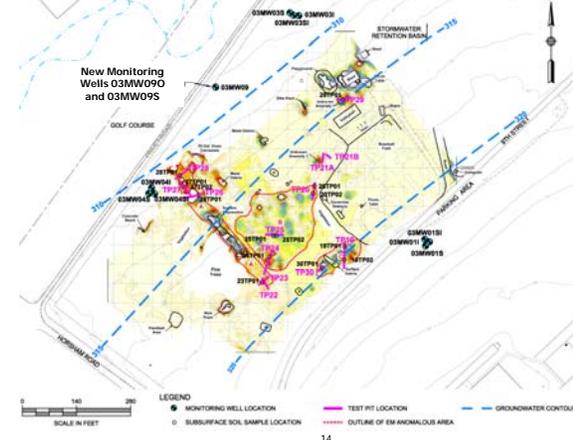


13



Site 3 – 9th Street Landfill Investigation Status

BRAC
PMO



14



Site 3 - Ninth Street Landfill Next Steps

BRAC
PMO

- Draft Remedial Investigation Report anticipated April '10
- Feasibility Study Report FY '10
- Proposed Plan FY '11
- Record of Decision (ROD) FY '11



15



Site 5 – Fire Training Area

BRAC
PMO



16



Site 5 – Fire Training Area Remediation Status

BRAC
PMO

Groundwater (OU 2) Bioremediation Pilot Test

- System Installed and Operating April 7, 2009
- Addition of Sodium Bicarbonate to Raise the pH Completed Week of June 1, 2009
- Substrate Addition Completed Week of June 26, 2009
- Groundwater Analysis July and October 2009
- Interim Status Memorandum January 2010
- Amendment Injection and Monitoring February 2010

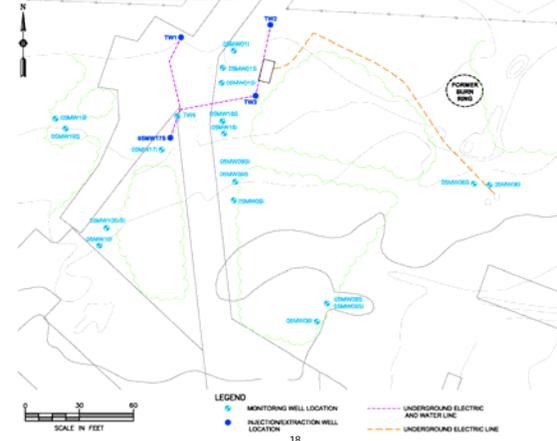


17



Site 5 – Fire Training Area Groundwater Pilot Investigation Status

BRAC
PMO



Site 5 – Fire Training Area Remediation Status

BRAC
PMO



19



Site 5 – Fire Training Area Remediation Status

BRAC
PMO



20



Site 5 – Fire Training Area Remediation Status

BRAC
PMO



21



Site 5 – Fire Training Area Remediation Status

BRAC
PMO



22



Site 5 – Fire Training Area Remediation Status

BRAC
PMO



•Substrate Tanks



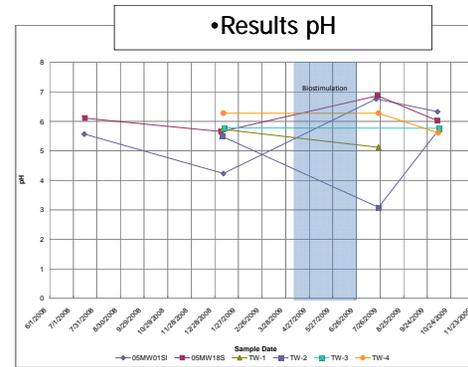
•Source: Tetra Tech

23



Site 5 – Fire Training Area Remediation Status

BRAC
PMO

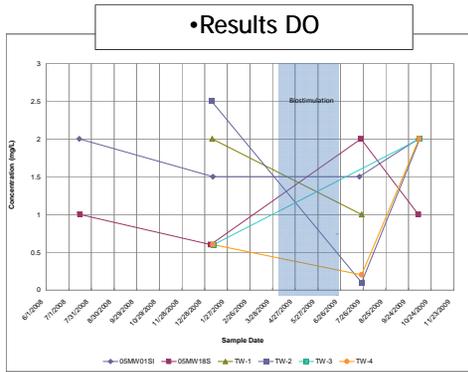


24



Site 5 – Fire Training Area Remediation Status

BRAC
PMO

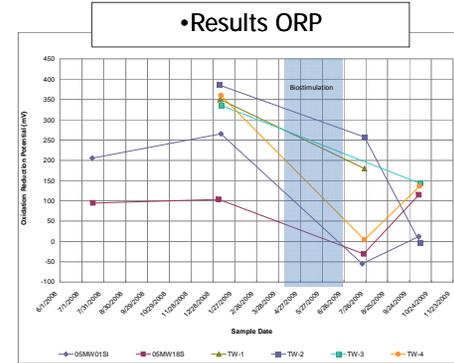


25



Site 5 – Fire Training Area Remediation Status

BRAC
PMO



26



Site 5 – Fire Training Area Next Steps

BRAC
PMO

- Injection of Amendments Resumed February '10
- Continue Injection/Monitoring Through June '10
- Proposed Plan FY '10
- Record of Decision (ROD) FY '11

27



CERFA Areas of Interest

BRAC
PMO



28



CERFA Areas of Interest

BRAC PMO

SITE	DESCRIPTION	Notes after Tetra Tech Table Top Investigation	ACTION REQUIRED	HAND	DIRECT PUSH BORINGS	SOIL SAMPLES	PACM SAMPLES	LAB ANALYSIS	DECISION STATEMENT
Septic Systems									
164	Building in Marine Compound	Abandoned septic system. Tank and soils sampled for SVOCs in 1997. No detections. Historical activities at bldg. not known.	Subsurface soil samples to determine if release has occurred based on ACT 2 standards.		2	2		VOC, SVOCs	If sample results less than Act 2 standards, then No Action; otherwise, team will meet to discuss future action.
118	Ground Electronics	Abandoned septic system. Tank and soils sampled for SVOCs in 1997. No detections. Tank encountered by excavation contractor in 2001.	Subsurface soil samples to determine if release has occurred based on ACT 2 standards.		2	2		VOC, SVOCs	If sample results less than Act 2 standards, then No Action; otherwise, team will meet to discuss future action.
Old Flight Line									
Former Bldg 20 and Old Flight Line	Buildings 22, 29 and former hangar, etc.	Visual evidence of possible UST found. Ect Barnes also investigating. Historical record of "Fuel Farm No. 1" west of building 20 with four aviation fuel USTs. Blueprint dated 1959 shows plans for removal of tanks.	Subsurface soil samples at accessible former tank locations.		4	4		VOCs, SVOCs	If sample results less than Act 2 standards, then No Action; otherwise, team will meet to discuss future action.
15A	Old boiler building	Asbestos inspection performed. ACM in good condition. CERFA notes boiler blow down pipe discharged to ground surface.	Surface soil sample at boiler blow down.	1		1		SVOC, metals	If sample results greater than Act 2 standards, then further study; otherwise, NFA.
Miscellaneous									
188, 129	LOX Storage	ACM in Building 129. To be transferred to Army and demolished.	Sample external traps PACM mentioned in CERFA report.				1	asbestos	



- ## CERFA Areas of Interest
- BRAC PMO
- Sampling Completed in January 2010
 - Data Received in February 2010
 - Draft Report of Results of Investigation Due April 2010
- 
- 30



- ## RAB Member Questions Closing Remarks
- BRAC PMO
- RAB Member Questions/Suggestions
 - Document availability at Horsham Township Library and on line
 - Next Meeting Date
- 
- 32