Former Williams Air Force Base (AFB)
Restoration Advisory Board (RAB)
Meeting Minutes

August 26, 2008, 7:00 p.m.

Highland High School
4301 E. Guadalupe Rd.
Gilbert, AZ

Attendees:

Mr. William Lopp	**Air Force Center for Engineering and the Environment (AFCEE)/Base Realignment and Closure (BRAC) Environmental Coordinator (BEC)/Air Force Co-Chair**
Mr. Don Atkinson	**Arizona Department of Environmental Quality (ADEQ)**
Mr. Bob Peeples	**ADEQ**
Mr. Tom Zuppan	**RAB Member**
Ms. Beverly Selvage	**RAB Member**
Mr. Jim Holt	**RAB Member**
Ms. Jean Humphries	**RAB Member/Arizona State University**
Mr. Dennis Orr	**RAB Member/Phoenix-Mesa Gateway Airport**
Mr. Dennis Lundquist	**AFCEE**
Ms. Amber Cargile	**Cargile Communications**
Mr. Jay Harbin	**URS Corporation**
Mr. Ed Mears	**BEM Systems**
Mr. Philip Price	**BEM Systems**
Mr. Jim Husbands	**Booz Allen Hamilton**
Dr. Lloyd Stewart	**Praxis Environmental**

Mr. Lopp called the meeting to order at 7:00 p.m., welcomed RAB members, and asked attendees to introduce themselves. The RAB approved the April 2008 meeting minutes as submitted. Mr. Lopp then began the main presentation, which included updates of cleanup activities at several remediation sites.

First, Mr. Lopp addressed site ST012, the Former Liquid Fuels Storage Area. He said the Air Force is making progress on the Thermal-Enhanced Extraction (TEE) system pilot study. The extraction pumps were removed, inspected and repaired and the extraction wells were redeveloped and inspected. Currently, the Air Force is achieving extraction rates of 8-10 gallons per minute (gpm) in the Lower Saturated Zone (LSZ) and 1-3 gpm in the Upper Water Bearing zone (UWBZ). He added that the influent holding tank in the treatment system was modified to also serve as a primary oil/water separator.

Mr. Lopp said the Air Force also added a granular-activated carbon filter to the treatment system in order to treat barely detectable levels of the pesticide Lindane. The filter system reduces Lindane concentrations in the water down to undetectable levels. By treating the water in this manner, it may be safely discharged without any change to the permit issued by the City of Mesa.

Mr. Holt inquired about the source of Lindane. Mr. Lopp said there is no known reason to find Lindane at that depth. However, he added the levels are so low (barely detectable) that it is not certain that Lindane actually exists at the site. Nonetheless, the Air Force is taking the

extra precaution to filter the water before it is discharged so as to avoid any further delay of the project.

Mr. Zuppan asked about the pump capacity in the system. Mr. Lopp said that one of the design obstacles for the system was to find pumps that can work at this rate while being subjected to steam. He said they could possibly get more capacity out of the pumps, but that the number of wells, their location, and other factors were scaled to fit this model. A 70-foot radius was found to be the ideal size for the TEE cell. He added that the radius of influence is overlapping as the water draws down, which is creating a complementary effect at the site. Mr. Mears added that the pump capacity in the lower saturated zone is 8-10 gpm per pump and there are six pumps in that zone at the site. He added that BEM Systems is collecting telemetry, flow rates and other data to check that the models in the TEE cell plan are correct.

Mr. Holt asked how long it will take to draw out the possibly millions of gallons of fuel out of the site if the system is extracting 8-10 gpm. Mr. Mears clarified that this is a pilot study of the TEE system technology, not the complete cleanup remedy for the site. The pilot study will test the viability of the system to determine whether to proceed with implementing the TEE system as a full scale cleanup solution at site ST012. He said that fuels are bound into the soils and the test will see if using heat (steam) effectively mobilizes fuel out of the soil and moves it into the extraction wells. Mr. Holt asked if the system is large enough to act as the remedy for the entire site. Mr. Mears said that if the pilot test supports implementation of a full scale TEE system, it may require larger cells at the site. Dr. Stewart observed that an average pumping rate of 6 gpm for the 33 weeks of extraction from the 12 TEE extraction wells will generate in excess of 20 million gallons of extracted contaminated water for treatment.

Mr. Lopp next briefed the RAB on the layout and design of the TEE system at the site and its various components. Mr. Zuppan asked whether the soil vapor extraction (SVE) system at the site is operating. Mr. Mears said that operation of the SVE system may be reduced during the TEE pilot study at the site in order to provide adequate treatment of vapors generated by the TEE system. Mr. Holt asked whether it is possible to determine if the steam radiates underground in a regular direction after injection. Mr. Lopp said that the Air Force and BEM Systems will be initiating a Mass Transfer Test at the site in September to predict how steam will move through the test cell. He said the Air Force will attempt to identify any conditions that might affect the movement of steam toward the extraction wells. The Air Force will then use the test results to calibrate the system before initiating steam injection.

In addition to the Mass Transfer Test at site ST012, Mr. Lopp said the Air Force will be installing additional down-gradient monitoring wells in the LSZ and UWBZ in September and October. Additionally, two new SVE well clusters will be installed on the Army Reserve Center in early 2009.

Next, Mr. Lopp briefed the various stages of the pilot test implementation, including the Mass Transfer Test and then the injection of steam. He added that the Air Force, contractors and regulators will be meeting bi-weekly (via teleconference) to discuss issues and progress throughout the pilot study. (The Mass Transfer Test process is presented in greater detail in the attached RAB meeting briefing slides.)

Mr. Lopp also discussed groundwater sampling at site ST012. He said that although the Record of Decision for site ST012 only requires annual groundwater sampling, the Air Force decided to conduct additional sampling down-gradient of the TEE cell. This is simply a precautionary step to monitor all aspects of the site during the TEE pilot study. Mr. Lopp said

that groundwater continues to rise across the site at a rate of approximately 3.5 feet per year and currently sits at approximately 160 feet below ground surface. Seven monitoring wells were sampled for benzene, toluene, ethylbenzene and xylenes (BTEX) using the passive diffusion bag (PDB) samplers discussed at previous RAB meetings. These samplers were placed at multiple depths in the wells. All but two of the samples reported non-detects for BTEX compounds. The other two samples did not exceed Arizona Water Quality Standards and drinking water Maximum Contaminant Levels.

Mr. Lopp and Mr. Harbin next discussed the Remedial Investigation (RI) at site LF004, the old landfill. Mr. Harbin said much fieldwork has been conducted at the site. The Air Force collected shallow soil gas samples from soils under the former Temporary Treatment Facility (TTF). Samples indicated trichloroethylene (TCE) and perchloroethylene (PCE) in shallow soil gas.

Mr. Harbin said that additional shallow soil gas sampling is ongoing. The Air Force used PDBs at various depths in all landfill monitoring wells to test for volatile organic compounds (VOCs). The Air Force also collected natural attenuation parameters from all wells to support the upcoming Feasibility Study (FS) for the landfill.

Mr. Harbin said the next steps in the landfill RI will be to complete shallow soil gas sampling, install deep soil borings to the water table at the site, conduct the next round of semiannual groundwater sampling and install four additional monitoring wells. He said the Air Force will then produce an RI/FS report and continue to optimize the groundwater monitoring program. He then briefed RAB members on specific test locations and results.

Mr. Zuppan asked when the area located at the far northwest corner of the map on Slide #26 were sampled and what were the results. Mr. Harbin said the Air Force tested the area in July 2007 and found nothing. He added that the readings showing on the slide are very low, just barely above detection limits.

Mr. Zuppan asked when any projected remediation system for the landfill would be installed. Mr. Lopp said it will be Fiscal Year 2010 at the earliest, and added that he placed a request for funding into programming documents for this project. Mr. Harbin added that the project has to go through the CERCLA process first. This involves completing the RI and FS and then moving forward to an amended Record of Decision (ROD) so select the remedy. Mr. Lopp said that any remedy will include a monitoring system, which is one reason why the Air Force is moving forward with planning for additional monitoring at the site.

Mr. Zuppan asked when Kinder Morgan worked at the site. Mr. Harbin said they had a pipeline in the area in the 1950s and the storage tank was put in place in 1987. Mr. Zuppan asked if the tank always only contained petroleum. Mr. Harbin said that is correct. He said the pipeline was investigated and no release was found. Additionally, the tank was emptied and made inert.

Mr. Lopp summarized the status of the soil removal from the TTF. He noted that, following the disposal of soils, confirmation sampling showed that four isolated areas remained slightly above residential Soil Remediation Levels (SRLs) for dieldrin. Step-out sampling was conducted by URS in March 2008 and the Air Force intends to excavate these areas and remove all soils exceeding residential SRLs.

Mr. Lopp next addressed cleanup at former site ST035, also known as Building 760. This site served as the old base gas station for 20 years, with gasoline service suspended in 1986 and formal closure in 1993. After closure, all tanks, dispensers and lines were removed. In 1996, the property was deeded to Arizona Board of Education and it is now located on the grounds of a new Arizona State University (ASU) building complex on the Polytechnic Campus.

In 1997 the Air Force installed eight monitoring wells, five of which were abandoned by ASU in 2007 when it began construction of the new complex. In 2008, ASU replaced the wells they abandoned and the Air Force replaced the three remaining wells because well screens were submerged. As ASU installed a bridge across an arroyo they integrated SVE piping into it and installed SVE piping in the vicinity of sidewalks, roads, and landscaping to minimize disruption to their construction. Later in 2008, the Air Force installed five SVE extraction wells and conducted an SVE pilot test. Mr. Lopp said the Air Force has a validated project to complete and operate the SVE system at site ST035 in 2009.

Mr. Lopp and Mr. Harbin then discussed the groundwater sampling results from site ST035. Mr. Holt noted that Monitoring Well #12 seems to detect a higher concentration of BTEX than the other wells. Mr. Harbin stated that groundwater contamination at the site appears to have migrated in the direction of groundwater flow. He said that groundwater at the site flows toward that well, and it appears the slug of groundwater contamination exists that well. The Air Force took an action item from the discussion to report at the next RAB meeting what it will do to address the groundwater contamination at the site.

Concluding the environmental update, Mr. Lopp provided information on the Parcel N Debris Area, Site SS017 and monitoring well replacement. Parcel N is located east of the landfill in the south/central part of the former base near the Doppler radar site. As previously briefed to the RAB, the Air Force has been investigating old fragmented 50-caliber cartridge casings that were found on the site in recent years. Mr. Lopp said the Air Force will transmit a draft Preliminary Assessment/Site Inspection work plan to regulators in September and start field work in late 2008.

Mr. Lopp said that the Air Force completed annual groundwater sampling at site SS017, which is located under the old water tower, now part of the ASU campus. All samples resulted in non-detects for dieldrin. The Air Force is currently producing the Draft Final Record of Decision (ROD) for Operable Unit 6, which includes this site, which should be final in early 2009. The Air Force will propose that no active remediation is required at the site. The ROD will likely include institutional controls to limit future use at the site to nonresidential development.

Mr. Harbin said the Air Force has contracted URS Corporation to abandon and replace several monitoring wells across the base. These wells will be replaced because of damage to the existing well or because well screens are submerged or because the wells are being relocated to yield more applicable data.

Mr. Lopp then provided an overview of property transfer at the former base. The map on Slide 38 of the attached briefing provides a status update on various parcels across the site.

Ms. Cargile then covered action items from the November 2007 RAB meeting. She asked members to discuss a RAB tour of the TEE system at site ST012. They decided to conduct the tour at 9:00 a. m. on Saturday, November 15, 2008. She then asked for suggested agenda items for the next RAB. Mr. Holt asked for a discussion on Building 760.

Mr. Lopp adjourned the meeting at 9:00 p.m. The next Williams RAB meeting date is scheduled for Tuesday, November 18, 2008, at 7:00 p.m., at Highland High School.

Attachments:
1. August 26, 2008, RAB meeting agenda
2. August 26, 2008, RAB meeting Air Force slide presentation