



**DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 95TH AIR BASE WING (AFMC)
EDWARDS AIR FORCE BASE CALIFORNIA**

18 April 2011

MEMORANDUM FOR SEE DISTRIBUTION

FROM: 95 ABW/CEVR

SUBJECT: Minutes of the Environmental Restoration Program, Restoration Advisory Board
(RAB) Meeting, 18 November 2010

1. Time: 1734
2. Place: North Edwards, California
3. Chairman: Mr. Peter Zorba, Public Co-chair/Lancaster Public Representative
4. The following RAB members were present:

<u>Name</u>	<u>Position</u>
Col Jose Torres, Jr.	Air Force Co-chair
Mr. Bruce Davies	North Edwards Public Representative
Mr. Kevin Depies	California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC) Remedial Project Manager (RPM)
Mr. Ai Duong	Edwards Air Force Base (AFB) RPM
Ms. Julie English	Boron Public Representative
Dr. Joseph Healy, Jr.	United States Environmental Protection Agency (U.S. EPA) RPM
Mr. Patrick Morris	Edwards AFB Base Housing Public Representative
Mr. Richard Salazar	Edwards AFB Main Base Test Wing Public Representative
Ms. Nancy Zimmerman	Edwards AFB Main Base Air Base Wing Public Representative

5. The following members were absent:

<u>Name</u>	<u>Position</u>
Mr. Marvin Crist	Lancaster Public Representative (Alternate)
Mr. Milton McKay	Air Force Research Laboratory (AFRL) Public Representative
Mr. Tim Post	Lahontan Regional Water Quality Control Board (LRWQCB) RPM
Mr. James Ricks	U.S. EPA RPM
Mr. Robert Smith	California City Public Representative
Mr. John Steude	LRWQCB RPM

Dr. Leslie Uhazy	Rosamond Public Representative (Alternate)
Ms. Brenda Weems-Hunter	Edwards AFB South Base Public Representative
Mr. Victor Yaw	Mojave Public Representative
Vacant	Edwards AFB North Base Public Representative
Vacant	National Aeronautics and Space Administration (NASA) Public Representative
Vacant	Rosamond Public Representative

6. The following advisors were present:

<u>Name</u>	<u>Organization</u>
Mr. Joseph Dunwoody	95 ABW/CEVR
Ms. Patrice Hallman	95 ABW/CEVR
Mr. Gary Hatch	95 ABW/PAO
Ms. Rebecca Hobbs	95 ABW/CEVR
Mr. Tom Merendini	95 ABW/CEVR
Mr. Bruce Oshita	95 ABW/CEVR
Mr. Paul Schiff	95 ABW/CEVR
Mr. Warren Seidel	AFFTC/JA
Dr. Stephen Watts	95 ABW/CEVR

7. Others present were as follows:

<u>Name</u>	<u>Organization</u>
Mr. Ranney Adams	AFRL Environmental Manager
Ms. Vanessa Green	JT3/CH2M HILL (Recorder)
Ms. Patti Kumazawa	JT3/CH2M HILL
Ms. Leilani Richardson	JT3/CH2M HILL
Mr. Ray Sugiura	AECOM Technical Services, Inc.
Mr. Todd Battey	AECOM Technical Services, Inc.
Ms. Kate Blais	95 ABW/PA
Mr. Randall Tolle	North Edwards Resident
Mr. David Oates	North Edwards Resident

8. Col Torres read the *Statement of Purpose and Conduct*. Col Torres introduced Mr. Morris, Ms. Zimmerman, and Mr. Davies as the new representatives for Base Housing, Main Base Air Base Wing, and North Edwards, respectively.

a. Mr. Duong encouraged the new representatives to review their RAB information binders and suggest topics from the binders they would like to learn more about at a future RAB meeting. He said the first part of each quarterly meeting is reserved for a RAB training session.

9. Col Torres presented the 19 August 2010 RAB meeting minutes for acceptance. The minutes were accepted as presented.

10. Restoration Advisory Board Training Session – *Applicable or Relevant and Appropriate Requirements (ARARs) “How Clean is Clean”* (attachment 1). Mr. Seidel led a training session explaining ARARs in the *Comprehensive Environmental Response, Compensation, and Liability*

Act of 1980 (CERCLA). Agencies identify ARARs applying to a site during the early stages of comparative analysis, usually including chemical- and location-specific ARARs. Later, the list is modified to include action-specific ARARs for each proposed remedial alternative in the Feasibility Study. Final ARARs are presented in the Feasibility Study to assist decision-makers with selecting the alternative to be documented in the Record of Decision (ROD).

11. Restoration Advisory Board Vacancy Update – Mr. Hatch reported the vacancies for the NASA and North Base representatives remain open and advertising continues at those locations. He added applications had been received and are currently being packaged for the Rosamond representative and Main Base Test Wing alternate representative.

12. Reports from Public Representatives.

a. Ms. English, Boron, had no comments from her constituents. She said she continues to distribute the flyers and the *Report to Stakeholders*. Ms. English said she would like to share a brief summary of what she has learned on the RAB with the Boron Chamber of Commerce, and take down any questions or concerns they may have before the next RAB meeting. Mr. Zorba offered that the RAB could send a representative with Ms. English to answer any additional questions and support her effort.

b. Mr. Morris, Base Housing, had nothing to report.

c. Ms. Zimmerman, Main Base Air Base Wing, had nothing to report.

d. Mr. Salazar, Main Base Test Wing, had no comments from his constituents. However, he asked if it would be possible to obtain a Test Wing e-mail distribution list to send an e-mail introducing himself as the Test Wing representative on the RAB, explaining what the RAB is, and soliciting any concerns or questions to report back at the next RAB meeting. Mr. Seidel stated this would be possible because it is mission related.

e. Mr. Zorba, Lancaster, had no comments from his constituents. He said he continues to hand out the *Report to Stakeholders* and post flyers for the RAB meetings. Mr. Zorba added he recently had the opportunity to interact with similar entities and realized how organized and efficient the Edwards AFB RAB meetings are. He gave kudos to the organizers and the board.

f. Mr. Davies, North Edwards, had no comments.

13. Reports from RPMs.

a. Mr. Depies, Cal/EPA DTSC, had nothing to report.

b. Dr. Healy, U.S. EPA, said he wanted to applaud the Air Force enthusiasm in running the large Edwards AFB Environmental Restoration Program, meeting deadlines, and making progress. He said the Air Force and regulators have been meeting with higher-level management to seek adjustments to the schedule. He stated some projects may be accelerated and others postponed because the workload currently outweighs the amount of available resources. He added that he has 2 RODs to review when he returns to his office.

c. Mr. Duong called for reports from Environmental Management program managers (attachment 2).

(1) Mr. Schiff briefed on Operable Unit (OU) 1 Main Base Flightline, and the Military Munitions Response Program (MMRP).

(a) Mr. Schiff noted the public comment period for the draft final version of the OU1 Proposed Plan would be pushed back from the spring 2011 timeframe.

(b) Mr. Schiff stated the Site 16 *In Situ* Bioremediation Study continues in a small portion of a source area to determine how effective *in situ* bioremediation is at the site. Mr. Schiff stated treatment systems are generally placed in the higher concentration areas of a site to keep the contamination from spreading out into the plume. A report with the documented findings of this study is expected to be completed in approximately 6 months and will provide direction for selecting the final remedy to implement.

(c) Vapor intrusion pathways are currently being assessed in some OU1 buildings to satisfy requirements for the OU1 ROD. Mr. Schiff stated vapor intrusion is a fairly new pathway of concern, or path from which one can become exposed to contamination. He explained when a building is situated on a cement slab located 40 to 50 feet above contaminated soil or groundwater, it is possible for vapors to migrate upwards through the slab. If the vapors in the building are sustained at high enough concentration levels, they can cause long-term carcinogenic problems. Restoration officials are testing for vapor intrusion by taking indoor, ambient, and subslab air samples in buildings. No imminent health risks warranting evacuation have been found. Additional buildings within OU1 will be targeted for sampling in 2011.

1) Mr. Salazar asked if Building 1830A was being sampled for vapor intrusion at this time. Mr. Schiff responded that it is not. He added that it may be included in the additional buildings designated for future sampling.

2) Mr. Salazar asked if other pathways of concern had been evaluated and ruled out within the Test Wing, besides vapor intrusion. Mr. Schiff stated that the most critical pathway of concern would be possible vapor intrusion, because the other pathways—dermal contact or ingestion of groundwater—are not complete (there is no human contact). Mr. Schiff noted that he does not foresee a problem with vapor intrusion, but restoration officials are required to show proof of this as a part of the ROD process. Mr. Salazar asked Mr. Seidel if any health claims or problems have occurred in the past within the Main Base or Test Wing. Mr. Seidel answered that none have occurred.

3) Col Torres asked if the 21 new monitoring wells installed in OU1 addressed U.S. EPA concerns. Mr. Schiff said they did, and would fill data gaps.

(d) Mr. Schiff stated the MMRP was initiated in 2002, when the Department of Defense was required to take inventory and characterize ranges across installations. He noted the Comprehensive Site Evaluation (CSE) Phase 1 at Edwards AFB was completed in 2006. Through the Phase 2 evaluation, 2 areas were identified as needing a Supplemental CSE Phase 2 evaluation before they could be characterized as 'No Further Action' areas. Mr. Schiff stated that an Engineering Evaluation/Cost Analysis (EE/CA) was being prepared for surface

clearance at Munitions Response Sites AL504, AL505-2, and AL505-4. This analysis document is required to record the alternatives, from no action to complete surface clearance, and the costs associated with each alternative. The public will be able to comment on the EE/CA during an upcoming 30-day public availability session.

(2) Ms. Hobbs briefed on OU2 South Base, OU7 Site 3, and OU7 Chemical Warfare Materiel.

(a) Ms. Hobbs stated that Remedial Action Work Plans (RAWPs) are documents prepared after a ROD to describe how the final remedies should be implemented. The RAWPs are completed for Sites 5/14, 76, and 86. For Sites 5/14, restoration officials are installing wells to inject gaseous nutrients into areas where there is floating jet fuel. The gaseous nutrients will feed bacteria in those areas to destroy the jet fuel. Ms. Hobbs stated horizontal wells will be installed in the upgradient portion of the trichloroethene (TCE)-contaminated plume. The wells will be used to inject potassium permanganate into the groundwater. Once the source area is cleaned, additional horizontal wells, totaling 9 horizontal wells, will be installed downgradient. Ms. Hobbs stated that restoration officials expect to have the groundwater cleaned to unrestricted use in 12 years. In the last 50 to 60 years, the groundwater has migrated 1 mile. To keep the groundwater from migrating any further, there is a dual extraction system in place that extracts the groundwater, runs it through granular activated carbon to remove the TCE, and reinjects it back into the subsurface.

(b) At Site 76, a gaseous nutrient will be injected into the groundwater to destroy the localized TCE. At Site 86, potassium permanganate injection will be used to destroy the localized TCE. Ms. Hobbs stated either process would have worked at either of the sites, but restoration officials selected the treatment that would be most cost efficient based on the size of the plumes. Restoration officials expect Sites 76 and 86 to be cleaned to unrestricted use in 3 years.

(c) Ms. Hobbs stated that 150,000 tons of surface debris was removed from Site 29, and revealed that only a small amount of subsurface debris remains. Ms. Hobbs stated that digging up the remaining debris is estimated to cost \$3 million, saving approximately \$15 million compared to the estimated \$18 million cost of installing a fence, installing stormwater controls, long-term monitoring, and capping the site. A revised Proposed Plan and amendment to the OU2 ROD are required to change the remedy. Restoration officials have a draft Proposed Plan in regulatory review and expect clean closure of the site in the next 2 years.

(d) Ms. Hobbs stated Sites 81 and 102 were closed by regulatory agencies many years ago, but recently opened for further evaluation of the potential presence of polycyclic aromatic hydrocarbons in the skeet target debris. Polycyclic aromatic hydrocarbons can be harmful to animals. After testing, restoration officials found polycyclic aromatic hydrocarbons were present at the sites. Ms. Hobbs stated that after specific areas have been identified for further investigation, a Feasibility Study will be performed. Cleanup activities for these sites will follow the normal *CERCLA* process.

(e) Ms. Hobbs noted that the draft final Site 3 ROD comments from RPMs will be delayed. However, after coordinating approval of the decision document, she expects the final ROD to be signed in mid- to late-February 2011.

(f) Under the OU7 Chemical Warfare Materiel (CWM) Program, extensive sampling is not possible at the CWM areas because there may be Chemical Warfare Agents (CWA) present. Ms. Hobbs explained the risk of investigating the areas is too dangerous, so they are being treated as having CWA present. The plan is to cap the areas, install stormwater berms and fences, implement land use restrictions, and perform soil gas monitoring every 5 years to make sure nothing is coming out of the trenches.

(g) Ms. Hobbs invited those who may be interested in being present for the horizontal well installations for Sites 5/14, planned for late December or early January, to contact her for more information.

(3) Ms. Hallman briefed on OUs 4 and 9, AFRL sites.

(a) Ms. Hallman stated the Remedial Action Completion Report for Sites 6, 36, 113, 115, 167, 312, and 318 documented the cleanup activities that have been completed after the ROD. She noted some of the completed Remedial Actions were not drastic and demonstrated the newly installed fence and Land Use Controls around the Site 115 missile silo, as one example.

(b) Ms. Hallman noted it would be a couple of months before the draft ROD for the AFRL Arroyos would be completed. She stated the Groundwater Modeling Report for Northeast AFRL is in review with the Air Force Center for Engineering and the Environment.

(c) Site 312 excavation and removal of polychlorinated biphenyl (PCB)-contaminated soil was conducted. Ms. Hallman stated that in the 1990s, the transformers located at Site 312 contained PCBs that leaked onto the concrete and soil. The excavation and removal team cleared out approximately 70 cubic yards of contaminated soil, while keeping a new compliant transformer and supporting structures in place. Ms. Hallman noted that some PCB-contaminated soil remains between the concrete and bedrock. Restoration officials are discussing methods to document how much contaminated soil remains and which Land Use Controls would be appropriate to implement at the site.

(4) Mr. Oshita briefed on the OU5/10 North Base sites.

(a) Mr. Oshita reviewed the current schedule for the primary documents and noted that Cal/EPA DTSC has requested an extension for review of the draft final OU5/10 Feasibility Study. He said it should be pushed out until 6 January 2011, and will affect the timeline for the subsequent documents.

(b) Site 231 soil excavation was completed 8 October 2010 under a Time-critical Removal Action, to avoid impacting the Army's Sky Warrior Program. The window of opportunity to fast-track this work was between September and December 2010, when the Sky

Warrior Program was between Phases 1 and 2. Mr. Oshita showed images of Site 231 before excavation began on 21 September 2010 and of the proposed layout for Phase 2 of the Sky Warrior Program—which plans for a large area of new trailers and office spaces next to the excavation site. Mr. Oshita showed an image of the open excavation and stated that the concrete footings would remain at the site, but be mostly buried after backfilling. He added that removing the footings was not beneficial due to additional costs and the projected land use.

Mr. Oshita said the soil removal was completed and soil levels were below any Federal (400mg/kg for residential) or State Maximum Contamination Levels (150mg/kg for residential). The excavation will be considered an Interim Removal Action until the OU5/10 ROD is signed. All soil in the excavation was removed at or below the OU5/10 lead concentration of 8mg/kg.

During the excavation, Mike Finch (Cal EPA/DTSC) arrived onsite for 2 days to take split samples using the X-ray fluorescence machine for lead sampling. Mr. Oshita noted that Mr. Finch was very pleased with the matching results between his readings and the contractor's readings. Approximately 800 cubic yards of soil were removed at the site. Mr. Oshita stated that the backfill soil was located near Littlerock, California. A Soil Removal Action Report draft was submitted for RPM review 15 November 2010.

(c) Restoration officials took advantage of the September through December 2010 break between the Army's Sky Warrior Program Phases 1 and 2 to delineate the plume at Site 231. Soil gas sampling was conducted at 75 locations and subslab sampling was conducted at Hangar 4401, after Thanksgiving. Many of the soil gas sampling locations were intermingled among the Sky Warrior work area. Mr. Oshita stated the primary goals of the plume delineation work was to confirm potential source areas and to identify where new monitoring wells would need to be installed to fill gaps in groundwater plume contours. Using the California Human Health Screening Levels scale of 26.6 parts per billion by volume of air for residential areas, the Air Force demonstrated the soil gas results on a map of Site 231. New sources of contamination were not found during the investigation and the wells with the highest concentrations are located near the northeast corner of Hangar 4401. Mr. Oshita showed an image of a completed vapor well head, which contains tubes for sampling at different depths in the soil—one at 5.5 feet and the other at 14.5 feet. Another slide showed a sampling technician taking a soil gas sample using the syringe method. Mr. Oshita stated that an onsite mobile lab conducted the analytical tests, which proved to be time and cost efficient with locating the outer edges of groundwater plumes.

(d) Mr. Oshita said the Site 242 soil excavation would be similar to AFRL's Site 312 soil excavation of PCB-contaminated soil. The excavation action will require shutdown and relocation of an electrical transformer that services buildings located in secured areas and other areas at NASA Dryden. Mr. Oshita stated the biggest challenge of the job would be to complete the work over a weekend and have the transformer running by Monday morning. Mr. Oshita added that the actual soil excavation should not be an issue, because preliminary soil sampling demonstrates that contamination resides in the top 12 inches of soil.

(5) Mr. Merendini briefed on OUs 6 NASA, 7 Basewide Miscellaneous, and 8 Northwest Main Base.

(a) Mr. Oshita asked if regulators and the U.S. EPA had to be involved in the Record of Decision 5-year Review site inspection. Mr. Merendini stated that they did not and the Air

Force would conduct the inspection. Mr. Depies said he recalled that a third party usually conducted the site inspection. Dr. Healy recommended they review the guidance documents and revisit the discussion.

(b) Mr. Merendini stated the OU7 Proposed Plan would be pushed back to June 2012 because of schedule delays and ongoing work for the EE/CA. He stated the EE/CA and Action Memorandum would need to be inserted into the Proposed Plan before it could be sent to regulatory agencies.

(c) Mr. Merendini discussed future RODs for OU8. Site 25 will have its own ROD because of the complexity of the site. The remaining OU8 sites will be included in another ROD. Mr. Merendini said the draft final OU8 Proposed Plan will be pushed back from its 30 January 2012 date to allow for further plume delineation, filling of data gaps, and additional work to clarify sites.

(d) Restoration officials are looking at scientific approaches for the groundwater modeling at Site 25. It is supposed to be a 3-dimensional model showing the dynamics of the groundwater flow, which Mr. Merendini stated is very complicated. Once completed, the model is expected to project where the contamination would migrate over time.

(6) Mr. Dunwoody briefed on the Petroleum/Compliance Restoration Program.

(a) Mr. Dunwoody noted the difference between the blue circles and green areas in the images presented is that the blue circles are defined plumes and the green areas are plumes that have not yet been clearly defined.

(b) During the Phase 2 Compliance Restoration Program (CRP) Evaluation, Site 461 was found to have free product, jet fuel, or rocket fuel. Restoration officials are currently preparing to add the site to the program and getting cleanup activities funded.

1) Dr. Healy asked if any of the petroleum sites have been identified in the South AFRL containment zone and Mr. Dunwoody answered that there are none. Mr. Zorba asked how many of the 50 oil water separators (OWS) sites identified as potentially eligible were actually eligible for the CRP. Mr. Dunwoody answered that he is waiting on the verification of eligibility results. Mr. Dunwoody said the 50 sites were identified from the 117 OWSs in the Edwards AFB database, and may include both currently active and abandoned-in-place OWSs.

2) Mr. Davies asked how the depth of sampling was determined. Mr. Dunwoody stated that petroleum floats on the surface of groundwater, which means that the wells only need to extend to the bottom of the groundwater surface screen. He added that in TCE-contaminated plumes, the contaminant sinks and wells must extend farther into the groundwater. Ms. Hobbs added that well depth is discussed and agreed upon with the regulators.

14. The next meeting is proposed for 17 February 2011 in Mojave, California (site location is to be determined).

15. The meeting was adjourned at 1930.

APPROVED AS WRITTEN.

//Signed by **Col Harry Barry** for//

//**Signed**//

JOSE L. TORRES, JR., Colonel, USAF
Air Force Co-chair
Restoration Advisory Board

PETER ZORBA
Public Co-chair
Restoration Advisory Board

2 Attachments:

1. Restoration Advisory Board Training – *Applicable or Relevant and Appropriate Requirements (ARARs) “How Clean is Clean”*
2. Reports from Environmental Management Program Managers

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