

clearing of vegetation and the draining of the creek. Buckets with holes housed the hose intakes to keep vegetation and wildlife from getting sucked up into the dewatering hose. This method was a very cost-effective way of accomplishing the dewatering.

When digging was completed, confirmation samples were collected from the excavations to confirm that the removal of contaminated sediments was successful. The area had to be as dry as possible to collect the confirmation soil samples. A GPS unit was used to document the sample locations in case we needed to conduct any additional excavation. Mr. Anderson described one of the problems encountered in regards to keeping the areas dry. A photo presented showed a high water level at the upstream cofferdam; one minute later, water was overflowing, and ten minutes later, the excavated area was filled with water. On the day this occurred, the weather was very hot, and it appeared that the additional water in the creek was due to irrigation runoff. At that point, only four more samples needed to be collected to complete the data confirmation and wrap-up. Sampling stopped to dewater, again. Mr. Anderson pointed out this incident to show some of the challenges encountered during the project.

For the last step in site restoration, burlap material and rock were placed in the excavated areas for preservation and to prevent erosion of the creek walls. The clean rock material used was from another location on base, which saved money. Fescue seed was placed on the excavated areas, which may have already started to germinate.

Mr. Marianno asked about the sediment, and if it was contamination from wash, and what was the urgency to dredge. Mr. Smith said we have been sampling all along and the regulators required the base to take some kind of action in these two spots. The contamination is asphalt based. Mr. Marianno said he appreciated the cleanup Travis AFB has been doing.

Ecological protection: There were eight western pond turtles in the excavation area that we relocated to where Union Creek exits the base. A Garter snake was also observed during the sediment cleanup.

The construction team consisted of eleven staff that conducted the excavation and restoration work. The excavated materials consisted of 300 tons of vegetation, 280 tons of contaminated sediment, and 280 tons of rock (rip-rap) debris. All material was sent to Hay Road Landfill. Landfill disposal cost: between \$30,000 and \$34,000 (Vegetation \$46,000/ton, Rock \$40,000/ton, Sediment \$15,000/ton). Fuel consumption included 1400 gallons diesel, and 600 gallons gasoline.

Cleanup levels were achieved at both sites.

b) Remedy in Place 2012

Mr. Duke presented an overview of the Remedy in Place (RIP) requirements. Mr. Duke began with three famous quotes, okay maybe two famous quotes. "Begin with the end in mind", Steven Covey. "The journey of 1000 miles begins with a single step", Confucius. "The journey of RIP by 2012 begins with a single groundwater sample", Lonnie Duke.

Path to RIP chart: Interim remedial action - Remedial Action Operation - Data Gap Filling (we are here) - Remedy Optimization - Focused Feasibility Study - Groundwater Proposed Plan - Groundwater Record of Decision.

Mr. Duke said we are now at the Data Gap Filling stage in the process. A lot of progress has been made, and the groundwater plumes are a lot smaller than they were a short time ago. We can clean up the environment more efficiently; using less energy, a more biology-based approach, and letting mother-nature help in the cleanup. At this point, we are collecting the data needed in order to optimize the remedies we already have in place. The next step is to determine the best path forward for all of the sites. Before we develop the Proposed Plan (PP), we have to complete the Focused Feasibility Study (FFS), which evaluates the remedial action alternatives. The draft FFS is scheduled for February 2010. Then, the Proposed Plan (PP) is developed. A draft PP is scheduled for May 2010. The PP will be published for the public to review and provide comments.

Mr. Duke showed on a base map all the fieldwork locations: SS016, ST018, DP039, ST032, ST037, SS030, SS014, and SD036/SD037. There were two drill rigs that operated on the base for two months, bouncing around from site to site. It was cost effective to keep the drill rigs on base, to save on additional mobilization costs. We are down to one drill rig now. The samples collected had a 24-hour turn-around time so we could get the analytical results back quickly. If needed, we could go back to a site and perform step-out sampling to collect more data.

Site characterization:

ST027B: Required weekend work, and heavy coordination with the Airfield Manager. The last round of data collection was right next to the aircraft hold line, which was as close as we were allowed to get to the runway. This work required closure of the Taxiway November and Runway 03L/21R.

SS014: POCO site - is a collection of several small sites all very close geographically. We installed one monitoring well.

ST018: POCO site - near AAFES gas stations on Travis Blvd. MTBE leaked from an old AAFES underground fuel tank. We will be installing several (3 to 4) extraction wells. Still need to collect more data at this site. In addition to the new extraction wells, a new groundwater treatment system will be installed. Activated Carbon filtration will be used to treat the groundwater.

ST032: POCO site – another difficult site as it is in the middle of the airfield. We did not have to install new wells; sampling was conducted from existing wells to collect data. Monitored Natural Attenuation (MNA) seems to be working; the plume appears to be shrinking. We collected more data to evaluate the suitability of MNA.

SS030: is one of our off-base sites. We had to further characterize this groundwater plume to the east. More data collection was needed. The base had to get a right-of-entry agreement with the property owner. We will install one well on our easement portion.

SS016: a large plume that goes underneath the flight line. We needed to identify the source area, which is near building 18. In the past, this building was very active with jet aircraft maintenance – and was not easily accessible. They no longer use that building for aircraft maintenance, and it is now used as a warehouse. Having access to the building is no longer an issue. We even put a drill rig inside the building, as well as drilled a boring just outside the building, at a 30-degree angle under the building. Further downgradient on the flight line, which is normally a restricted area, as luck would have it, a contractor was replacing the concrete. All the old concrete was removed, exposing the underlying soil. The pavement contractor had a dig permit for the entire area which allowed us to collect more data for site characterization.

DP039: has a large solvent plume that we are using to demonstrate the viability of several cleanup technologies. The potential remedies in operation include phytostabilization and an in-situ bioreactor. We will also be installing an emulsified vegetable oil bio-barrier. We are currently collecting data to determine the best location to place the bio-barrier.

SD036: Hot Spot characterization. There is a TCE hot spot at this site, and Travis may use EVO injections to optimize the remedy. The data collection is designed to delineate the hot spot.

SD037: Hot Spot characterization. This site is adjacent to the new huge C17 2-bay hangar. Work at this site required weekend and holiday work to avoid interference with the hangar construction contractors.

Mr. Duke concluded with a wrap-up of drilling and field activities. To date we accomplished:

103 boring locations.

143 borings.

5,133 feet collectively drilled.

21 soil samples taken.

129 groundwater samples taken.

27 wells installed.

Vapor Intrusion Assessment: Partnered with EPA to collect vapor samples. Collected samples inside buildings that are located close to the contaminated groundwater

plumes. The objective of the assessment was to determine if there were contaminants volatilizing out of the groundwater plumes and into buildings.

The annual Groundwater Sampling and Analysis Program (GSAP) event was completed this summer. That sampling project provides data required to assist in making decisions about remediation at the Base and optimization of groundwater treatment plants. We sampled 320 existing extraction and monitoring wells in May and June 2009. 109 of those samples were collected using Passive Diffusion Bags (PDBs), a sampling technology that was described in our last RAB meeting. Using this technique is much faster and requires only one field technician rather than two. The field technician grabs the bag to collect the sample and replaces the bag with a new one.

Phytoremediation: Sampling was conducted by Utah State University at DP039. Specialized equipment was used to determine if the eucalyptus trees were taking up the contaminated groundwater and off-gassing TCE. Two field mobilizations were conducted to collect vapor samples. One took place in the springtime, and one a few weeks ago to identify any seasonal variations in the amount of vapor released by the trees and the concentration of solvents in the vapor.

V. Cleanup Program Status

Mr. Smith presented information on the status of the cleanup program. This has been one of the busiest years ever for the Travis Restoration Program. Back in 2006, Air Mobility Command directed Mr. Smith to use a “performance based management plan” to achieve Remedy-in-Place for all Travis AFB restoration sites by 2012. This type of plan requires the base to define the objectives that the contractors must meet. The contractor then proposes the site characterization, data collection, and document production that will be used to achieve the objectives. This year has had its fair share of challenges. The California Regional Water Quality Control Boards and DTSC are supporting the Travis restoration program in spite of furlough Fridays (off three Fridays a month) which makes document reviews even more challenging. Mr. Smith thanked everyone for their help with document reviews, given the aggressive schedule and the furloughs. This is in addition to an unprecedented field work schedule.

Mr. Smith referenced a slide with cost estimates for the fiscal year period from '08 to '14. He pointed out the changes in the estimates before the use of Performance-Based Contracts (PBC) and after. The original thought was pump-and-treat technologies were the way to go to address groundwater contamination, even though they take up a lot of energy, time and materials. Now, the PBC approach offers a better way to achieve

remedy-in-place. Based on in situ groundwater technologies, the PBC approach spends a little more money up front, but it saves in the long term by eliminating operational costs associated with pump-and-treat. The base will still follow the CERCLA process by using all of the site characterization data to produce a Feasibility Study, publish a Proposed Plan to obtain public input and a year from now present a draft groundwater Record Of Decision for review and signature.

VI. Regulatory Agency Reports

Mary Snow/Techlaw, a contractor to EPA, stated that Mr. Chang wanted to convey that he is really impressed with the aggressive schedule the Air Force is using to reach their goals.

Mr. Friedman commented that the usual way the Water Board regulates their sites is to tell them what they need to do by a particular date. The usual response by the regulated parties is they cannot do it, because the work is too expensive. In the case of Travis however, it is the reverse. Mr. Friedman said they will do their best to help support the cleanup process.

Mr. Smith stated that DTSC is not available this evening to comment.

VII. Focus Group Reports

Mr. Smith said they have relied on the Focus Groups in the past to help with budget or technical concerns. Mr. Smith thanked the RAB members for their help.

VIII. RAB/Public Questions

Mr. Moscarelli was given a grant to study pipelines that run through the City of Suisun. Some were installed over 60 years ago, and they are aging. The idea is to find out the life of the pipelines. Mr. Moscarelli would like to have a partnership with the base to share information. Further discussion will be held off record after meeting is adjourned.

Mr. Smith concluded saying that Travis AFB was recognized for having the best restoration cleanup out of all the bases in Air Mobility Command. Travis AFB won the

General Thomas D Wright award for restoration. Mr. Smith said the reason for the award is the team that we have, and the fact that we take the Air Force cleanup mandate very seriously. Mr. Smith thanked and acknowledged the help from the public and the agencies.

IX. Set Time and Place for Next RAB meeting

The next RAB meeting is scheduled for **22 April 2010** at the Northern Solano County Association of Realtors in Fairfield.

X. Adjournment

Mr. Smith adjourned the meeting at **8:40 pm**.

Minutes submitted by: Jeannette Cumberland, CH2M HILL

Minutes approved by: Mark Smith