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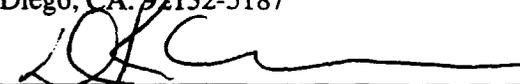
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MEETING MINUTES

Meeting Subject: Soil and Groundwater Remediation - Site 24 MCAS El Toro		Meeting Date: 15 January 1997 Meeting Time: 1000 Meeting Place: Conference Call Meeting Notes Prepared By: Patrick Brooks	
Attendees:			
<u>SWDIV</u>		<u>Bechtel</u>	
Bernie Lindsey Andy Piszkin		Patrick Brooks David Cowser	
<u>Other</u>			
Glenn Kistner, U.S. EPA Herb Levine, U.S. EPA Tayseer Mahmoud, DTSC Sherrill Beard, DTSC Larry Vitale, RWQCB Joseph Joyce, El Toro			
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Objectives of New Work at Site 24

The meeting was opened by Bernie Lindsey. He stated that purpose of this meeting was to address any concerns regarding soil vapor extraction system development or groundwater remediation pilot testing relative to the meeting held November 6, 1996 in San Francisco. Bernie distributed the Technical Assumptions for the proposed work to all meeting attendees.

Groundwater Remediation Pilot Testing and Issues

Herb Levine questioned why the work objectives were not presented in the Technical Assumptions. Pat explained that the Technical Assumptions document is not a work plan; it is the basis of our cost estimate and its purpose is to communicate proposed project costs with SWDIV contracts personnel. The Technical Assumptions include a task for preparing a Work Plan. The Work Plan will describe the work effort in detail and include the objectives listed in the November 6 meeting. For review purposes, those objectives are included here:

- 1) Work with the BCT to lay out a framework by which a well field capable of capturing TCE-contaminated groundwater within the groundwater hotspot can be designed and constructed. The general framework proposed is similar to that used during the Phase II RI. Rapid data analysis and interpretation will be performed in the field and presented to the BCT on a regular basis. This will facilitate BCT input to include planning documents, well design and locations, and necessary observation and monitoring wells.
- 2) Install groundwater extraction wells only within the vertical interval of the shallow groundwater unit that is contaminated. This will reduce the amount of water to be treated and injected. It will also reduce the potential for cross-contaminating deeper groundwater units. Hydropunch sampling can be used to help identify the depth that extraction and monitoring wells are drilled.

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- 3) Within the framework of Objective No. 1, install aquifer test observation wells that will also serve as groundwater monitoring wells. The new monitoring wells will help fill the data gaps that currently exist in the Building 296/297 area.
- 4) Synthesize existing and newly collected data to refine our understanding of TCE within the groundwater hot spot and conduct remedial design work accordingly.
- 5) Perform long-term aquifer tests and collect data related to aquifer properties. These data are necessary for the design of an efficient well field. This data may also be used to refine the existing groundwater flow computer model. Once aquifer properties have been estimated, the extraction wells should be operated in the vacuum-enhanced mode.
- 6) Operate the groundwater extraction wells using vacuum-enhancement to evaluate the actual operation of the remedial system (versus operation to estimate aquifer properties). Dewatering of the shallow groundwater unit in conjunction with vapor extraction will remove adsorbed VOCs from the aquifer skeletal material and provide data to assess the potential presence of residual DNAPL.
- 7) Utilize injection wells for flushing and to limit vertical migration of TCE-contaminated groundwater. Investigate the potential for scaling and biofouling of injection wells.
- 8) Evaluate groundwater treatment options such as air stripping, and activated carbon.

Glenn Kistner responded that the proposed project fit in more or less with the November 6 meeting. Larry Vitale asked how the new work relates to the aquifer testing already completed and whether the initial aquifer testing objectives had been met. Pat reminded the group that the aquifer testing that was accomplished as part of the Phase II RI/FS constituted the first testing of a well screened across the entire thickness of the shallow groundwater unit and was primarily used to check assumptions used in the OU-1 and OU-2a groundwater models.. Previous aquifer testing conducted during the Phase I RI was limited to approximately the upper 30 feet of the aquifer. Specific objectives and findings of the aquifer testing report are:

Objective 1 - Evaluate sustainable extraction well pumping rates and compare to those used in the FS. Sustainable pumping rates from extraction wells appears to fall between approximately 10 to 20 gallons per minute (gpm) based on step-drawdown, constant-rate, and vacuum-enhanced aquifer tests. Alternatives 2a, 6a, 9, and 10 assume a pumping rate of 40 gpm. Alternative 11 assumes pumping rates of 12 and 18 gpm, the higher rate being assigned to the center of the dissolved TCE plume and the lower rate to its fringe.

Objective 2 - Evaluate aquifer hydraulic conductivity values relative to values used in the FS groundwater models. The aquifer conductivity value estimated using test data obtained while pumping at well 24EX1 ranged from 6.6 to 10.1 feet per day. Aquifer conductivity values estimated for the test at well 24EX2 ranged from 11.1 to 15.3 feet per day. The hydraulic

MEETING MINUTES (Continued)

conductivity that represented these areas in the OU-2a groundwater model was 10 feet per day and 20 feet per day was used in the OU-1 model.

Objective 3 - Evaluate the radius of influence at specific pumping rates. The radius of influence near 24 EX1 was estimated to be approximately 180 feet; approximately 430 feet at well 24EX2; and approximately 200 feet at well 24IN1.

Objective 4 - Assess the feasibility of injecting treated groundwater into the shallow groundwater unit. Groundwater from well 24EX1 was successfully treated using activated carbon and injected without difficulty at injection well 24IN1.

Objective 5 - Help evaluate the feasibility of using groundwater extraction and injection to remediate shallow groundwater beneath MCAS El Toro. The aquifer testing results are consistent with the conductivity and pumping rate values used in the draft FS for Site 24. The groundwater model indicates that groundwater extraction and injection can be used to remediate contaminated groundwater and limit its migration off-Station. Using an average TCE concentration of 1,000 µg/L at well 24EX1, approximately one pound of TCE was removed during a total pumping time of 4.65 days. The water was successfully treated and reinjected.

Pat also mentioned that CLEAN II has not received U.S. EPA comments on any of the pilot study reports. Cal EPA has forwarded comments on the SVE and Air Sparging Reports and Tayseer reported that Cal EPA would be ready to submit comments on the Aquifer Testing by next week. Glenn said U.S. EPA review could be completed by next week also.

In general, all parties were comfortable with the level of teamwork shown to initiate the new work and both Cal EPA and U.S. EPA expressed their desire to be involved with the work plan preparation.

SVE System Development

The next item for discussion was the Soil Vapor Extraction System Development. Bernie stated that SWDIV was investigating the possibility of transferring the Norton Air Force Base system to El Toro. It is a 10,000 cfm system, treating the discharged soil gas with two 20,000-pound carbon vessels connected in series. Glenn asked what contingency was being made if the Norton system would not be made available. Bernie said that SWDIV would look for an equivalent system - new, if need be. Bernie added that the biggest issue to resolve was how to incorporate a full-scale SVE system into an active airfield. This issue will be evaluated in the upcoming Site 24 work.

Tayseer said that certain Cal EPA soil-related comments need to be answered before they could approve the soil-related portion of the Site 24 FS. Glenn stated that no response to comments were needed for the U.S. EPA. After Cal EPA has reviewed and approved the response to comments, U.S. EPA and Cal EPA would generate a letter approving the soil-related portion of the Site 24 FS. This letter will pave the way for the Interim Proposed Plan and Record of Decision for soil at Site 24.

MEETING MINUTES (Continued)

Future Meetings and Other Issues

Bernie scheduled a meeting for 1000 on January 30, 1997 at El Toro. The subject of the meeting will be results of the one-day SVE pilot tests.

Joseph Joyce stated that a meeting to discuss MCAS El Toro strategies and priorities should be scheduled for the February-March timeframe.

Tayseer mentioned an additional issue regarding the landfills. He stated that Cal EPA is ready to approve the draft final RIs for Sites 3 and 5 once they review and approve of the CLEAN II responses to their comments. Pat said that he would relay this information to Tim Latas.