



THE MEMPHIS DEPOT TENNESSEE

ADMINISTRATIVE RECORD COVER SHEET

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Final

Memphis Depot

BRAC Cleanup Team

Meeting Minutes

27 June 2006

BRAC Cleanup Team	Organization	Phone/email
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Evan Spann	Tennessee Department of Environment and Conservation, Division of Remediation (TDEC-DoR)	901.368.7916
Project Team	Organization	Phone
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Brett Frazer	Corps of Engineers - Huntsville	256.895.1874
David Nelson	CH2M Hill	770.604.9182 x394
Mike Perlmutter	CH2M Hill	770.604.9182 x645
Glen Turney	e ² M	210.348.6000
Tom Holmes	e ² M	404.237.3982
John K. Miller	Mitretek Systems	703.610.2560

Previous Meeting Minute Approval

The BRAC Cleanup Team (BCT) approved and signed the minutes from the 20 April 2006 meeting.

Dunn Field Off-Depot Zero-Valent Iron (ZVI) Permeable Reactive Barrier (PRB) Field Trial

Mr. Nelson presented pictures and provided a brief overview of the Off-Depot ZVI PRB Implementation Study field activities. He reported the percentage of iron by volume for each column and described delivery issues that the team encountered. He also presented preliminary information obtained from the confirmatory borings.

Mr. Ballard and Mr. Spann asked if data from the confirmatory borings indicated that the column installation process occurred as anticipated in the work plan. Mr. Nelson responded that the geometry of the columns was not as perfectly round as indicated in the work plan, and that the real test of the process would be in the chemistry – if the columns reduced contaminant levels within the groundwater flowing through the columns.

Groundwater samples were collected the week after installation. Mr. Nelson described difficulties in obtaining samples from one of the monitoring wells installed within the PRB.

Samples were collected from the other two wells within the PRB. Thus far the geochemical indicators – oxidation reduction potential and dissolved oxygen levels – showed favorable conditions for contaminant reduction.

Main Installation Remedial Action (RA)

Mr. Holmes reported e2M had installed 20 of the 49 planned injection wells and 28 of 35 planned monitoring wells. E2M had also completed some preliminary injection tests that indicated there should be no problem with injecting 10 gallons per minute in Treatment Area 1. In Treatment Area 2, e2M encountered some difficulty in developing several of the wells due to the tight geological formation in that area. There was not a lot of water in the formation at Treatment Area 2, which had been observed during prior sampling efforts.

He reported that well installation was going well and that they were still using two drill rigs. Preparation of Building 265 for lactate storage was almost complete. Regarding the trailer-mounted injection systems, Mr. Holmes said that the first trailer was completed. The second trailer was being constructed and should be completed in July. E2M did encounter a problem obtaining a water flow meter for the lactate storage building, but had resolved the issue.

Mr. Holmes then presented some photographs showing the drill rigs. He also reported that the wells near Barnhart Crane's offices would be drilled at night due to noise resulting from the proximity of the drill rigs to the office buildings. Barnhart Crane had agreed to provide the lighting.

Mr. Holmes indicated that there had been a problem with the original design of the injection well pads because Barnhart Crane's rigs driving over the pads had destroyed a couple. So, e2M was going to redesign the well pads to include either more gravel under the concrete pads or thicker concrete pads.

He indicated that some of the well locations identified as just outside a building footprint in the Remedial Action Work Plan (RAWP) were actually within the building. So, e2M shifted the monitoring wells to keep them outside of buildings and away from structures. The wells were shifted the same amount to maintain the same relation to each other.

A few monitoring wells within the well clusters in Treatment Area 1 were eliminated because of the resulting proximity between monitoring wells after relocation. This reduced the total number of monitoring wells by 5 wells, but he believed e2M maintained the desired spacing.

In Treatment Area 2, e2M did not make any change to monitoring well locations. Mr. Ballard asked about the monitoring wells numbering system, and Mr. Holmes responded that the monitoring wells were numbered in relation to the existing monitoring well or injection well they were constructed to monitor. Mr. Holmes indicated that the monitoring well depths to clay were pretty consistent with the depths provided in the RAWP.

Mr. Holmes indicated that there had been a good amount of coordination and partnering with Barnhart Crane during the construction activities, and he anticipated the partnership would continue during injection activities.

Mr. Ballard asked about the completion schedule. Mr. Holmes responded that the schedule indicated that the injection wells were to be completed by 20 September 2006, but that e2M was ahead of schedule. He anticipated that the wells would be completed in early August. The injection trailers would then be delivered and tested. Then, e2M would schedule a post-

construction conference to coincide with a BCT meeting. Injections would begin after completion of the baseline sampling and injection well testing. Mr. Holmes anticipated that injections would begin about a month earlier than the scheduled start time in October.

Dunn Field Disposal Sites Remedial Action (RA)

Mr. Price reported that MACTEC submitted the Disposal Sites Remedial Action Completion Report to the BCT on 2 May 2006. MACTEC had received comments from EPA and TDEC, but EPA had not yet provided comments on the analytical data set. Mr. Price anticipated receiving them soon. MACTEC had prepared comment responses on the comments received and Mr. Price suggested that MACTEC distribute them in order to keep the document process moving forward. MACTEC was ready to quickly prepare comment responses to any analytical data package comments with the goal to complete the report as soon as possible.

He then distributed an article from the Commercial Appeal regarding the Disposal Sites RA. Mr. Price noted that the article mentioned several disposal sites that were not removed during the RA and questioned where the materials were located. He indicated that the question could be answered by referencing the various studies, including the geophysical and trenching studies, and by noting that the areas that presented an unacceptable risk were removed. Mr. Ballard suggested that a handout be prepared for use during the next public meeting that documented the response to the question of why weren't all disposal sites removed.

Dunn Field 60% Source Areas Remedial Design (SARD) On-board Review

Mr. Perlmutter reported that CH2M Hill received EPA comments and had selected the ones that required discussion during the on-board review. The most substantial comment that required discussion was the Source Areas contaminant level contours for the Treatment Areas within which ZVI injections would occur. He then presented the project team's position, and the BCT and project team discussed the issue.

Mr. Ballard and Mr. Spann voiced the concern that ZVI injections within the 1,000 ppb contour at Treatment Areas 1 and 2 may not be sufficient to reduce contaminant levels, so that the levels ultimately reached the remedial action objectives (RAOs) through monitored natural attenuation (MNA) because the groundwater at those areas would not flow through the PRB.

Mr. Holmes interjected that the Source Areas RA would impact groundwater concentrations and that the current ZVI injection location figure based on current groundwater sampling data was not as important as the text reflecting the rationale to ultimately reduce contaminant levels to the RAOs through treatment and MNA. The team then discussed the rationale and worked to develop the necessary rationale language.

Mr. Ballard then described the process for determining the contaminant level of 50 ppb identified in the Dunn Field Record of Decision (ROD) that would be allowed to move off Dunn Field for treatment by the PRB. He confirmed that the Dunn Field ROD did not indicate the Safe Drinking Water Act maximum contaminant levels (MCLs) as RAOs for groundwater at the Source Areas. Treatment combined with monitored natural attenuation (MNA) were the remedial actions identified in the ROD to achieve the RAOs of MCLs.

The team continued the discussion of the Source Area treatment areas and how, or if, they would be impacted by the down gradient treatment areas. The team concluded the discussion and agreed with the following "go forward" approach, in which CH2M Hill would summarize and distribute via e-mail for BCT concurrence:

TTZ Delineation

ZVI injection would be used to treat groundwater beneath Dunn Field where total chlorinated volatile organic compound (CVOC) concentrations exceed 1,000 ppb. For those areas where the CVOC plume will not be captured by other down gradient treatment, any chemical of concern (COC) will be remediated to 50 ppb before passing under the western Dunn Field boundary. The 90% SARD will identify the areas projected to be outside the capture zone.

Implementation Sequencing

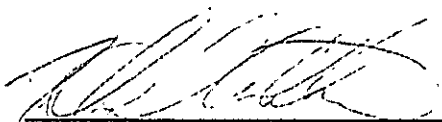
The overall sequence would follow a top down approach. The vadose zone remedies (thermal/soil vapor extraction [SVE] and SVE) would be implemented prior to the injection of ZVI into the groundwater source areas. The sequence/timing of the loess thermal/SVE and fluvial SVE systems will be determined during the 90% SARD process. The timing of these elements will consider overall response in place (RIP) objectives and schedule, construction and operation logistics, and technical issues (e.g., how would the heated loess impact the SVE system?). The ZVI injections would be completed following the completion of the loess remedy and start of the fluvial SVE system. The final injection layout would be determined based on groundwater sampling conducted at that time.

Contingency Planning

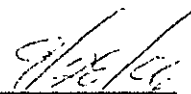
The 90% SARD will include contingencies in the event that groundwater from the areas outside the PRB capture zone has COC concentrations >50 ppb leaving Dunn Field following thermal treatment of loess, implementation of the fluvial SVE, and injection of ZVI in 1,000 ppb areas. Contingencies may include modification of the ZVI injection boring layout, continued operation of the Dunn Field Interim Remedial Action system, implementation of an enhanced bioremediation system comparable to the Main Installation system, and/or any other remedial method more cost effective than the current approach.

Next Meeting

The BCT tentatively scheduled the next meeting for 17 August 2006, depending upon the level of information to be presented, to be conducted in Memphis, TN.



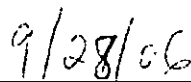
MICHAEL DOBBS
Defense Distribution Center
BRAC Environmental Coordinator
BRAC Cleanup Team Member



DATE



TURPIN BALLARD
Environmental Protection Agency
Federal Facilities Branch
Remedial Project Manager
BRAC Cleanup Team Member



DATE



09/28/06

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