



THE MEMPHIS DEPOT TENNESSEE

ADMINISTRATIVE RECORD COVER SHEET

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Final

Memphis Depot

BRAC Cleanup Team

Meeting Minutes

February 24, 2005

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Project Team	Organization	Phone
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Previous Meeting Minute Approval

The team went over and clarified information in response to Mr. Ballard's comments on the draft January 2005 minutes. Mr. Nelson indicated slug tests were performed in the Early Implementation of the Selected Remedy (EISR) area and that the results did not indicate ZVI injection had affected the hydraulic conductivity. Mr. Holmes indicated MACTEC had discussed the need for lower quantitation limits with the analytical laboratory and that selected samples were being re-analyzed.

Mr. Ballard indicated that he understood the optimization effort to reduce the Soil Vapor Extraction (SVE) treatment area, but was concerned that there was no new data to support reducing the treatment areas. Mr. Nelson said that the soil data used to distinguish the SVE treatment areas was from sampling accomplished before completing the Dunn Field Record of Decision (ROD). CH2M Hill went back to the ROD soil remedial action goals and added new sampling data that was verified during completion of the ROD that helped CH2M Hill better define the treatment area east of the railroad tracks on the hillside and west of the railroad tracks. Mr. Nelson said a description of the process to reduce the treatment area was included in the Source Area RD. Mr. Ballard indicated his Source Area RD comments included providing better rationale and a more complete explanation for reducing the treatment areas. He said that if we're deviating from what is in the ROD, then it must be well documented.

The BCT approved and signed the minutes from the January 20, 2005 meeting.

Early Implementation of Selected Remedy (EISR) Status

Mr. Holmes updated the team on post injection results. He indicated the need to review field measurements, but that initial VOC results indicated good reduction of constituents. 1,1,2,2-Tetrachloroethane (PCA) seems to degrade somewhat slower than the Trichloroethene (TCE). Mr. Holmes indicated that sampling results from the up gradient wells showed good reduction of TCE in MW150, but not much reduction in PCA. Mr. Holmes then turned to the down gradient wells and indicated good contaminant reduction in MW158A (screened in upper portion of fluvial), but saw no change in lower portion of fluvial in MW158 (screened at bottom of fluvial). Initial concentrations were much lower in MW158 than in MW158A and the injections in that area were targeted toward the upper zone.

Mr. Holmes said he had looking at the difference in the amount of iron injected between the Zero-Valent Iron (ZVI) Treatability Study (TS) and the EISR. In the TS, the injection borings were 27-30 feet apart and had a good bit of overlap in the estimated injection zones. In the EISR there was 50-80 feet between injection borings with no overlap in the areas of injection. Mr. Holmes reported that he had calculated the mass per foot of vertical treatment zone as well as the mass per cubic foot in the approximate area of injections. The goal of 1,350 pounds of ZVI injected per 2 foot interval in each borings was met on average and that it provided good data for the Source Area RD injections.

Mr. Ballard asked if the information translated into more ZVI per boring, or more borings. Mr. Holmes indicated it meant a little more of each. Mr. Holmes indicated that in the Source Area RD Mr. Nelson was looking at a 60-foot radius per injection point. At the .5% soil to ZVI mass ratio level, Mr. Nelson was evaluating the possibility of increasing the amount of iron to inject. Mr. Holmes continued that MACTEC looked at the .5% ratio in the EISR and determined that was more than what was actually injected during the TS. Mr. Ballard asked for Mr. Nelson to confirm that the Source Area RD was looking at a ratio of .5% and that the TS actual ratio was .38%. Mr. Nelson said that ARS went into the TS with a .5% goal and that the goal was met based on the initially estimated injection radius of 17 feet. The radius of injection went out to 25 feet and the TS injections did not quite reach .5%. Mr. Ballard indicated that the Source Area RD should state the criteria and the field activities should meet the criteria.

Mr. Nelson indicated the need to compare the TS results with the EISR results, and then he would reevaluate the soil to ZVI ratio. For now, Mr. Nelson was comfortable with a .5% ratio with a 25-foot radius of injection. Mr. Ballard clarified that if the Source Area RD goal was to reach .5%, then the field team needed to achieve that goal. He asked if the post injection results from the March sampling would change the ratio calculations. Mr. Nelson replied that the results would probably not change the ratio of .5% with a 25-foot radius.

Mr. Morrison suggested that MACTEC optimize the number of injection points. Mr. Holmes voiced confidence that the Source Area RD included sufficient injection points, but that he was concerned about optimizing the amount of iron to inject. Mr. Spann asked if the field team identified iron going around the packers. Mr. Holmes did not recall hearing about that, but that he would confirm with the field team leader.

AI: MACTEC to check about injection packers losing seal and iron moving around the packers.

Off Depot Remedial Design Status

Mr. Nelson reported that CH2M Hill was reviewing the Off Depot RD scenarios distributed to the BCT on Tuesday, February 22, 2005. Mr. Nelson reported that CH2M Hill was evaluating the Permeable Reactive Barrier (PRB) thicknesses suggested by ETI, the vendor that conducted the PRB Bench Scale TS, and by GeoSierra. Mr. Nelson indicated he had recently received the final PRB Bench Scale TS from ETI and that ETI had suggested a certain wall thickness.

With the two scenarios at MW54 and at MW77, ETI suggested a 0.6 foot thick wall at MW54 and a 1.3 foot thick wall at MW77. Mr. Nelson indicated there was a difference between what CH2M Hill's scenarios indicated and what ETI suggested. He continued that GeoSierra disagreed with ETI's model of residence time at MW77 as it was longer than what they were seeing. GeoSierra also disagreed with ETI's use of aquifer porosity in determining PRB wall thickness. Mr. Ballard indicated that groundwater would not move any faster than what the aquifer was transporting to and away from the wall, so it made sense to assume the porosity of the wall would be the same as the aquifer. Mr. Nelson continued that GeoSierra also disagreed with ETI's half life calculation, which made the wall too thick. Therefore, CH2M Hill's scenarios present PRB walls that were thinner than what ETI suggested. CH2M Hill will continue to evaluate the ETI and GeoSierra information.

The team discussed the need for a treatment area west of MW130 (northeast corner of Dunn Field). Mr. Ballard confirmed that at this point he did not see the need for a treatment area there. Mr. Nelson asked if treatment at this area was warranted or needed. Mr. Ballard indicated that as a contingency area it should be noted as such in the Off Depot RD. He continued that at this point the team does not know the identification of the contaminant source flowing onto Dunn Field at MW130. Mr. Nelson continued that at some point the team must deal with the off-site contamination moving on-site in order to transfer that portion of Dunn Field. Mr. Nelson indicated that if a treatment area might eventually be required at MW130, then he would like to include the area in the Off Depot RD.

Mr. Holmes interjected that MACTEC would like the MW130 treatment area in the Source Area RD in order to note it in Operating Properly and Successfully (OPS) determination. Mr. Ballard said that in order to achieve OPS, either the source must be identified and the PRP(s) come under an enforceable order or DLA must undertake remediation of the plume upgradient of Dunn Field. Mr. Spann indicated that the TDEC and EPA have started a pre-screening investigating of the contaminant plume and were calling it the Wabash Avenue investigation. He said that EPA had pulled funding from this pre-screening site, so the investigation was currently on hold.

In reviewing the CH2M Hill scenarios for treating the plume at MW130, Mr. Ballard indicated that lactate would dissipate and lose effectiveness after the initial injections, so it would not be an effective solution. Mr. Ballard again voiced the need to identify the PRP and to have some kind of order identifying them as responsible for the contaminant plume cleanup before bringing closure to the Depot's responsibility for treating the on-site portion of the plume. Mr. Holmes recalled from the last meeting the discussion to pursue some remedy, implementing the remedy, and then moving forward with transfer. He indicated that if EPA would not concur with a transfer under those circumstances, then it did not make sense to do implement any kind of treatment at MW130 until resolution of the PRP issue.

Mr. Nelson described Scenario 1 (S1) and indicated there was not much cost difference between PRB with ZVI vs. PRB with lactate injections as you have to re-inject lactate on a regular basis.

S1 costs combined with Source Area RD costs were close to costs identified in the Dunn Field ROD.

Mr. Nelson described Scenario 2 (S2) and indicated there was again not much cost difference between PRB with ZVI vs. PRB with lactate. He indicated CH2M Hill could move some of the ZVI injection points to the north side of the railroad tracks to treat the small portion of the plume under the tracks.

Mr. Nelson described Scenario 3 (S3) and indicated the cost was significantly dollars higher than S1 or S2, but that S3 would help move to natural attenuation earlier.

Mr. Dobbs indicated that after yesterday's project team discussions, the team suggested implementing S2 as it reduces the plume mass, it keeps the PRB in accordance with the ROD, and its costs were consistent with the ROD. Mr. Ballard voiced more confidence in PRB vs. ZVI only, but asked what made S2 more desirable to DLA than S1. Mr. Dobbs responded that the depth to groundwater in the S2 treatment area was less than at the S1 treatment area, the aquifer itself was thinner at the S2 treatment area, and that groundwater flow was slower at the S2 treatment area than at the S1 treatment area. Mr. Holmes interjected that S2 would also bring treatment closer to the source.

Mr. Ballard indicated that the PRB length should meet the ROD criteria and extend from each side of the 50 ppb contour. Mr. Nelson responded that the S2 PRB length was very close to meeting the 50 ppb contour. Mr. Nelson asked for input regarding the remedial action objectives of everything down gradient of the PRB meeting the Safe Drinking Water maximum contaminant levels (MCLs) as it affects the PRB thickness. Mr. Nelson will design to levels indicated on Table 2-21G in Dunn Field ROD.

Mr. Ballard suggested completing the ZVI injections before installing the PRB wall to ensure the ZVI injections do not affect the PRB wall integrity.

Mr. Holmes asked what levels must be achieved to show OPS and if there should be a projection in the RD of the time frame. Mr. Ballard responded that the purpose of OPS was to allow for transfer and as this RD was to treat offsite contamination it would not affect transfer.

The BCT agreed to table discussion on the MW130 treatment area until Mr. Ballard could discuss the situation with the EPA attorney. Mr. Ballard suggested that since the DSMOA with TDEC provided funds for technical support, that it may be cost effective to pay TDEC to identify the PRP instead of including it in the Off Depot remedial action.

AI: Mr. Ballard to discuss off-site contaminant plume PRP identification issue with EPA attorney as PRP identification apparently will not occur this fiscal year.

Dunn Field Groundwater Model

Mr. Nelson reported that the CH2M Hill modelers were using MODFLOW with a 4 layer model. He indicated there was some debate regarding Layer 2, the clay layer under fluvial aquifer. Since Layer 2 was not continuous, there was some debate that it should be included with Layer 3, the intermediate aquifer. Layer 4 was the Memphis Sand. He indicated there was also concern about those areas where there was not good definition and that the model would struggle in areas such as at MW40 and MW43. For this model, CH2M Hill assumed MW40 was screened in the intermediate aquifer based on boring logs, previous BCT discussions and the conceptual model

developed several years ago for Dunn Field that included the difference in groundwater flow from MW170 to MW40.

Mr. Nelson continued that if the model indicated water flow to MW40, then it would be prudent to install more wells to determine if connection exists to the Memphis Sands. He indicated that the dramatic water drop from MW169 to MW40 indicated to him that it was more than an erosional feature. He said that for points of compliance, the model may indicate more wells northwest of MW40 even though the plume does not appear to be moving in that direction. He indicated the preliminary model should be ready next week.

Mr. Nelson thanked Mr. Spann for providing the Allen Well Field Wellhead Protection Plan. He indicated the plan provided good data to be used in model on the Memphis Sand aquifer. He also indicated that the western edge of the Main Installation and the southwestern corner of Dunn Field were included in Zone 2, the 10-year travel plan assuming the conditions within the MLGW model of groundwater flow from southeast to northwest.

Mr. Nelson stated CH2M Hill would provide initial model results at the April BCT meeting.

AI: CH2M Hill prepare model for distribution at April 21, 2005 BCT meeting.

BRAC Cleanup Plan Version 8

Mr. Ballard reported that on February 10 he sent an approval letter to Mr. Dobbs and with the schedule dated February 9 included as Figure 5-1 he had no further comments. The BCT agreed to consider the February 9 schedule as the final. Mr. Dobbs will forward EPA's approval letter to MACTEC.

Source Areas Remedial Design

Mr. Nelson reported that CH2M Hill was working EPA comments and that the next revision was scheduled for distribution to the BCT on June 7, 2005. Mr. Ballard requested that Mr. Nelson send him the response to comments before the next revision. Mr. Nelson agreed.

Mr. Nelson indicated that CH2M Hill recently conducted pressure testing of the loess points to determine if the old fracture points could be expanded and the test returned good results. The design will include a pressure injection and removal with fracture pipes at the top and the bottom of the loess. The team discussed evaluating alternative enhancements because the moisture in the loess reduced air permeability.

Mr. Nelson continued that CH2M Hill team thought that as the SVE system dried the loess, the SVE system would become more effective. Mr. Nelson reported that the team was designing the system to install pipes in the loess that could be used for extraction, but that the pipes would not be used for extraction at first. Mr. Dobbs directed Mr. Nelson to run the costs of some alternatives, such as heating the soil, in case the SVE failed to achieve remedial action goals.

AI: Mr. Nelson to send Mr. Ballard responses to internal comments prior to distribution of next document revision.

AI: Mr. Nelson to calculate costs of alternative SVE enhancements.

Disposal Sites Remedial Action Schedule

Mr. Holmes reported that the pre-construction meeting was scheduled for March 3 at Building 144. Mr. Spann will attend for TDEC. Mr. Holmes indicated that the MACTEC team had

discussed disposal requirements with TDEC. He also indicated the team had discussed backfill requirements with Mr. Ballard and that he indicated that if it the backfill site was an undisturbed site, then collect some samples, note condition of site with pictures, etc., and if nothing stands out, then it was alright to use it as backfill without further sampling. Mr. Holmes said backfill requirements would be discussed at the pre-construction meeting.

Mr. Holmes asked about pre-characterizing some of the soil in excavation to streamline the disposal process, so soil could go directly to disposal instead of excavating and stockpiling it saving a significant amount of handling time. Mr. Holmes reported that initial discussions with the landfill indicated they could use data from the pre-design investigation samples. He continued that MACTEC must still submit the disposal request to TDEC.

Mr. Spann indicated that the Solid Waste Division must approve characterization for disposal and that from past experience Solid Waste Division would not allow pre-excavation characterization because technically it would not be a waste until it was removed. Mr. Holmes must finalize the process, but wanted BCT approval of the proposed process. Mr. Ballard stated a work plan addendum must be provided for review before giving his approval. Mr. Spann directed MACTEC to coordinate with the TDEC Memphis Field Office as they handle these things locally.

Main Installation Remedial Action Work Plan

Mr. Holmes reported MACTEC was responding to Mitretek comments and that the Rev. 0 would be distributed to the BCT on Monday, February 28. He will distribute two (2) copies to Mr. Spann and one (1) copy to Mr. Morrison. Mr. Holmes will place the Main Installation RD on the diskette with the work plan for Mr. Spann so he can review the work plan in context of the RD.

Mr. Morrison brought up issue of obtaining Adobe Acrobat 6 for Mr. Spann. Mr. Morrison and Mr. Dobbs will discuss the DSMOA in terms of obtaining Adobe 6 using those funds. Mr. Dobbs asked Mr. Nelson to speak with Mr. Bruce Railey and request that COE buy the license as they did the last time. In the meantime, Mr. Spann will locate Mr. Morrison's former computer at the Memphis Field Office and use it. Mr. Ballard offered to provide Mr. Spann computer support in using the program to comment.

FOST 4

Mr. Holmes reported that the public comment period ended February 23 and that no public comments were received. Mr. Dobbs signed the final FOST 4 and MACTEC distributed it to the Department of Army (Hampton Road) for signature.

Interim Remedial Action Groundwater System

Mr. Holmes reported that recovery wells RW2 and RW5 were down due to an unspecified electrical problem. He continued that MACTEC was awaiting funds in order to evaluate and to repair the problem. Mr. Morrison asked when the system would no longer operate. Mr. Holmes replied that it would operate for about two more years, until implementation of the Source Area RA.

TDEC Personnel Change

Mr. Morrison reported that Mr. Spann would take over the project manager role for TDEC on the Memphis Depot program. Mr. Morrison hoped that Mr. Spann would transition into the BCT

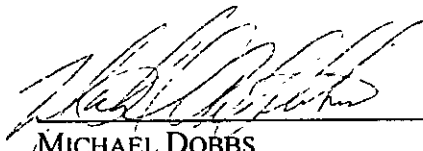
member in the August/September 2005 timeframe. Mr. Morrison will distribute a letter officially turning BCT duties over to Mr. Spann at the appropriate time.

EPA Region IV Conference

Mr. Dobbs indicated the EPA Region IV conference was scheduled for the end of June and suggested that if anyone had ideas for a white paper presentation, to please forward it as there were many successes at the Memphis Depot. Mr. Nelson indicated he had some ideas.

Next Meeting

The BCT confirmed the next meeting to be held in Memphis, TN on March 24, 2005, with the project team meeting scheduled for March 23. The BCT planned to conduct a BCT and Restoration Advisory Board meeting on April 21 in Memphis. The BCT planned to conduct a BCT meeting on May 19 in Atlanta, GA.



MICHAEL DOBBS

Defense Distribution Center
BRAC Environmental Coordinator
BRAC Cleanup Team Member

3/24/05

DATE

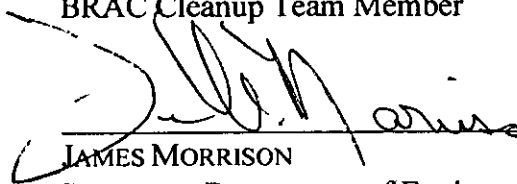


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3/24/05

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