SITE REVIEW MEETING NOTES
FORMER DEFENSE DEPOT MEMPHIS, TENNESSEE
9 February 2012

CONFERENCE CALL PARTICIPANTS

Army, Base Realignment and Closure Division (DAIM-ODB): Carolyn Jones, Jennifer Gibson

CALIBRE: BEC - Joan Hutton

TDEC Division of Remediation, DDMT Project Manager: Jamie Woods

U.S. Environmental Protection Agency, Region 4, DDMT Project Manager: Turpin Ballard

HDR EOC: Tom Holmes, Angela Clark

MAIN INSTALLATION

Restoration status: Long Term Monitoring

2011 MI Annual LTM Report submitted to EPA and TDEC 1/27/12.

Injection and performance monitoring well sample results collected December 2011; preliminary results and recommendations

Discussion:

2011 MI LTM report - LTM consisted of semiannual sample event in April (64 wells) and annual event in October (96 wells).

Some rebound in concentrations of parent compounds in TTA-1 and TTA-2. Concentrations in West-central plume and Sentinel wells remained at reduced levels following decrease in 2009. PCE concentrations in most West-central plume wells had decreasing trends, but many Sentinel wells had increasing trends.

Increases in TCE at background well MW-143, west of the Building 835 plume, and adjacent sentinel well, MW-253, was discussed. A new fluvial aquifer well recommended to confirm the upgradient limit of the TCE plume. IAQ well, MW-253, recommended for abandonment because it is not appropriately located to monitor migration of contaminants from the window. Soils at MW-253 differ from the other IAQ wells. The clay below the fluvial aquifer was thinner and contained more sand; the well was screened in a relatively thin sand layer between two clay units.

Mr. Ballard noted the screened interval at MW-253 may be in communication with the release and asked about the depth relative to MW-143. He will look at the relationship between the two wells and address in report comments.

Mr. Woods noted potential for activities at Barnhart Crane or other waste generators in the area to impact groundwater. Barnhart Crane was a large quantity generator in 2000, now small quantity generator. Mr. Holmes stated that initial review by HDR indicated wastes were non-halogenated solvents which would not include TCE.

Mr. Ballard stated that travel time to groundwater could rule out Barnhart Crane. Following question from Mr. Ballard, Mr Holmes stated that proposed MW-257 would be a fluvial aquifer well.

CT isopleths show the plume at TTA-2 extending to the southwest, consistent with the groundwater contours. An additional fluvial aquifer well southwest of TTA-2 recommended to clarify the direction and extent of contaminant migration.

Mr. Ballard stated that he commented on the shape of the TTA-2 plume as shown in previous reports. He asked if an additional well would be installed if CVOCs were above MCLs at proposed well MW-259. Mr. Holmes said recommendations would depend on results.

Two locations near the upgradient end of the window had increasing concentrations in 2011, MW-107 and MW-214A/B. An upgradient fluvial aquifer well was recommended.

In addition to the new wells and well abandonment, a few changes to well classification and sample frequency were discussed.

A change from low-flow sampling to passive diffusion bags (PDBs) for MI LTM was discussed. PDBs have been used for most Dunn Field monitoring wells since 2001. Mr. Ballard supported the change and suggested the change was overdue.

EBT baseline samples - December 2011 EBT baseline samples were collected from 49 injection wells and 24 performance monitoring wells in TTA-1 and TTA-2. The isopleths are similar to those from 2011 LTM, but provide additional detail showing residual effects from EBT.

Results show rebound in concentrations of parent compounds - increasing concentrations of PCE in all areas, TCE in TTA-1S and CT in TTA-2. Concentrations have returned to pre-EBT baseline levels in TTA-1N. Concentrations in TTA-1S and TTA-2 are approximately one-third of pre-EBT baseline levels on average.

Additional EBT is recommended to improve progress toward groundwater remedial action objectives, decrease time required for LTM and reduce potential impacts to the Memphis Aquifer. Based on performance monitoring and LTM since EBT was implemented, rows of injection wells in the treatment areas not considered necessary. Higher concentrations of sodium lactate in the injection solution can be used in fewer wells and less frequent injections. Monitoring wells will be used to expand the treatment areas as done previously. Performance monitoring will be limited with success of additional EBT determined through LTM outside the treatment areas.

Figures showing recommendations for injections, performance monitoring/LTM, and abandonment were discussed. Mr. Ballard expressed concern that remaining wells may not be sufficient for performance monitoring. He suggested flow paths be identified by tracer study prior to selecting wells to abandon. Mr. Holmes stated that the rebound information and results from previous EBT monitoring was sufficient. Primary evaluation would be through LTM.

The final EBT injections were discussed by Mr. Woods and Mr. Ballard with Mr. Holmes replying that the last injection occurred in Feb 09 and that the last few rounds included carbon source and biological enhancements.

Mr. Ballard asked about the source at west-central well MW-203A/B; it could result from both migration from TTA-1 and a small source area not identified during the previous source inspection (membrane interface probe and soil samples). He also noted that monitoring wells used for injection to increase spatial coverage could not be used for performance monitoring.

SITE REVIEW MEETING NOTES
FORMER DEFENSE DEPOT MEMPHIS, TENNESSEE
9 February 2012

Action Items:

HDR is to submit EBT Baseline report to DA for review prior to submittal to EPA and TDEC.

Mr. Ballard and Mr. Woods will provide comments on the reports and recommendations after their review.

DUNN FIELD

Restoration status: Fluvial SVE operations (Year 5); AS/SVE operations (Year 3); Off Depot Long Term Monitoring

Fluvial SVE

Fluvial SVE Annual Operations Report, Year 4 submitted to EPA and TDEC 12/5/11.

Fluvial Soil Vapor Extraction Year 5, 1st Quarter Report (Operations Summary #18) for operations August through October 2011 and quarterly vapor sampling, submitted to EPA and TDEC 1/4/12.

Discussion:

FSVE Year 4 Report - System uptime was 92%, not including shutdown for rebound test. 20 pounds of VOCs were removed during Year Four operations and 4,023 pounds since start up.

Rebound test October 2010 to January 2011. PID readings did not increase, but vapor sample concentrations were higher, indicating residual VOCs remain in fluvial soils, primarily at TA-3 (SVE-F) and TA-4 (SVE-G).

Soil samples were collected in November 2010; RAO was met.

Vadose zone model estimated time for groundwater impacts after FSVE shutdown – 60-90 days for VOCs in fluvial soil and 2-4 years for VOCs in loess.

Only SVE-F and SVE-G operated April to July 2011. Groundwater samples collected from 14 wells near SVE wells in July. No CVOCs detected above MCLs or TC for TeCA.

FSVE Y5Q1 Report - System uptime was approximately 98.5% for quarter (August through October 2011) Single blower operated due to a problem with Blower #1 - averaged 566 scfm. System influent total VOC concentrations were 234 ppbv with TCE and CF the primary CVOCs. Influent emission at 0.003 pounds per hour with approximately 7.6 pounds of VOCs removed during the quarter.

FSVE operations will continue through 7/31/12.

Mr. Woods asked about previous VOC extraction rates; they were much higher during the first months of operations, multiple pounds per hour.

Mr, Ballard asked if shutting down the the SVE system sooner in order to see potential for rebound had been considered as opposed to continuing operations through July 2012. Mr. Holmes stated that continued treatment was a more conservative option and more cost-effective based on the the task order requirements.

SITE REVIEW MEETING NOTES
FORMER DEFENSE DEPOT MEMPHIS, TENNESSEE
9 February 2012

AS/SVE

Off Depot Air Sparge Soil Vapor Extraction Year 2, 3rd Quarter Operations Report for operations July through September 2011 and semiannual groundwater sampling submitted to EPA and TDEC 12/15/11.

Discussion:

AS/SVE Y2Q3 Report - Quarterly report for July through September 2011. System operated with AS compressor and SVE blowers 3-4 days per week; only one SVE blower remainder of time. System was operated with the AS compressor and a single blower about 25% of the time due to problem with the variable frequency drive (VFD) for Blower #1. Vacuum at VMPs indicated capture with one or both blowers operating.

VOC effluent emission at 0.001 pound per hour (lb/hr) in the quarter. The AS/SVE system removed approximately 1.5 pounds of VOCs in the quarter and 74 pounds of VOCs since startup. AS/SVE operations will continue until upgradient concentrations are less than 50 µg/L for each CVOC.

Mr. Ballard suggested HDR consider reducing the number of sparge points based on areas exceeding the RA goal; could also reduce extraction rates for SVE. The potential for AS operations to impact groundwater flow through changes in water level and air bubbles was also discussed.

Off Depot LTM

Off Depot Annual Groundwater Monitoring Report – 2011 submitted to EPA and TDEC 2/8/12

Discussion:

2011 Off Depot LTM report – 36 performance monitoring wells (PMWs) sampled in March and September; all 57 LTM wells sampled for biennial event in March.

Continued significant reduction of CVOC concentrations in groundwater. Highest total CVOC concentration decreased from 12,219 µg/L in April 2007 to 311 µg/L in September 2011.

No LTM wells contained individual CVOC concentrations above 50 µg/L. Only three PMWs exceeded the treatment goal in September 2011.

LTM wells and PMWs generally had stable/no trend or decreasing/probably decreasing trends. Increasing trends at a few wells indicated potential plume diversion, but concentrations are low and any diversion limited.

Only 5 LTM wells had CVOC concentrations above an MCL or the TC for TeCA. In September PMW samples, an MCL or the TC for TeCA was exceeded for one or more CVOCs in 17 wells; TeCA and/or TCE was one of the exceedances in each well. Isopleths for primary CVOCs from March sample results reviewed. Only TeCA and TCE above the cleanup goals in multiple wells; highest concentrations were upgradient of the AS/SVE system.

Recommendations for 2012 LTM were reviewed. PMWs will be incorporated in LTM as performance wells, except 3 PMWs screened in the IAQ classified as sentinel wells. Water level-only wells also incorporated into LTM with appropriate sample frequencies. 32 wells recommended for abandonment with 82 remaining LTM wells. A figure showing recommendations was reviewed.

Mr. Ballard was concerned that remaining wells may not be sufficient for compliance monitoring.

Mr. Ballard suggested that wells NE of Dunn Field be maintained to document migration of the off-site contaminant plume. The sample results would be needed for covenants in the property transfer. Mr. Ballard also commented that the well abandonments could impact monitoring potential rebound and contaminant migration. Mr. Holmes stated that the proposed LTM wells addressed these concerns; several wells were located off-site and on Dunn Field to the NE and there was redundancy in existing wells.

Mr. Ballard noted that RAOs require concentrations below MCLs and if multiple contaminants are present, then target concentrations have to be met or risk assessment performed. The appropriate time would be after FSVE shut down and sufficient time for rebound time passed.

Action Item:

Mr. Ballard and Mr. Woods will provide comments on the LTM report and recommendations after completing their review.

ADMINISTRATIVE AND COMMUNITY RELATIONS SUPPORT

2012 Site Management Plan, submitted to EPA and TDEC 5/23/11

Discussion:

The site completion activities in the SMP were briefly discussed.

5 year review will begin in March 2012.

Office in the DRC building is scheduled to close in June, information repository will be moved to TDEC.

Mr. Ballard was pleased to see the 5-year review schedule had a draft submittal in July 2012. He suggested the report focus on action items from the previous review. Mr. Holmes noted that information was included in the SMP per a previous comment.

Action Item: None

OTHER ISSUES

No other issues were raised.