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THE MEMPHIS DEPOT
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ADMINISTRATIVE RECORD
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DDMT Response to U.S. Army Environmental Center Comments on the Draft Record of Decision for Interim Remedial Action of the Groundwater at Dunn Field (OU-1)

The following is DDMT's response to AEC's comments on the subject document. Please reference the February 22, 1996, letter from Paul Wojciechowski of AEC to Christine Kartman of DDMT. AEC's comments in paragraph 2 of the letter are provided below with DDMT's reply.

AEC Comment

2.a No information was provided on the assumptions made for determining the cost estimates, particularly the operation and maintenance costs. We assume that 30 years was used as the operating time. The total time of operation should be included.

DDMT Reply

Assumptions used in the IRA ROD are provided in the Engineering Report–Removal Action for Groundwater prepared by the Huntsville Division COE (CEHND) and Engineering Science, Inc., St. Louis, Missouri (ES), August 1993. ES used a 10-year operating period. In November 1994, the title of this document was revised to "Focused Feasibility Study: Dunn Field" as agreed to by EPA and TDEC. Subsequently, in the Proposed Groundwater Action Plan prepared by CEHND and CH2M HILL in December 1994, the estimates were revised to use a 30-year operating period and 2.8 percent discount rate to calculate present worth.

The Proposed Plan also states that cost information will be evaluated further during design and implementation of the IRA. The costs are based on preliminary assumptions that will be verified during remedial investigation (RI) and IRA design activities. The estimates were made without detailed engineering data and are generally expected to be accurate within plus 50 percent and minus 30 percent. The costs do not represent government estimates for procurement.

The actual time of operation will depend on many factors including the final remedy selected, final remedial goals that must be met, performance of the remediation systems, actual subsurface conditions, ultimate fate and transport of the constituents, degree of interconnection between the shallow Fluvial Aquifer and deeper Memphis Sands Aquifer, and so forth. An estimate of the period of operation will be made during the final remedy selection process. Please keep in mind that the selected IRA may not be the ultimate remedy selected to preclude migration of contaminants from Dunn Field. This will not occur until after the RI at Dunn Field is completed, potential source areas are identified, and remedial alternatives are evaluated. Then a preferred alternative is proposed to the regulatory agencies and public for acceptance.

AEC Comment

2.b. Alternative 8 assumes that treatment is not necessary. However, the costs are the same as for alternative 3 that includes treatment. This should be clarified. Since the City of Memphis Sewer Use Ordinance does not allow discharge of volatile organic compounds in the municipal system without written permission, it should be assumed for cost estimating purposes that treatment would be required.

DDMT Response

DDMT has held several discussions with the City of Memphis regarding sewer discharge permit requirements and allowable discharge limits. The city recognizes that this discharge will contain VOCs. A draft permit application has been submitted that includes limits for the constituents of concern. Because the wells will be along the leading edge of the plume where constituent concentrations will be low, we do not anticipate that proposed permit limits will be exceeded. When groundwater recovery begins, DDMT will monitor the discharge to verify permit compliance. If treatment becomes necessary, the City has indicated that the system could continue operating until treatment system installation is complete. Thus, although the selected alternative may eventually require a treatment system, no treatment system needs to be designed or constructed until the proposed extraction system is started up, operated, and the concentration of contaminants allowed to stabilize.

Please see the reply to 2a above for additional information on anticipated cost estimate accuracy. The accuracy of the estimate will improve with completion of the IRA design.

AEC Comment

2.c. It is Army and Air Force policy to look at natural attenuation as one of the alternatives. While not DOD policy, you may want to include this option as a separate alternative and in conjunction with one of the other alternatives with the on-site extraction wells.

DDMT Response

One of the driving forces behind installation of the proposed IRA is that contaminants have been found in the upper aquifer at the site in a groundwater depression. Insufficient data is available to determine the exact cause of the depression, but it is hypothesized that the depression may be indicative of a connection between the upper aquifer with the Memphis Sands aquifer below. The Memphis Sands aquifer is the drinking water aquifer used by the City of Memphis and the nearest drinking water supply wells are located less than one mile downgradient from the apparent interconnection. At this time, the community surrounding DDMT is expecting the IRA to be implemented in accordance with discussions in the public hearing that was held in December 1994. The IRA is intended to stabilize the site until a permanent remedial action is identified. The ongoing installation of additional monitoring wells and future groundwater sampling efforts will further clarify the nature and/or existence of the connection to the Memphis Sands.

DDMT will evaluate remedies as required by Comprehensive Environmental Response, Compensation, and Liability (CERCLA) guidance and DoD, Defense Logistics Agency (DLA), and Army Policy. Other remedies may include, but are not limited to, source removal, soil vapor extraction (SVE), in-situ treatment, horizontal and vertical barriers (capping or slurry walls), groundwater pumping, and long-term monitoring.

For high concentrations of TCE (>1,000 ppm), natural attenuation is not an accepted remedial alternative, because vinyl chloride is one of the degradation products. Additional RI, fate and transport modeling, risk assessment, and continued monitoring will be necessary to support the natural attenuation alternative.

AEC Comment

2.d. The necessity of the interim action should be explained in context of the ongoing remedial investigation that will develop a final solution.

DDMT Response

See the replies to the comments above. The Allen Wellfield is less than 1 mile down gradient from the plume. Pumping from the wellfield is inducing a gradient in the Memphis Sands Aquifer (and possibly in the Fluvial Aquifer as well) toward the pumping wells. The degree of interconnection between the shallow and deep aquifers is uncertain. As stated in the ROD, actual or threatened releases of hazardous substances from the DDMT site, if not addressed by implementing the IRA selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, and the environment.

The RI for potential source areas at Dunn Field will not be completed for several years. If continuing sources do exist, additional contaminants will be released into the upper aquifer and will continue to migrate toward the Allen Wellfield. At this time, the EPA, TDEC, and the community surrounding DDMT are expecting the IRA to be implemented. The IRA is intended to capture any contaminants exiting the site until sources are identified and a permanent remedial action is in place.

AEC Comment

3. Request that a copy of the Record of Decision (ROD) be formally transmitted to AMC for legal review prior to signature.

DDMT Reply

DDMT will provide AMC with an information copy of the final ROD. Generation of the ROD document is a product of the BRAC/CERCLA process and follows guidelines established in the Proposed Remedial Action Plan (PRAP). The PRAP document requires Agency and Regulator (BRAC Cleanup Team) approval as well as a general public notice, comment, and meeting process. The final ROD requires only the Depot representative's signature with EPA and TDEC concurrence. Additionally, the MOU between AMC and DLA for Disposal of AMC-Owned, DLA-Operated Base Closure Properties (para. I.E.) clearly delineates responsibility for statutory compliance to DLA.

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