



# THE MEMPHIS DEPOT TENNESSEE

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## ADMINISTRATIVE RECORD COVER SHEET

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STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
MEMPHIS ENVIRONMENTAL FIELD OFFICE  
SUITE E-645, PERIMETER PARK  
2510 MT. MORIAH  
MEMPHIS, TENNESSEE 38115-1520

April 15, 1997

Commander  
Defense Distribution Depot Memphis  
ATTN: DDMT-DE (Mr. Glenn Kaden)  
2163 Airways Blvd.  
Memphis, Tennessee 38114-5210

RE: Draft Groundwater Characterization Technical Memorandum (March 1997)  
and  
Draft Groundwater Modeling Approach for Remediation Design  
for  
Defense Depot Memphis, Tennessee, TDEC/DSF #79-736, cc 82

Dear Mr. Kaden:

The Tennessee Division of Superfund, Memphis Field Office (MFO), on behalf of the Tennessee Department of Environment and Conservation (TDEC/DSF), has completed a preliminary review of the above-referenced documents received in this office on March 6 and March 18, 1997, respectively.

Pursuant to the DSMOA and FFA, TDEC/DSF is providing the attached comments. If any comment does not require a replacement page insert owing to revisions, a written response to that comment will be sufficient. Should you have any questions or concerns regarding this review please call me at (901) 368-7957.

Very truly yours,

A handwritten signature in cursive script, reading "Terry R. Templeton".

Terry R. Templeton, P.G.  
Project Manager  
TDEC/DSF-MFO

c: TDEC/DSF, NCO - file  
TDEC/DSF, MFO - file  
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United States Environmental Protection Agency  
Region 4, Waste Management Division  
100 Alabama Street, SW  
Atlanta, GA 30303

TDEC/DSF COMMENTS ON THE  
Draft Groundwater Modeling Approach For Remediation Design  
for  
Defense Distribution Depot Memphis  
TDSF #79-736 cc:82

**Draft GROUNDWATER MODELING APPROACH FOR REMEDIATION DESIGN**

**General Comments**

TDEC/DSF is relying on EPA's Technical Reviewer (USGS) for a large part of the review of this document. However, TDEC/DSF has the following general comment.

This document is notable for its brevity. Considering the lengthy preparation time and the nature of the issues involving WES' work on the groundwater model, the lack of detail and generalized, sometimes perfunctory statements contained in the report are disappointing. TDEC/DSF understands that steps are being taken to rectify these problems and improve the report. TDEC/DSF is striving to keep the proper utilization of a groundwater model in perspective. TDEC/DSF acknowledges that more detailed discussions of the geologic interpretation are contained in other reports, and that the other document reviewed in this letter is to be considered in context as part of the overall Dunn Field design remediation plan. However, closer correlation of the geologic model and groundwater model parameters in the WES report is desirable.

**Specific Comments**

TDEC/DSF has no specific comments about this version of the document.

TDEC/DSF COMMENTS ON THE  
Draft Groundwater Characterization Technical Memorandum (March 1997)  
for  
Defense Distribution Depot Memphis  
TDSF #79-736 cc:82

**DRAFT GROUNDWATER CHARACTERIZATION TECHNICAL MEMORANDUM**

**General Comments**

TDEC/DSF acknowledges this document as an interim submittal of data collected in January and February 1996. TDEC/DSF does not understand the delay in publishing this report, even as an interim submittal, considering that WES was ostensibly using this data as early as summer 1996 in initial phases of their groundwater modeling work. In addition, considering the nature and length of this document, TDEC/DSF views it as a Report, not a Technical Memorandum. TDEC/DSF also wishes to point out that there are numerous areas of uncertainty in the geologic interpretation discussed in this report. While acknowledging the data that do exist, some of the uncertainties may be critical with respect to planned remedial action, and more data may therefore be needed in limited areas.

Please correct all references to the Tennessee Department of Environment and Conservation as the Tennessee Department of Environmental Conservation.

**Specific Comments**

1. Statements in the March 3, 1997 cover letter from CH2MHill to Shawn Phillips, in paragraph 1 of the Executive Summary, and in Section 1.0 (page 1-2) refer to "subsurface geologic modeling" that will be presented in a subsequent Remedial Investigation Report. Is this referring to the WES modeling being done now? Please clarify.
2. *Section 1.3.2*  
Given the quantity of subsurface data on and near the facility, would it be possible to produce more detailed cross-sections as well as 3-D fence diagrams to help illustrate the geologic interpretation of subsurface geology and hydrogeology?
3. *Section 2.1, second paragraph*  
Is the depth of the referenced sandstone meant to be 104 feet at an elevation of 181 feet above mean sea level?
4. *Section 2.4*  
Is the statement about a "drawing showing new well locations" meant to refer to the several individual sketches in Appendix F? Is a CAD plot or GIS data file for this information available? Is annotation provided for the data "bust" that was previously discussed as one reason for the delay in production of the WES model?
5. *Table 2-3, page 2-10, RE: Well No. 29*  
TDEC/DSF can find no indication that it collected a split sample from this well on 2/11/96 as referenced in the table.

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6. *Section 3.4*  
Is there any data indicating the thickness of the clay below the Fluvial Aquifer at its thinnest point in the depression?
7. *Section 3.4, page 3-8, last paragraph*  
Please clarify the statement that "groundwater ... flows against the clay's paleosurface...."
8. *Table 3-6*  
Please clarify the values in the ARAR ( $\mu\text{g/L}$ ) column for certain contaminants.
9. *Figure 3-14*  
Please consider expanding the vertical scale for clarity.
10. *Section 3.6.4, paragraph 1, page 3-53*  
TDEC/DSF is not yet convinced that a "window" does not exist beneath DDMT or nearby areas.
11. *Section 3.6.4, paragraph 1, page 3-61*  
TDEC/DSF would like to point out that a sand member of the confining unit formation is not clay, and therefore would have questionable value as a confining unit. However, TDEC/DSF acknowledges that the sand member purported to not be the Memphis Sand is apparently below the confining unit.
12. *Section 3.6.4, paragraph 2, page 3-61*  
Please clarify the statement in the last sentence that a "good well seal exists across *most* of the confining clay" (emphasis added).
13. *Section 3.6.4, page 3-61, Water Quality Data heading*  
This paragraph states that "MW-36 and MW-37 are believed to be completed in the upper sands of the Memphis Sand Aquifer." TDEC/DSF acknowledges that the text states several paragraphs before and on the following page that the referenced sands may be in the Cook Mountain Formation rather than the Memphis Sand. However, TDEC/DSF believes it is somewhat misleading to attempt to use the referenced sands to try and prove two different points.
14. *Section 3.6.4, last paragraph, page 3-62*  
Should "accounting for the" be inserted between "thus" and "differences" in the last sentence?
15. *Section 3.6.5, next to last paragraph, page 3-65*  
Please clarify the phrase "MW-33 is not contaminated clean, ..." in the last sentence.
16. *Section 3.6.5, last paragraph, page 3-65*  
Please clarify the "northward component of Fluvial Aquifer flow" that is referenced. TDEC/DSF does not see the indicated northward flow direction on Figure 3-3 at the location that is apparently indicated by the text.
17. *Section 4.0, fourth bullet, page 4-1*  
The sentence "This may be due to differences in sampling technique since total (unfiltered) analyses were performed" seems to refer to the statement in the preceding sentence that inorganic concentrations were lower in 1996 sampling. If unfiltered analyses were

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performed, wouldn't *higher* concentrations be expected? Or does the sentence mean that pre-1996 analyses were unfiltered but 1996 analyses were filtered, thus resulting in lower concentrations? Please clarify.

18. *Section 4.0, last bullet, page 4-1*

TDEC/DSF does not completely agree with this conclusion and its implications.

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