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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

May 22, 1997

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

RE: Draft Background Sampling Program Technical Memorandum (September 1996) 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), reviewed the above-referenced document received in this office on April 2, 1997.

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,

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

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

TDEC/DSF COMMENTS ON THE Draft Background Sampling Program Technical Memorandum (September 1996) for Defense Distribution Depot Memphis TDSF # 79-736 cc:82

DRAFT BACKGROUND SAMPLING PROGRAM TECHNICAL MEMORANDUM

General Comments

TDEC/DSF is concerned about the submission date of this document (April 1997) compared to its publication date (September 1996). In addition, considering the nature and length of this document, TDEC/DSF views it as a Report, not a Technical Memorandum.

TDEC/DSF reserves the right to further review any or all of the statistics presented in the report.

Specific Comments

- Section 1.0, page 1-1, second paragraph Please strike the word "the" before "Section 1.1."
- Section 1.2, page 1-3, last sentence Has the referenced report been submitted to TDEC/DSF?
- Section 2.1, page 2-8, Figure 2-3
 It is noted on page 2-12 that monitoring well MW-23 was dropped as a background well.
 Should it be removed from this figure?
- 4. Section 2.2, page 2-9, first paragraph Should the word "forming" in the next to last line of this paragraph actually be "farming"?
- 5. Section 2.2.3, page 2-13, Figure 2-4 The following item in the legend has no symbol (which should presumably be an arrow): "GROUNDWATER GRADIENT DIRECTION IN THE FLUVIAL AQUIFER."
- Section 3.0, page 3-1
 The paragraph in this section does not mention groundwater data, although groundwater data is included in later sections, tables, etc.
- Section 3.1.1, page 3-2, Table 3-1 The word "anti-logarith" in the definition of "Geometric Mean" should be "anti-logarithm."
- Section 3.1.2, pages 3-1 & 3-6
 Some of the paragraphs that discuss various matrices refer to Table 3-3 and others do not (e.g., Groundwater). Please review the text and references for consistency.
- 9. Section 3.1.2, page 3-7, Table 3-3 "CRDL" is defined in the notes but not used in the table. Is a column missing from the table?

TDEC/DSF COMMENTS ON THE

Draft Background Sampling Program Technical Memorandum (September 1996)

for

Defense Distribution Depot Memphis TDSF #79-736 cc:82

10. Section 3.2.1, page 3-14, Soil section

Chromium and arsenic are referred to as "man-made" metals. Should the word "anthropogenic" be used instead in this context?

11. Section 3.2.1, page 3-15, Figure 3-1

Unlike on other similar figures, the red circles representing Total Metals are printed in the foreground and therefore obscure the underlying bar graphs that represent the Distribution of Selected Metals. In addition, although the legend indicates that bars are plotted on individual scales, scales for bars on figures 3-4, 3-5 and 3-6 are present. Please consider clarifying the legend.

- Section 3.2.1, pages 3-22 through 3-24, Figures 3-4 through 3-6
 Are the units for the red circle symbols the same as for the bars? (See Figure 3-7 for an example of units labeling for both bar and circle symbols.)
- 13. Section 3.2.1, page 3-24, Figure 3-6 It is noted on page 2-12 that monitoring well MW-23 was dropped as a background well. Should it be removed from this figure?
- 14. Section 3.2.4, page 3-3, Table 3-11 No units are provided for the data in this table.
- 15. Appendix B

Is there a reason why copies of the log book for the groundwater background sampling are omitted here?

16. Appendix D

Why is the Analytical Data Summary for groundwater omitted?

17. Appendix E

Please consider a cover page for this table that explains, among other things, the following:

a) does the total column represent total samples or total detects?

b) does the sum in the Qualifier row equal the number of detects? (the sum in some rows equals the "total" and less than the total in other rows)

- c) should qualifier definitions be annotated?
- d) is there any need for a summary per sample location?
- 18. Appendix F

There are several examples in the tables where means are provided for contaminants with no detections reported. Please clarify.

Comments from Nashville Central Office

1. The report utilized the methodology of combining site boundary data with off-site data prior to the statistical analysis on each chemical. Separate statistics should also have been run for these two data sets for comparison prior to validation of methodology. The possibility of outliers in the site boundary data set jacking up the computed mean detection value is high.

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- 2. Metals data from off-site and chemical compounds commonly deposited via vehicular traffic could represent naturally occurring and anthropogenic background respectively. Plugging in these values into the suggestion given in Comment No. 1 above could serve to verify if generic background assumptions used during Data Quality Evaluation are well suited to the DDMT site.
- 3. The DDMT comprises a large expanse of land which may undergo activities under new ownership that could disturb the soil (such as demolition and construction). The response level should consider additional pathways and fugitive dust.
- 4 Under page 3-3, will the current values in the criteria column be the remedial action levels agreed upon between MFO and DDMT?
- 5. TDSF has compiled nonparametric background metals statistics from ninety (90) Memphis area sites. Outliers were not filtered out during the survey. The data are available for your information upon request.



