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NAS WHITING FIELD
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LETTER REGARDING U S EPA REGION IV COMMENTS ON SITE 40 HUMAN HEALTH RISK ASSESSMENT SECTION OF THE REMEDIAL INVESTIGATION NAS WHITING FIELD FL
12/12/2006
U S EPA REGION IV

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW
ATLANTA, GEORGIA 30303-8960

December 12, 2006

4WD-FFB

Commanding Officer
ATTN: Sarah Reed
Naval Facilities Engineering Command Southern Division
P.O. Box 190010
North Charleston SC 29419-9010

SUBJECT: NAS Whiting Field, Florida
EPA ID# FL2170023244

Dear Ms. Reed:

The United States Environmental Protection Agency (EPA) has received and reviewed the following document:

- **Remedial Investigation Report for Site 40, Basewide Groundwater, Rev. 0, April 2003, NAS Whiting Field, Milton, FL** (Tetra Tech NUS, Inc.).

Enclosed are EPA's review comments for Section 6.0, Human Health Risk Assessment. If you should have any questions, please contact me at (404) 562-8555.

Sincerely,

Craig A. Benedikt
Senior Remedial Project Manager
Federal Facilities Branch

Enclosure

cc: James Cason, FDEP

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

61 Forsyth Street, S.W.
Atlanta, Georgia 30303

MEMORANDUM

October 31, 2006

SUBJECT: Review of RI Report for Site 40, Basewide Groundwater
NAS Whiting Field
Milton, Florida

FROM: Ofia Hodoh
Technical Support Services Section
Superfund Support Branch

TO: Craig A. Benedikt
Federal Facilities

CC: Scott Sudweeks, Chief
Technical Support Section
Superfund Remedial & Technical Services Branch

Per your request, I have reviewed the **RI Report for Site 40, Basewide Groundwater, NAS Whiting Field, Milton, Florida.** My review has focused on the human health risk aspects of the document.

General Comments

1. This document requires extensive revision regarding the risk assessment process according to current EPA methodology. Correct use of the Region 4 human health risk assessment guidance (EPA, 2000a) is strongly recommended. Specific comments will aid in directing the effort to address these inadequacies.

2. The risks should be evaluated quantitatively and qualitatively and discussed towards attaining a remedial goal as per Region 4's guidance (EPA, 2000a). Please include the tables of the remedial goal options (RGOs) for groundwater which includes federal and/or state Maximum Contaminant Levels (MCLs) values.

Specific Comments

Section 6.0, last paragraph

1. This section states that "The baseline HHRA for the evaluated EU was conducted using the most recent guidance from the USEPA…including Regional supplemental guidance". EPA recognizes that this document was produced using old and/or outdated guidance. The guidance listed in this paragraph are all replaced by the 2000 Region 4 Human Health Risk Assessment Bulletins – Supplement to RAGS (EPA, 2000a). EPA strongly recommends that all COCs identified in Table 6-7 utilize current EPA methodology. See specific comments below.

Section 6.1.2, first paragraph

1. Please change the following sentence to add "…USEPA Region 9…for tap water (USEPA, 2002), based on a residential scenario …"

Section 6.2.1.3

1. This section should be revised to comply with EPA Region 4 Guidance (EPA 1989, 2000a), concerning the calculation of inhalation risk. Please include formulas and an example for the hazards and risks calculated for the inhalation pathway. For estimating potential exposure via inhalation (*Resident Intake through showering*), the following equation should be used:

   Inhalation Concentration (mg/m^3):

   IC = CGW x K x EF x ED / (BW x AT)

   where:

CGW	=	Concentration in groundwater (mg/L)
K	=	Volatilization factor (L/m^3) (EPA, 1991)
EF	=	Exposure frequency (days/year)
ED	=	Exposure duration (years)
BW	=	Body weight (kg)
AT	=	Averaging time (days)

   Excess Lifetime Cancer Risk from Inhalation Exposures (ELCR):

   Risk = Inhalation Concentration x URF (Unit Risk Factor)

   Noncarcinogenic Health Risks (HQ):

$$\textbf{Hazard Quotient} = \frac{\textbf{Inhalation Concentration}}{\textbf{Reference Concentration}}$$

Section 6.3.1

1. Please revise this section to include carcinogenic toxicity information for inhaled COPCs identified in Table 6-4, including a separate table for cancer toxicity values via inhalation (Inhalation Cancer Slope Factors).

Section 6.3.2

1. Please revise this section to include non-carcinogenic toxicity information for inhaled COPCs identified in Table 6-4, including a separate table for noncancer toxicity values via inhalation (Inhalation Reference Concentrations).

Table 6-1

1. The incorrect value was used to screen 1,2-dibromomethane (EDB) in groundwater. The correct screening value for EDB in tapwater is 5.6E-3 ug/L (EPA, 2004d). Please revise the Tables, corresponding calculations and risk assessment results (Section 6.5), if necessary.

Table 6-5

1. EPA has an updated cancer slope factor (CSF) for EDB. For EDB in groundwater, 2E+0 $(mg/kg/day)^{-1}$ should be used as the CSF. (IRIS, 2006). Please revise the Tables, corresponding calculations and risk assessment results (Section 6.5), if necessary.

Table 6-6

1. EPA has a reference dose (RfD) for EDB. For EDB in groundwater, 9E-3 (mg/kg-day) should be used as the RfD. (IRIS, 2006). Please revise the Tables, corresponding calculations and risk assessment results (Section 6.5), if necessary.

Section 8.1, 2nd paragraph, 1rst bullet

1. Please change the following sentence "The following chemicals were identified as chemicals of ~~potential~~ concern:…".

Appendices

1. The RAGS Part D Tables are missing, please include in final document.

References:

EPA 1989. *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual, Part A*. Interim Final, EPA OERR, December 1989.

EPA 1991. *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual, Supplemental Guidance*, "Standard Default Exposure Factors", Interim Final, OSWER Directive 9285.6-03, March 25, 1991.

EPA 2000a. Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins. EPA Region 4, Website version last updated May 2000. [http://www.epa.gov/region4/waste/oftecser/healtbul.htm]

EPA 2004b. *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment*. EPA Office of Superfund Remediation and Technology Innovation (OSRTI), EPA/540/R/99/005, OSWER 9285.7-02EP,

EPA 2004d. Preliminary Remedial Goal (PRGs), EPA Region 9, updated October 2004.

IRIS, 2006. Integrated Risk and Information System, National Center for Environmental Assessment, Office of Research & Development, USEPA (website [www.epa.gov/iris], updates added periodically).

If I can be of any further assistance or if you have any questions, please call me at 562-9176.