EnSafe / Allen &
a joint venture for profession

5720 Summer Trees Dr. Suite 8 Memphis, TN 38134
(901)383-9115 Fax (901)383-1743

33501.039
05.01.95 0019

N00204.AR.000929
NAS PENSACOLA
5090.3a

May 22, 1995

Attn: Ms. Allison Humphris
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, GA 30365

RE: Remedial Investigation Report: Site 39, NAS-Pensacola,
Contract #N62467-89-D-0318/059

Dear Ms. Humphris:

Please find enclosed replacement pages for the Final Remedial Investigation Report, Site 39, Naval Air Station Pensacola in Pensacola, Florida. Several copies are provided for your convenience.

If you should have any questions or need any additional information regarding this errata, please do not hesitate to call me.

Sincerely,

EnSafe\Allen & Hoshall

Henry H. Beiro
Task *Order Manager*

Enclosure

TECHNICAL REVIEW AND COMMENTS
DRAFT FINAL REMEDIAL INVESTIGATION REPORT
AND DRAFT PROPOSED PLAN
SITE 39: OAK GROVE CAMPGROUND
NAVAL AIR STATION (NAS) PENSACOLA
PENSACOLA, FLORIDA

Draft Final Remedial Investigation **Report:**

General Comment:

The negative references to USEPA Region IV in this document are inappropriate and must be eliminated. Many standard risk assessment principles are referenced as "required" by Region IV. Please revise the text to cite the specific guidance on which the USEPA comments were based, rather than USEPA Region IV. Some specific examples follow:

Page 6, Section 10.2.1, Paragraph 4:

"No further action was recommended by USEPA-for NAS Pensacola Site 30 soil, and USEPA also requested that the soil exposure pathways not be addressed in the BRA because Site 39 surface soil now consists exclusively of clean backfill material." Please delete this sentence, along with any similar statements contained in this document. Justification for elimination of this pathway should not be USEPA, but rather the absence of a complete exposure pathway.

RESPONSE:

Agreed.

Page 10-23, Table 10-5:

The text must be edited to reflect that soil exposure pathways are not addressed in the BRA because of the absence of a complete exposure pathway. USEPA doesn't recommend excluding post-removal soil from the BRA; USEPA recommends the use of soil from 0 to 1 foot below land surface in the evaluation of direct contact soil exposure pathways.

RESPONSE

Agreed.

Page 10-38, Section 10.4.2, Paragraph 1:

The basis for including this section can be found in RAGS Section 7.7.1, which indicates that a short description of the toxic effects of each chemical carried through the assessment should be presented in the main body of the text in non-technical language. Please eliminate the reference that USEPA Region IV requires brief toxicological profiles for all COPCs. Also, the reference to USEPA Region III Risk-Based Screening Table as another main source of toxicological information should be eliminated from this section. Region IV has previously indicated that these tables should not be used as a source of toxicity information.

RESPONSE:

Agreed.

This page left blank intentionally

10.2.1 Data Sources

E/A&H performed a RI of Site 39 during May and through October 1993. As part of the site investigation, soil and groundwater samples were collected and analyzed to delineate the sources, nature, magnitude, and extent of any soil and groundwater contamination.

From May 24 through May 26,1993, soil data were gathered during sampling efforts at Site 39. Six shallow borings were completed there (borings 39S01 through 39S06). Soil was sampled from the 0- to 1-foot range and at 2-foot intervals thereafter until the water table was reached.

From May 24 through September 13, 1993, four shallow and three intermediate depth monitoring wells (MWs) were installed for the groundwater investigation at Site 39. Before this no wells existed at Site 39. Four shallow monitoring wells (39GS01 to 39GS04) were completed near the water table, screening the upper level of the surficial aquifer. Three intermediate depth MWs were completed at the base of the surficial zone, screened 10 feet above the underlying low-permeability zone, and designated as 39GI05 to 39GI07.

On July 25, 1994, 864 tons of soil (approximately 500 cubic yards) were excavated from Site 39. As part of the post-excavation effort, four confirmatory soil samples were taken from the Site 39 soil layer at the base of the excavation (0- to 1-foot layer). Table 10-1 lists the identification numbers of the samples gathered during the post-excavation effort (borings 39S0008, 39S0009, 39S0010, and 39S0011). In addition to the soil sampling conducted within Site 39, one composite sample was taken from the backfill (clean sandy soil) before it was placed as excavation backfill. No further action [is] recommended for NAS Pensacola Site 39 soil, **because no COPCs were identified in the backfill material and no complete exposure pathways exist onsite.]**

Table 10-5
Exposure Pathways Summary
NAS Pensacola Site 39
Pensacola, Florida

Potentially Exposed Population	Medium and Exposure Pathway	Pathway Selected for Evaluation?	Reason for Selection or Exclusion
Current Land Uses			
Recreational Residents (Child and Adult)	Air, Inhalation of gaseous contaminants emanating from soil	No	The gaseous air pathway is not considered due to the absence of significant volatile chemicals in soil and no complete exposure pathway exists onsite.
	Air, Inhalation of chemicals entrained in fugitive dust	No	The sand grains, described as fine-medium grain quartz, are not respirable. USEPA recommends excluding post-removal soil from this BRA.
	Groundwater, Ingestion of contaminants during potable or general use	No	Groundwater is not currently used as a source of potable or industrial water at Site 39.
	Groundwater, Inhalation of volatilized groundwater contaminants	No	Groundwater is not currently used as a source of potable or industrial water at Site 39.
	Soil, Incidental ingestion	No	No complete exposure pathway exists onsite.
	Soil, Dermal contact	No	No complete exposure pathway exists onsite.
Infrequent Child Trespasser	Air, Inhalation of gaseous contaminants emanating from soil	No	The gaseous air pathway is not considered due to the ebsence of significant volatile chemicals in soil and no complete exposure pathway exists onsite.
	Air, Inhalation of chemicals entrained in fugitive dust	No	The send grains, described as fine-medium grain quartz, are not respirabla and no complete exposure pathway exists onsite.
	Soil, Incidental ingestion	No	No complete exposure pathway exists onsite.
	Soil, Dermal contact	No	No complete exposure pathway exists onsite.

Table 10-5
Exposure Pathways Summary
NAS Pensacola Site 39
Pensacola, Florida

Potentially Exposed Population	Medium and Exposure Pathway	Pathway Selected for Evaluation?	Reason for Selection or Exclusion
Future Land Uses			
Future Site Residents (Child and Adult)	Air, Inhalation of gaseous contaminants emanating from soil	No	The gaseous air pathway is not considered due to the absence of significant volatile chemicals in soil and 'no complete exposure pathway exists onsite.
	Air, Inhalation of chemicals entrained in fugitive dust	No	The sand grains, described as fine-medium grain quartz, are not respirable and no complete exposure pathway exists onsite.
	Groundwater, Ingestion of contaminants during potable or general use	Yes	The combined shallow and intermediate depth water-bearing zones could hypothetically be used as a residential water source.
	Groundwater, Inhalation of volatilized contaminants during domestic use	Yes	Groundwater is neither currently used as a source of potable or industrial watar at Site 39, nor is this groundwater projected for such uses. However, one volatile contaminant was addressed for the inhaletion exposure pathway.
	Soil, Incidental ingestion	No	No complete exposure pathway exists onsite.
	Soil, Dermal contact	No	No complete exposure pathway exists onsite.
	Wild game or domestic animals, Ingestion of tissue impacted by media contamination	No	Hunting/taking of game and/or raising livestock is prohibited at NASP at this time.
	Fruits and vegetables, Ingestion of plant tissues grown in contaminated media	No	The potential for significant exposure via this pathway is low; the primary soil contaminants in the potential root zone are gone since the excavation and removal effort. No complete exposure pathway exists onsite.

Table 10-5
Exposure Pathways Summary
NAS Pensacola Site 39
Pensacola, Florida

Potentially Exposed Population	Medium and Exposure Pathway	Pathway Selected for Evaluation?	Reason for Selection or Exclusion
Site Worker	Air. Inhalation of gaseous contaminants emanating from soil	No	The gaseous air pathway is not considered due to the absence of volatile chemicals in soil and no complete exposure pathwsy exists onsite.
	Air, Inhalation of chemicals entrained in dust resulting from construction activities such as digging	No	The sand grains, described as fine-medium grain quartz, are not respirable. No complete exposure pathway exists onsite.
	Groundwater, Ingestion of contaminants during potable or general use	No	The combined shallow end intermediate depth water-bearing zones are not likely to be used as an occupational water source.
	Soil, incidental ingestion	No	No complete exposure pathwey exists onsite.
	Soil, Dermal contact	No	No complete exposure pathway exists onsite.

at 200 μm, exposure via the fugitive dust pathway is not likely since particles greater than 20 μm are not respirable. As reported in ***Industrial Toxicology, Safety*** *and* ***Health Applications in the Workplace,*** the upper air passages are efficient in removing large particles from the inspired air, and almost all particles greater than 20 μm in diameter are filtered by the nasopharyngeal region (Williams, 1985). In addition, since the 0- to 1-foot depth soil consists of clean backfill material, no complete or potential exposure pathway exists.

for groundwater potentially used as potable water source. The available drinking water standards for compounds detected in groundwater are included in the groundwater risk characterization and risk uncertainty discussions for reference.

10.4.2 Toxicity Profiles for COPCs

[In accordance with RAGS, a description of the toxic effects of COPCs was included in this BRA.] Most information for the brief profiles below was gleaned from IRIS as a primary source, and HEAST, as mentioned in the preceding text and toxicological database information table. Another main source of information was Smith, R.L., USEPA Region 111 Risk-Based *Screening Concentrations Table*, March 1994. Any additional references are noted specifically in the profiles below (in parentheses). The profiles summarize adverse effects of COPCs and the amount of the COPC associated with adverse effects.

Aluminum is one of the most abundant metals in the earth's crust (7% aluminum), and it is ubiquitous in air and water, as well as soil. This metal is water-soluble, silvery, and ductile, which suggests its usefulness in many processes. Ingesting aluminum *can* affect the absorption of other elements within the gastrointestinal tract and *can* alter intestinal function. Aluminum *can* potentially interfere with the absorption of essential nutrients and cholesterol. Another effect on the gastrointestinal system is the inhibition of acetylcholine-induced contractions. These contractions are part of the neuro-muscular system controlling bowel muscles. The effect could explain why aluminum-containing antacids often produce constipation. Aluminum dust is moderately flammable and explosive in heat. Inhaling this dust *can* cause fibrosis (aluminosis). No data are available on an applicable SF or the USEPA cancer group. Julie Keller, USEPA Region IV Office of Health Assessment, suggested using the provisional oral RfD of 1.0 mg/kg-day. The aesthetic-based SMCL for drinking water is 50 to 200 µg/L (Klaassen, et al., 1986) (Dreisbach, et al., 1987).