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ENSAFE INC.

ENVIRONMENTAL AND MANAGEMENT CONSULTANTS

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October 30, 1998

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Florida Department of Environmental Protection

Attn: John Mitchell

Twin Towers Office Building

2600 Blair Stone Road

Tallahassee, Florida 32399-2400

NAS PENSACOLA

5090.3a

Re: **Final** Baseline **Risk** Assessment Errata,  
OU 2 (Sites 11, 12, 25, 26, 27 and 30), NAS Pensacola  
Contract # N62467-89-D-0318/059

Dear Mr. Mitchell:

On behalf of the Navy, EnSafe Inc. is pleased to submit **two** copies of the Final Baseline **Risk** Assessment errata pages for the Operable Unit 2 (Sites **11**, **12**, **25**, **26**, **27**, and **30**) Remedial Investigation Report for the Naval Air Station Pensacola in Pensacola, Florida. Responses to FDEP **comments** are also enclosed. Comments were not provided by USEPA. If you should have **any** questions or **need any** additional information regarding the document, please do not hesitate to call me.

Sincerely,  
EnSafe Inc.

Allison Dennen **Harris**  
**Task Order Manager**

Enclosures

cc: Patricia Kingcade, FDEP without enclosure  
**Tom** Moody, FDEP - NW District without enclosure  
Bill Hill, Code **1851** SOUTHNAVFACENGCOM without enclosure  
EnSafe **Inc.** file without enclosure  
EnSafe Inc. Knoxville file without enclosure  
EnSafe Inc. library without enclosure  
Administrative Record

**NAS PENSACOLA**  
Florida Department of **Environmental** Protection  
Response to Comments  
Risk Assessments Included in the Site 38 and **OU 2** Remedial Investigation Report

**COMMENT 1:**

FDEP stated that maximum detect values in groundwater must **be** used to evaluate risk from exposure to groundwater **to be** accepted by FDEP. Well by well risk estimates calculated by EnSafe should be kept in RA **as** a risk management tool.

**RESPONSE:**

For groundwater exposure pathways, the Navy will move the point **risk** estimates **into** the **Risk** Characteristic Section **of** the risk assessment and summarize the residential **risk** associated with the maximum concentrations. The risk/hazard associated with maximum concentrations will appear in the **Risk** Characterization Section **as** the reasonable maximum exposure (RME) risk/hazard **as** requested by FDEP. It was agreed that **this** will resolve all FDEP/U of F comments pertaining to the determination of groundwater EPC for both **OU 2** and Site **38**.

FDEP understands that RAGS states maximum concentrations should not **be** used and has interpreted EPA Region IV guidance to justify maximum concentrations **as** EPCs. It was also agreed that this change would not influence remedial decisions, because point **risk** estimates are provided in both **OU 2** and Site **38**.

**COMMENT 2:**

FDEP recommended including iron as a chemical of potential concern. Dr. Halmes contacted NCEA regarding the provisional reference dose for iron.

**REPOSE:**

It was agreed that the Navy **will** discuss iron toxicity in the uncertainty sections if iron exceeded the FDEP SCTL and that iron would not **be** retained **as** a chemical of potential concern. If iron did not exceed the FDEP SCTL, iron should **be** excluded **as** a chemical **of** potential concern. Consequently, FDEP **agreed** that iron should **be** excluded **as** a chemical **of** potential concern **at** Site 38.

**COMMENT 3:**

FDEP commented that molybdenum exceeded it's **SCTL and** should have been included as a chemical of potential concern in Site 38 soil.

**RESPONSE:**

Because only one sample had **an** exceedence and because molybdenum **was** not **a** target analyte and **was** not sampled for site-wide, the Tier I Partnering Group decided to eliminate the molybdenum data from the Site 38 risk assessment.

**COMMENT 4:**

FDEP stated that 1,1-dichloroethene (1,1-DCE) must be included in the Site 38 RME (site-wide) assessment. 1,1-DCE was reported at a concentration of 42 µg/L in groundwater. FDEP stated that it cannot be eliminated based on limited number of detects because of the significant level at which it was detected in one well, '1000-fold greater than the screening level of 0.044 µg/L.

**RESPONSE:**

The Navy noted that **this** change would bias the risk estimates for groundwater, **because** the maximum reported concentration would not **be** representative of the entire site. However, FDEP noted that the risk estimate for this chemical was included in the original report in the point risk estimates and agreed that this change would not influence remedial decisions and would not influence risk management decisions. The requested change **will be** made to facilitate site closure.

**COMMENT 5:**

FDEP recommended that sodium should be a chemical of potential concern in groundwater.

**RESPONSE:**

**A** risk management decision **was** made regarding **sodium as a COPC based** on the well location and depth (proximity to saltwater waterbody). FDEP stated that **wells** within 200 feet of Pensacola Bay should exclude sodium, but the **basis** was not provided in the risk assessment. FDEP/U of F and EnSafe/Navy risk **assessors agreed** that there is no appropriate **risk** assessment vehicle **to** quantitatively address exposure to sodium in the risk assessment.

**COMMENT 6:**

FDEP stated that the inhalation of volatiles from surface soil should not have been excluded from the OU 2 and Site 38 risk assessments.

**RESPONSE:**

The inhalation pathway for volatiles was screened out in the RIs. Revised risk assessments will include the **results** of this screening in tabular form.

**COMMENT 7:**

FDEP stated that the inhalation of soil particulates should not have been excluded from the OU 2 and Site 38 risk assessments. Although dust inhalation would likely contribute only **a** minor amount **to** the overall risk calculation, this must **be** demonstrated with some sample calculations.

**RESPONSE:**

Site 38: Sample calculations that illustrate this point will be provided as an appendix in the revised risk assessments, and the risk assessment text will reference the appendix.

**OU 2** Screening tables were developed to address this exposure pathway. The pathway was added as dictated by the screening results.

**COMMENT 8:**

FDEP recommended using a construction worker scenario to address exposure to subsurface soil.

**RESPONSE:**

**OU 2:** The Navy/EnSafe will develop construction worker PRGs for use as screening concentrations for subsurface soil. FDEP/LJ of F risk assessors indicated that if the soil-to-groundwater migration pathway can be eliminated through comparisons of chemical present (or not present) in each media, then construction worker PRGs would be a remedial option for subsurface soil. This will be a screening assessment only, which will contain an explanation of the assumptions.

**Site 38:** A formal risk assessment has been provided for surface soil pathways under an industrial scenario which is considered conservatively representative of construction/maintenance events as detailed in the response to Site 38 comments. Subsurface soil is considered to be soil from 2 feet to the water table. Site 38 has very few subsurface soil samples and the concentrations of chemicals associated with subsurface soil were generally lower than surface soil. FDEP/U of F risk assessors agreed that the construction worker scenario would be applicable to surface soil only at Site 38, because chemical concentrations are higher in surface soil and the water table is approximately 2 feet, thereby preventing subsurface soil sample collection from depths greater than 2 feet. As a result, FDEP/LJ of F risk assessors agreed that the default site worker would be protective of construction workers exposed to surface soil at Site 38, and no screening assessment would be necessary.

**COMMENT 9:**

FDEP makes an additional modification to the reference dose to account for dietary exposure by assuming 5 mg/day manganese would be ingested from other sources, although IRIS does not recommend this modification in the uncertainty factors or modifying factors section.

**RESPONSE:**

FDEP interprets recommendations in IRIS differently than EPA Region IV and the Navy. IRIS explicitly recommends a modifying factor of 3 when assessing environmental exposure, such as soil or groundwater. As agreed during discussions with FDEP/U of F, tables will be

footnoted with FDEP's recommended reference dose in all tables where the manganese reference dose is listed and where manganese hazard quotients are presented. FDEP's recommended reference dose is 0.023 mg/kg-day, which would double the manganese hazard quotients presented in the report. FDEP agreed that this change would not influence risk management decisions.

**COMMENT 10:**

FDEP stated that the OU 2 risk assessment must include the trespasser land use scenario.

**RESPONSE:**

In the OU 2 RI, trespasser calculations will be included in the risk assessment.

**COMMENT 11:**

FDEP stated that FI/FC modifications to chronic daily intake will not be accepted.

**RESPONSE:**

Site 38: The Site 38 risk assessment does not use the FIWC modification.

OU 2: FI/FC was incorporated in accordance with RAGS. Exposure unit areas will be clarified in the revised risk assessment.

**COMMENT 12:**

FDEP suggested assessing the acute toxicity of cadmium. An acute tox screening value for cadmium was in the process of being determined. An interim value of 0.05 mg/kg was made available by U of F in April, 1998.

**RESPONSE:**

The acute toxicity potential of cadmium will be discussed in the uncertainty section of the risk assessments.