

ENSAFE INC.

ENVIRONMENTAL AND MANAGEMENT CONSULTANTS

5724 Summer Trees Drive • Memphis, Tennessee 38134 • Telephone 901-372-7962 • Facsimile 901-372-2454 • www.ensafe.com

August 12, 1998

N00204.AR.001686

NAS PENSACOLA

5090.3a

Florida *Department* of Environmental Protection

Attn: John Mitchell

Twin Towers **Office Building****2600 Blair Stone Road**

Tallahassee, Florida 32399-2400

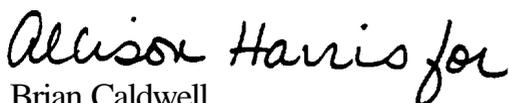
Re: Feasibility **Study Report**, Response to Comments
Site 15, NAS Pensacola
Contract # N62467-89-D-0318/071

Dear **Mr.** Mitchell:

On behalf of the Navy, EnSafe Inc. is **pleased** to submit the response to comments for **the** Feasibility **Study Report** for Site 15 at **the** Naval Air Station Pensacola in Pensacola, **Florida**. **Also** included **are** responses to USEPA's comments. If **you** should have **any questions** or need any additional information regarding the document, **please** do not hesitate to call me.

Sincerely,

EnSafe Inc.



Brian Caldwell

Task Order Manager**Enclosure**

cc: Bill Hill, Code 1851 SOUTHNAVFACENGCOM
Patricia Kingcade, FDEP
Tom Moody, Northwest District
EnSafe Inc. Ne
EnSafe Inc. Knoxville
EnSafe Inc. Library
Administrative **Record**

RESPONSES TO FDEP COMMENTS
SITE 15 FEASIBILITY STUDY
NAS PENSACOLA

Comment 1: The **FS** provides a reasonable range of alternatives for risk managers to consider. The comparative analysis, however, may be distorted. **The** volume of contaminated media is not based on adequately protective remediation goals. Balancing factors such **as** cost-effectiveness and implementability among others, may therefore not be commensurable between alternatives. This will make remedy selection **and** implementation difficult for risk managers since they **may** need to revisit the comparative analysis at an inopportune time in the project life cycle. Using volume estimates based **on** adequately protective criteria and repeating the comparative analysis will **thus** give **risk** managers better information to make decisions. Rather **than** spend the Department resources by commenting on the details of the draft comparative analysis, I suggest that the volume calculations and comparative analysis be refined first.

Response: Volume calculations **will be** refined for comparative **analysis** at a 1E-06 industrial residual risk threshold.

Comment 2: Prior Feasibility Studies from Pensacola (for example Site 38) took exception at using ARARs as remedial goals for groundwater contamination, advocating instead alternative risk-based concentrations. **This FS** rejects this approach and embraces ARARs without hesitation. **This** is interesting in light that the EPA is proposing possible changes in the current **MCL** for arsenic from 50 ug/L to somewhere between 2 and 20 ug/L. The lower level of 2 ug/L is based on an incremental excess cancer **risk** 1 in 10,000. The choice between ARARs or alternative risk-based concentrations is apparently one of expedience.

Response: This comment is noted, however, the reviewer **is mistaken**. Previous FSs from Pensacola have advocated a risk-based management decision based **on** aquifer use, but they have never preferred a risk-based concentration over a Primary MCL. They have used risk-based concentrations for **those** parameters which have a **Secondary** MCL (**such as** aluminum, iron, and manganese) or for those parameters that lack standards. The Site 38 **FS**, for example, recommended **an RBC** for 2-methylnaphthalene and bis-2-ethylhexylphthalate due to their lack of a standard.

**RESPONSES TO FDEP COMMENTS
SITE 15 DRAFT FEASIBILITY STUDY
NAS PENSACOLA**

Responses To Comments

Comment 1: In the abstract, as well as throughout the document, it states that the remedial goal for the site is at a level of **5E-06** for current or future site workers. As I have stated numerous times, the state does not accept managing risk at levels greater than **1E-06**. This needs to be corrected accordingly throughout the document. Other areas of the document where this is found are: pages **2-1, 4-26, 4-28, 4-29, 4-31, 4-32, 5-26, 5-27 and 5-29**.

Also, rather than saying a remedial goal of **1E-06**, the actual cleanup value should be stated. In this case, based on restricting the area to industrial use only, the remedial goal (as per the risk assessment) of **1E-06** would be in mg/kg, **3.53** for arsenic, **2.42** for chlordane, **0.43** for BEQs (e.g., benzo(a)pyrene), and **0.2** for dieldrin (Table 1-1, page **1-22**). However, the state would not require cleanup lower than our Soil Cleanup Target Levels (SCTLs) - Industrial which are in mg/kg **3.7, 11.0, 0.5 and 0.3**, respectively.

Response: The document will be revised to address a remedial goal consistent with FEDP SCTLs. Table 2-2 presents the SCTLs for the COCs at Site 15.

Comment 2: On pages **1-12** and **2-1**, the document indicates that surface soil analytical results are compared to health risk based standards and subsurface soil results to leachability standards. Surface soil must also be compared to leachability.

Response: Surface soil results will also be compared to leachability standards.

Comment 3: On page **1-13**, the document indicates the areas of greatest surface soil contamination are around the asphalt pad northwest of building **2540** and the concrete pad west-northwest of Building **3586**. While these areas had some of the highest concentrations, industrial cleanup levels were exceeded in areas across the site and in the old disposal area north of the road.

Response: This comment is noted. The intent, however, of the original statement was to describe the surface soil contamination on a relative scale, as indicated by the use of the qualifier "greatest".

Comment 4: On page **1-8**, the document indicates that risks and hazards were assessed for the hypothetical site worker. This should be the current site worker as the site is still in use as the Golf Course Maintenance Area.

Response: **This** comment is noted. The **risks** and **hazards** were **noted** for the current site worker, but were **also** extrapolated for the “hypothetical future site worker” **assuming** no **changes** from the current site **status**. The text will **be** corrected.

Comment 5: **On** page 1-24, the document indicates arsenic in groundwater is likely immobilized due to arsenic being absent in downgradient wells **and** therefore would not migrate into downgradient surface water bodies. I agree that arsenic **has** not migrated to definitive downgradient wells 15GS68 **and** 15GS69 which are adjacent to Bayou Grande and are downgradient of contaminated well 15GR65. However, **as** previously **stated** in comments on the Remedial Investigation, the actual area downgradient from well 15GR66 leading toward the tidal pond may not be correct. It was agreed in previous meetings that an additional well will **be** placed between well 15GR66 and well 15GS71 to adequately determine groundwater flow in **this** area of the site and **assure** that the nature **and** extent **of** the contamination is defined.

Response: **This** comment is noted. The original statement, however, **is** correct in light of the available data. The reviewer, however, is **also** correct in that **an** additional well will be **installed** immediately **east** of the site, intermediate **between** the site and the eastern tidal pond to define the presence of a gradient in that **direction** and to quantify potential contamination emanating from the site. **This** well **will be** installed as part of the Remedial Design/Remedial **Action** effort.

Comment 6: **On** page 2-1 and 2-2, what is meant by the sentence “Although Site 15 is industrial and expected to remain **so**, residential screening values were used to conservatively compare the magnitude of site impacts to other base areas.”? How do other areas of the base relate to the basis for the feasibility study.

Response: Reference to other base **areas** has **been** deleted.

Comment 7: **On** page **2-2**, sample points exceeding risk or hazard criteria are eliminated from further evaluation if they are under asphalt or concrete. They **still** need to be carried through the evaluation. Institutional controls would need to be applied to retain the asphalt/concrete cover.

Response: **This** comment is noted.

Comment 8: **On** page 2-9, subsurface soil is eliminated from further evaluation related to leachability. **Based** upon the results **this** is appropriate. However, surface soils still need to be considered related to leachability. The activities at **this** site **used** a form of arsenic laden pesticides which are dissolved with water. The **type** of arsenic could therefore be highly

mobile and travel **through** subsurface soil **to** groundwater via rainfall filtration and not necessarily bind to the subsurface soils.

Response: This comment **is** noted. Please **see** the **response** to Comment **2**.

Comment **9**: **On** page **2-10**, the term partnering **team needs** to be defined.

Response: This comment **is** noted, and the text **will be** revised.

Comment **10**: **On** page **3-5** remove “long term monitoring” **as** an institutional control. Monitoring is a remedial activity.

Response: This comment **is** noted.

Comment **11**: **On** page **3-10**, Table **3-2**, low capital costs **and** moderate O&M costs are indicated related **to institutional** controls and monitoring. Long term monitoring could have high costs if monitoring was to be performed for **30 years** or more.

Response: **This** comment **is** noted, and the table **will be** revised.

Comment **12**: **On** page **3-12**, the volume of **soil** requiring treatment needs to be reassessed based on the **risk** of **1E-06**.

Response: This comment **is** noted. Please **see** the **response** to Comment **1**.

Comment **13**: **On** page **4-2**, the document indicates that arsenic concentrations in groundwater have been decreasing in well **15GR03**. **This** is incorrect. The values on **this** well have fluctuated up and down.

Response: The intent of **this** statement **was** to define an **OVERALL** decrease (reduction by **almost 50%**) in concentration from Phase I to **Phase** III. The text **will be** revised to more accurately reflect **this**.

Also, in the last paragraph, it indicates that the contamination is **As(V)** and therefore has low mobility. The remedial investigation did not specify the **type** of arsenic and I question the lack of mobility based **upon** the fluctuating values in monitoring well **15GR03**.

Response: Arsenic will **exist** in its less mobile, **oxidized** state (Arsenic IV) **in** aerobic conditions. Several factors indicate that **this** aquifer is aerobic in nature, including: it is a very shallow water table aquifer, provided with **direct** communication to the surface (unconfined); it is subject to rapid vertical **infiltration** of oxygenated precipitation **as** recharge; the aquifer media is composed predominantly of quartz sand, lacking abundant organic matter which could promote reducing conditions; **areas** of the base where “background “ DO **has been** measured (e.g., **areas unaffected** by contamination, such as **UST 18** and **UST 26**) indicate normal aquifer conditions are aerobic; and the source form of the arsenic is oxidized. Even though DO was not **directly** measured at **this** site, the weight of evidence provides that the arsenic **is** present in its **oxidized** form. **This** rationale will **be** included in the **FS**.

Another statement is that the source of arsenic contamination **has** been removed. Supposedly the current operations at the site have eliminated any ongoing releases. However, surface soil is contaminated at elevated levels above leachability values and could still be a source.

Response: This comment **is** noted. Please **see** the response to Comment **2**.

Comment **14**: On page 4-4, a five year interval monitoring program is indicated with the No Action alternative. Monitoring would not **be** part of a **No** Action **alternative** and monitoring once every 5 years would **be** an inadequate monitoring interval under any of the listed alternatives.

Response: **This** comment is noted. However, the intent of the cited monitoring was **to** provide a current set of **data** to be used **as** part of a five-year review mandated under the NCP. The Navy now understands that a new set of data **is** not required **as** part of that review.

Comment **15**: On page 4-1, the groundwater monitoring interval for Alternative **2** would be once annually. As no analytical data **has** been taken in two years and it will be at least another **year** before **an** alternative is in place for **this** site, I suggest a bi-annual monitoring interval the first year. If values are unchanged or are decreasing and there is no evidence of migration, then going to annual monitoring would **be** appropriate. If levels show increases or downgradient wells show contamination, then bi-annual monitoring should continue or the monitoring possibly increased.

Response: The rationale for this choice of monitoring interval included an initial comparison of the **RI** data against a baseline monitoring event. Given that the source of groundwater contamination from site waste handling **has been** addressed through implementation of pollution prevention practices, the Navy **fully** expects the subsequent monitoring to demonstrate marked attenuation of contamination. In **this** case, annual

monitoring would be more **than** satisfactory. **If** the baseline monitoring shows a marked **increase** in contamination, then the Navy would **agree** that a more frequent monitoring interval would be **required**.

Comment 16: **On** page 4-16, the groundwater monitoring **interval** for Alternative 3 would be **once** annually. **As** this is an active recovery treatment system, monitoring should be quarterly in the **beginning** and then could be **reduced** dependent **upon** the monitoring results and the effectiveness of the recovery system.

Response: This comment is noted. However, please **see** the **response** to Comment 15. The Navy applies the same rationale to **this** comment (e.g., The monitoring **interval** would be dependent **on** a baseline comparison — for **FS** costing **purposes** it was chosen as **annual**).