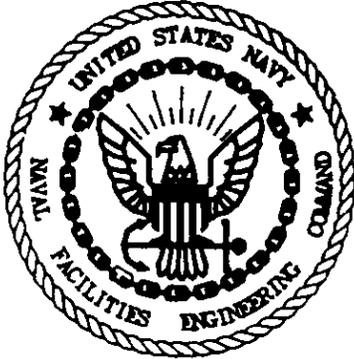


N61165.AR.003647
CNC CHARLESTON
5090.3a

U S NAVY RESPONSE TO SOUTH CAROLINA DEPARTMENT OF HEALTH AND
ENVIRONMENTAL CONTROLS COMMENTS ON FINAL ZONE F RCRA FACILITY
INVESTIGATION WORK PLAN ADDENDUM (DATED 3 NOVEMBER 1999) WITH
TRANSMITTAL CNC CHARLESTON SC
2/2/2000
NAVFAC SOUTHERN

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY
CHARLESTON NAVAL COMPLEX,
NORTH CHARLESTON, SOUTH CAROLINA
CTO-029**



**RESPONSE TO SOUTH CAROLINA DEPARTMENT
OF HEALTH AND ENVIRONMENTAL CONTROL
COMMENTS ON FINAL ZONE F RFI WORK PLAN
ADDENDUM (DATED 3 NOVEMBER 1999)**

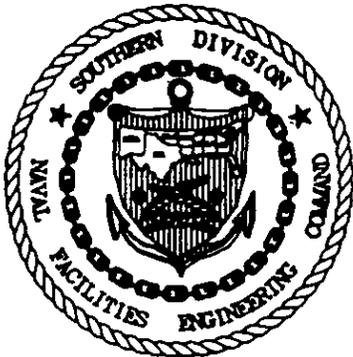
CONTRACT N62467-89-D-0318

Prepared for:

**DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA**

Prepared by:

**ENSAFE, INC.
5724 SUMMER TREES DRIVE
MEMPHIS, TENNESSEE 38134
(901)372-7962**



February 2, 2000

Release of this document requires the prior notification of the Commanding Officer of the Southern Division, Naval Facilities Engineering Command, Naval Base Charleston, South Carolina.



DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O. BOX 190010
2155 EAGLE DRIVE
NORTH CHARLESTON, S.C. 29419-9010

5090/11
Code 18B1
2 February, 00

Mr. John Litton, P.E.
Director, Division of Hazardous and Infectious Waste Management
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subj: SUBMITTAL OF ZONE F RFI WORK PLAN ADDENDUM

Dear Mr. Litton,

The purpose of this letter is to submit the Zone F RFI Workplan Addendum for Naval Base Charleston. The workplan addendum is submitted only to document the additional field investigation that is necessary during the Zone F RFI. The RFI is being conducted to meet the requirements of condition II.E.1 of the Part B permit issued to the Navy by the South Carolina Department of Health and Environmental Control and U.S. Environmental Protection Agency.

The workplan addendum has been prepared to document the additional field work that resulted from the comments received on the Draft Zone F RFI report. The Navy requests that the Department review the addendum to the extent that it meets the expectations agreed to by the Department in developing responses to these comments. The addendum should be filed for reference in responding to monitoring well requests and as a chronological history of the field work performed. If you should have any questions, please contact Matt Humphries or myself at (803) 743-9985 and (803) 820-5525 respectively.

Sincerely,

A handwritten signature in black ink that reads "M.A. Hunt".

M.A.HUNT, P.E.
BRAC Environmental Coordinator
BRAC Division

Encl: Zone F RFI Workplan Addendum, Dated 1 February, 2000
Copy to:
SCDHEC (3)
USEPA (Dann Spariosu)
SOUTHNAVFACENGCOM (Matthew Hunt)
CSO Naval Base Charleston (Matt Humphries)

**Response to SCDHEC Comments on the Final Zone F RFI Work Plan Addendum
January 28, 2000**

**SCDHEC (Paul Bergstrand) Comments on The
Final RFI Work Plan Addendum (dated 3 November 1999)
Charleston Naval Complex
17 December 1999**

Comment 1:

The work plan addendum is, as submitted, does not provide the current and complete characterization of Zone F SWMUs and AOCs. The work plan refers to the Draft RFI Report to present the known extent of contamination. The Draft RFI Report does not present this information in a comprehensive manner. Also, the soil exceedances in the Draft RFI Report were based upon a SSL-DAF of 20 which has since been changed to a site-specific SSL. It is not known how the revision of SSL will change the known extent of contamination from the Draft RFI Report. Furthermore, analytical data from subsequent RFI assessments, previous and ongoing Petroleum UST assessments, Sanitary and Storm Water Sewer assessments was not evaluated in this work plan. All this additional data is reportedly being re-evaluated during the end of November 1999. This addendum sampling effort is intended to complete the characterization of contamination. Only a comprehensive review of all data will tell if this effort was successful.

Response 1:

The extensive data evaluation described in this comment was performed as part of the development of the work plan addendum. A formal presentation of this effort was not prepared because the Navy and EnSafe feel that level of effort should be reserved for the revised RFI report. The intended purpose of the work plan addendum was to provide a summary of the data with respect to where data gaps were identified and describe the work required to fill the data gaps. The revised RFI report will provide the documentation necessary to measure the successfulness of the addendum sampling effort.

Comment 2:

Figures in this work plan describe COC exceedances with generic symbols such as VOC, SVOC or METALS. This method of presentation of the nature and extent of contamination fails to relay the known levels of contamination.

Response 2:

The figures provided were modeled after the summary map that was part of an example set of figures provided to the team when the Navy and EnSafe were attempting to get "buy in" on an acceptable graphical presentation of the data. This method of presentation conveys all the information that is needed in a work plan with respect to a quick, visual representation on one map of where screening levels were exceeded and whether or not that location was adequately surrounded by data points where they were not exceeded. The text accompanying the figures explained that, where the generic symbols were displayed, one or more constituents of that

particular family of compounds exceeded its respective screening level. At points without a generic symbol, the concentrations for all constituents were either below screening concentrations or not detected at all. The presentation of data for individual constituents is not required using this method of identifying data gaps since the analysis for a generic parameter such as VOCs will include reporting of all of the individual constituents on the Method 8260 analyte list.

Comment 3:

In an RFI investigation where the release mechanism is not known, analytical data to define the nature and extent of contamination should be presented on maps or figures before comparing the data to screening values. This is significant when multiple contaminant detections below screening values may provide cumulative evidence of a release. Screening values are not based upon their cumulative effect. The Navy must adequately define the nature and extent of contamination.

Response 3:

The screening process that has been used since the beginning of the RFI provides a specific means to with the potential cumulative effect for non-carcinogens. The RBCs are multiplied by a factor of 0.1 for screening purposes for non-carcinogens. This was not done for carcinogens because the use of RBCs as a screening tool takes into account the conservative nature in which the values are calculated and the fact that it is highly improbable that multiple detections below the RBC would result in a cumulative risk for the site that would exceed the risk range of $1E-06$ to $1E-04$ that is generally acceptable to EPA. The Navy acknowledges that SCDHEC is primarily interested anything that exceeds $1E-06$ and that it is possibly that multiple detections slightly under the RBC could result in a cumulative site risk greater than $1E-06$ using the default assumptions for a residential exposure scenario. If these situations are identified they will be dealt with appropriately in the baseline risk assessment.

The other issue brought out by this comments is whether or not the nature and extent can be adequately defined when using screening values to determine when to stop sampling if the release mechanism is poorly understood. In the case where compounds are detected below their respective screening levels which are at or below the practical quantitation limits, it is extremely unlikely that they can be attributed to a release from a SWMU/AOC or if a definitive source of any kind will ever be identified. The Navy and EnSafe do not see the value in continuing to sample for these compounds until non-detect results are achieved nor do we see the value in attempting to map these constituents when they are inconsequential with respect to risk/hazard at a site. On the other hand, there may be constituents such as some of those found in petroleum which are useful in mapping the extent of an release because of their elevated concentrations but, because they don't contribute significantly to risk have very high screening values. The Navy and EnSafe agree that it may still be beneficial to map these compounds for purposes of describing the nature and extent of an obvious release.

Comment 4:

The Figures in this work plan represent groundwater flow with an arrow. It is not clear if the representation of groundwater flow in this document is from a single seasonal sample event or an average. This representation of groundwater flow is often at odds with other data previously presented by the Navy. In a work plan such as this, the variability of the seasonal or average groundwater flow can influence proposed monitoring well locations. The Navy must indicate how the groundwater flow was determined.

Response 4:

The arrows are intended as an indication of the general horizontal flow direction over several measured events. Prior to installation of the new monitoring wells (613007, 613008) proposed in the work plan addendum, the flow was again determined from water level measurements and compared to previously measured patterns representative of different seasons. The final location of the well was determined by this comparison. The revised report will provide groundwater flow maps from various time periods to document variations (or the lack of) over time.

Comment 5:

Figures of buildings should include pertinent information as it relates to the nature of the SWMU or AOC. An example of this is SWMU 4, Pest Control. *"SWMU 4 consists of Building 381 which was built in 1980 to store various insecticides and rodenticides. Building 381 has a formulation and mixing room, equipment wash area, and sink and floor drains connected to the base sanitary sewer system. Pesticide storage at the facility was discontinued after 1985, and after this date the building was used for miscellaneous storage."* Upon close inspection of the work plan, it is apparent that only two soil samples have been taken close to the building. There is one side gradient monitoring well. Providing figures showing the layout of the building, the connection to the sanitary sewer system, where mixing and washing occurred, etc., is critical to understanding the assessment to date and the adequacy of the proposed assessment. The Navy should include pertinent information as it relates to the nature of each SWMU or AOC.

Response 5:

This information will be presented in the final Zone F RFI report so the reviewers can determine the adequacy of the data collected.

Comment 6:

Building 1824 is described in the 29 April 1994 Draft EBS as being the Flammable and Hazardous Waste Storage Facility. There is no evidence that Building 1824 has been listed as a SWMU or an AOC. The Navy should address the status of this facility.

Response 6:

The Navy will discuss this matter in greater detail with the Project Team to determine an appropriate course of action for this building.

Comment 7:

There appears to be a break in the Sewer line near the Zone F boundary along side SWMU 4/AOC 619 and SWMU 36/AOC 620. The Navy should anticipate the effect of Sewer line repairs on groundwater flow in this area.

Response 7:

The Navy agrees that this could affect future decisions regarding these sites but it does not change the interpretation of the data currently being used to characterize these sites.

Comment 8:

An Interim Measure was conducted at AOC 611 (former Hobby Shop). There are several issues regarding this IM that will need to be addressed before a final determination can be made.

- A. Confirmation sample analysis was only for PAH and RCRA Metals and not for the full range of potential contamination. This limited suite of analysis will complicate the use of the IM data in the RFI Report.
- B. PCB was determined to be a COC in the Draft RFI Report, however there were no reports of PCB analysis during the IM confirmation samples or in the waste characterization.
- C. PAH Confirmation samples 1, 2 and 3 were diluted (10x, 40x and 10x) as a result of matrix interference. How these elevated detection levels may compare with the RBC was not addressed in the Report.
- D. Confirmation sample location 2 (611-004) reported strong petroleum odor and the TPH analysis confirmed 28,500 ppm at the site.
- E. Maps and figures from the IM Report and the Work plan Addendum of the excavated area do not agree.

Response 8:

- A. **The Navy agrees that the lack of PCB analyses may limit the usefulness of the IM data with respect to completing the RFI characterization. The Navy proposes that this issue be discussed at the February 2000 Project Team meeting where all of the nature and extent data currently available for this site will be presented in detail.**

- B. This appears to be a deficiency in the IM work that was completed and it may have an impact on the RFI. As mentioned above, this issue should be discussed and a resolution agreed upon at the next Project Team meeting.**

- C. The elevated TPH concentrations mentioned in Part D of this comment provide an indication that the matrix interference was most likely a result of one or more of the numerous constituents of which TPH is comprised that are not included on a standard Method 8270 analyte list. Situations such as this where an obvious petroleum release has occurred, yet no constituents are identified which drive risk requires a risk management decision from the team with respect to how the site should be addressed. The report will be revised to include a discussion of the data usefulness based the conditions causing the matrix interference and the elevated reporting limits.**

- D. This site is one of several where the remedial goals were based on the petroleum “indicator” compounds for which risk based cleanup goals have been established, not TPH. The Navy addressed these situations in detail in Appendix A of the *Zone C CMS Work Plan*. The Project Team has yet to collectively decide how to deal with these situations. This matter should be resolved prior to attempting to submit the revised RFI report.**

- E. The only figure in the work plan addendum that shows AOC 611 is Figure 6. The site boundary presented on this map represents the footprint of the former building, not the area of the IM excavation. The Project Team has agreed that the term “site boundary” should refer to the boundary of the site as it was described in the RFA which is going to be different from the boundary associated with the extent of contamination at a site. A map showing the extent of the IM excavation will be included as part of the revised RFI report.**

Comment 9:

The work plan stated that Tetra Tech NUS will be performing a “Rapid Assessment” under supervision of the UST Program. UST programs typically work with virgin petroleum products. The Navy and contractor must be aware of the hazardous constituents present and conduct an adequate analytical assessment. Incomplete or partial analysis during the “Rapid Assessment” will require additional assessment.

Response 9:

The Navy agrees with this comment. In most instances, additional samples analyzed for a broader range of parameters are collected under the RFI from the UST wells rather than simply relying on the data from those assessments. The intent of pointing out the UST wells is also to

acknowledge there is a nearby source for petroleum that is likely unrelated to the site and should not be attributed to the site.

Comment 10:

The status and environmental conditions of all Oil Water Separators in this Zone must be considered. OWS have typically been assessed assuming virgin petroleum contaminants. The Navy must conduct an adequate analytical assessment of all OWS. Incomplete or partial analysis will require additional assessment.

Response 10:

The Navy and EnSafe believe the revised RFI report will document the fact that the OWS have been adequately assessed.

Comment 11:

Data collected as part of the assessment of SWMU 37, AOC 699 and AOC 709 should be included in the data presentation.

Response 11:

Site specific discussions in the revised RFI report are being revised to include all relevant data that contributes to the complete characterization of a site.

**SCDHEC (Charles B. Watson) Comments on The
Final RFI Work Plan Addendum (dated 3 November 1999)
Charleston Naval Complex
21 December 1999**

General Comments

The Zone F RFI Work plan Addendum document addressed additional work needed to address nature and extent for the following sites:

- SWMU 4 and AOC 619
- SWMU 36 and AOC 620
- SWMU 109
- AOC 609
- AOC 611
- AOC 613, AOC 615, and SWMU 175

Comment 1:

Throughout the text of the document there are references to data that was used to determine the need for additional sampling locations to fill data gaps. A range of sampling result data was given instead of providing a table of all results. All data should have been included in the text.

Response 1:

Please refer to the response to Bergstrand's comment #1.

Comment 2:

It is proposed that the soil data be reevaluated with respect to site specific SSL which may indicate that there are additional soil data gaps. This should have been evaluated prior to this document being finalized.

Response 2:

The Navy and EnSafe informed SCDHEC of the decision to calculate site specific SSLs and discussions were held with the Department regarding methodology. We were told by SCDHEC that collection of samples necessary to calculate the site-specific SSLs did not need to be described in the work plan addendum. Because of this field work was started concurrently with the development of the work plan addendum. This information was not available by the time the work plan addendum was completed and the Navy does not intend to revise the work plan addendum to show the outcome of that evaluation with respect to identifying data gaps simply because the revised report will be submitted in a couple of weeks and it will thoroughly document that process.

Comment 3:

The document indicates that additional screening results should be completed by mid-November. This information should have been completed and incorporated into this document in order that a final determination of appropriate sampling could be more closely achieved.

Response 3:

Please refer to the response to comment #2 above.

Site Specific Comments:

SWMU 36 and AOC 620

The location of the proposed soil sampling location 620SB010 is not shown on the map. This is one of the proposed eastern sampling points from 620SB004.

Response:

This sample location, as well as others required to complete the investigation, will be included on figures in the Final Zone F RFI report. After sample collection the locations will be surveyed, this is the actual location which will be shown on the Final Zone F RFI report figures.

SWMU 109

Some of the contaminants exceeded RBC and/or background by very marginal amounts. Therefore, it is proposed that no additional sampling be done. No sampling data was provided. It is felt that further sampling should be made at these locations based upon the information as presented.

Response:

The revised RFI report will provide the appropriate justification for not collecting additional samples.

AOC 609

As previously mentioned, the document states that soil sampling results would be reevaluated with respect to site-specific SSL's. This should have been done prior to the submittal of the document.

Response:

Please refer to the response to comment #2 above.

AOC 611

There was PCB contamination present at 611SB007. There is no further mention of this contamination. Did the interim removal address this and was this confirmed through sampling? The area of interim removal should have been indicated on the map.

Response:

The Aroclor-1260 detected in the surface soil was from the 0-1 foot bgs interval. The IM soil removal included this location and removed soil to a depth of at least 1 foot bgs to remove PAHs and arsenic. The depth of the sample collection and of the excavation suggest that the PCBs should have been removed, although this was not confirmed. Confirmation samples were not analyzed for PCBs. The risk associated with the unexcavated sample was 1.7X-06.

AOC 613:

There were slight exceedances of contaminant levels at 613SP008 and 613SP0036. The work plan does not propose additional sampling at these locations. Based on the information as presented, additional sampling is needed at these locations and any others in a similar situation.

Response:

Limited additional sampling was performed in the area of 613SP008 and the results will be included in the Final Zone F RFI. The focus of the investigation is the facilities and activities associated with the former Building 1169 (service pits and oil water separator) and the crane painting area. The areas described as requiring additional sampling are removed from these potential sources and most likely represent anthropogenic background conditions so additional delineation sampling was not performed. Data to support this belief will be presented in the revised report.