

Gates, William H CIV NAVFAC SE

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NSWC PANAMA CITY

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From: Gates, William H CIV NAVFAC SE
Sent: Tuesday, February 13, 2007 7:37 AM
To: Bolanos, Tracie
Cc: Johnston, Tom; Waddill, Dan W CIV; Mcdonald, Arturo; Clayton, Michael D
Subject: FW: FDEP RTCs on RFI Add Rev01-Proposed to Navy.doc with pdf Files

Attachments: FDEP RTCs on RFI Add Rev01, Attachment A2-Changes Incorporated.pdf; FDEP RTCs on RFI Add Rev01, Attachment A1-Markup.pdf; FDEP RTCs on RFI Add Rev01-Proposed to Navy.doc; Final NSA PC meeting minutes March 9, 2005-with Trident Probe Highlights.doc; Final NSA PC telecon minutes June 1, 2006-with Trident Probe Highlights.doc; CCMM Panama City Final Tech Report.pdf



FDEP RTCs on RFI Add Rev01, At... FDEP RTCs on RFI Add Rev01, Att... FDEP RTCs on RFI Add Rev01-Proposed to Navy.doc Final NSA PC meeting minutes March 9, 2005-with Trident Probe Highlights.doc Final NSA PC telecon minutes June 1, 2006-with Trident Probe Highlights.doc CCMM Panama City Final Tech Report.pdf

Tracie,

These attachments are our responses to your December 29, 2006 comments on the RFI Addendum Revision 1 of October 2006. These responses only address Comments 3 (SWMU 10) and 4 (AOC 1). Your comments cited the need for a CMS revision. The Word document is our response and explains why an additional revision is not needed. The PDFs are change pages to implement the responses. We concur with Comments 1 and 2 - your approval of the NFAs for SWMUs 3 and 9 respectively.

Tom and I were unable to determine that the Trident Probe/Ultraseep Study was ever submitted to you. Partnering Team meeting minutes of March 9, 2005 document Bart Chadwick's presentation to the team of the Trident Probe results. Partnering Team meeting minutes of June 1, 2006 document Dan's Trident Probe presentation to Tier 2 on May 30, 2006. The Final Trident Report and the two meeting minutes (Trident Probe discussion is highlighted in blue) are attached.

With your concurrence we will submit the formal response to comments and change pages. Let us know if you have any questions.

Thanks,
Bill

**Response to Select Florida Department of Environmental Protection (FDEP) Comments
(dated December 29, 2006) on the Final Resource Conservation and Recovery Act
(RCRA) Facility Investigation (RFI) Addendum for Area of Concern 1 and Solid
Waste Management Units 3,9 and 10, Revision 1, Naval Support Activity, Panama
City, Panama City [Beach], Florida**

(Preliminary Responses After Discussion with Dan Waddill)

Feb 08, 2007

Comment 3. Page 6-1 Section 6.3 Solid Waste Management Unit (SWMU) 10: Additional monitoring wells located down gradient from wells PCY-363-MW-10 and PCY-363-MW-4 need to be installed at this site. The groundwater was sampled in these wells in 2004 and manganese was found at concentrations that exceed the Surface Water Standard for Manganese which is 100ug/l. This is an issue because this site is located adjacent to a surface water body. The Department concurs with resolving this issue in the Corrective Measures Study (CMS) for SWMU 10 which is scheduled to be completed in 2007.

Response to Comment 3:

The Executive Summary (page xv) of the RFI Addendum for SWMUs 3, 9, 10 and AOC 1, Revision 01, recommended that the existing CMS should be updated for SWMU 10 [pending the outcome of additional sampling to occur in 2003]. This recommendation was left over from the original RFI Addendum. This recommendation was not updated for SWMU 10 when preparing Revision 01 of the Addendum (dated October 2006) because the revision was designed only to address SWMUs 3 and 9. A CMS Addendum, however, was issued for AOC 1 and SWMU 10 in January 2004. The CMS Addendum (dated January 2004) incorporates the results of the original RFI Addendum as well as interim sampling conducted in May 2003. Therefore the recommended update to the CMS has been completed. To clarify this in the RFI Addendum Revision 01, change pages have been prepared to:

- remove from pages xiv and xv the recommendations to update the CMS for SWMU 10 and AOC 1, respectively.
- remove from page 1-2 the recommendation to update the CMS for SWMU 10 and AOC 1, respectively.
- remove from page 6-1 and 6-2 the recommendations to update the CMS for SWMU 10 and AOC 1, respectively.

Attachment A1 to this response document shows the changes that were made; Attachment A2 shows the same pages after changes are incorporated. Both front and back pages are shown in Attachment A2 because pages are double-sided in the report.

Since the RFI was completed, additional wells down gradient of wells PCY-363-MW-10 and PCY-363-MW-4 were installed at SWMU 10 as part of the long term monitoring (LTM) program, as recommended in the CMS Addendum (dated January, 2004). Although 2004 data demonstrate exceedances of the 100 µg/L surface water standard, the LTM data collected in October of 2006 from the downgradient well (PCY-10-MW-2) closest to St. Andrew Bay exhibited a manganese concentration of just 55.9 µg/L. This indicates that manganese concentrations at a point representing groundwater discharge to St. Andrew Bay do not exceed the surface water standard. These October 2006 data are provided separately in the long-term monitoring report for the last quarter of 2006.

In summary, the requested CMS update has been implemented in the form of the CMS Addendum dated January, 2004. However, changes to the RFI Addendum Revision 01 are being implemented to remove the apparent conflict created by the RFI report stating that a CMS update is still needed. No change is proposed regarding the need to install additional wells at SWMU 10 because these wells were installed as part of the LTM program. The most recent data available

demonstrate that the groundwater manganese concentrations discharging to surface water are less than the surface water standard of 100 µg/L.

Comment 4. Page 6-2, Section 6.4, Area of Concern (AOC) I: In this document enhanced biodegradation is also discussed as a remedy that has already been implemented. A Trident Probe study was also conducted to determine if contaminated groundwater was adversely affecting surface water at the groundwater/surface water interface. The findings of both of these events need to be discussed further in the CMS for AOC 1. Based on these finding the proposed remedial approach for this site of monitored natural attenuation will be considered by the Department.

Response to Comment 4:

The RFI Addendum, Revision 01 states in Section 6.4: "While the remediation approach will be discussed in depth in the CMS, in general, it is expected that monitored natural attenuation (MNA) and/or enhanced biodegradation will be implemented." The Executive Summary (page xv) of the RFI Addendum, Revision 01 recommends that the existing CMS should be updated for AOC 1 [pending the outcome of additional sampling to occur in 2003]. This recommendation was left over from the original RFI Addendum and was not updated for AOC 1 even though the RFI Addendum Revision 01 date is October 2006. A CMS update was issued for AOC 1 and SMWU 10 in January 2004. The CMS update of January 2004 incorporates the results of the original RFI Addendum as well as the May 2003 interim sampling. The CMS Addendum also states on page 3-5 (Section 3.4.2): "Results indicate that the aquifer is primarily aerobic, creating conditions for effective biodegradation of the significant contaminants (benzene, 1,1-DCA, and 1,1-DCE)." The CMS Addendum goes on to state in the next paragraph: "...the data suggest that natural attenuation is viable, and CAO 2 [i.e., Corrective Action 2] for groundwater should be continued." CAO 2 is natural attenuation. The CMS Addendum culminates in a recommended corrective action for AOC 1 (Section 7.2): "Alternative 1-4: Monitored Natural Attenuation." Thus it appears that the need to discuss the corrective action alternatives of enhanced biodegradation and MNA has been addressed in the CMS Addendum rather than the RFI Addendum, Revision 01.

Regarding Trident Probe data, the data are not presented in the CMS Addendum, however, a separate report was written to summarize the Trident Probe/Ultraseep investigation. The draft Statement of Basis summarizes the findings from the Trident probe evaluation. Therefore the recommended update to the CMS has been completed by virtue of the issuance of a separate report.

The RFI Addendum, Revision 01 seems to create confusion over whether recommended or required updates have been made to particular documents. To rectify this situation, change pages have been prepared for the RFI Addendum Revision 01 to:

- remove from pages xiv and xv the recommendations to update the CMS for SWMU 10 and AOC 1, respectively.
- remove from page 1-2 the recommendation to update the CMS for SWMU 10 and AOC 1, respectively.
- remove from page 6-1 and 6-2 the recommendations to update the CMS for SWMU 10 and AOC 1, respectively.

Attachment A1 to this response document shows the changes that were made; Attachment A2 shows the same pages after changes are incorporated. Both front and back pages are shown in Attachment A2 because pages are double-sided in the report.

Attachment A1

**Markup of Select Pages of RFI Addendum Revision 01
to Show Where Changes Were Made**

For soils, all three samples at SWMU 10 showed regulatory exceedences of Total Petroleum Hydrocarbons (TPHs). Two soil samples had exceedences for tetrachloroethene, and one sample had exceedences for toluene, ethylbenzene, and xylenes. Nevertheless, these compounds do not appear in groundwater at levels that exceed the Florida GCTLs or marine SWCTLs. Given the detailed nature of the current groundwater investigation, it is reasonable to conclude that attenuation processes (especially biodegradation) are remediating the SWMU 10 groundwater.

In June, 2002, one of the underground storage tanks (USTs) at SWMU 10 was ruptured during removal, such that groundwater came in contact with residues inside the tank. Samples were not taken as part of the tank removal, so it was not possible to quantify the effect on the SWMU 10 soil and groundwater. During the tank removal, several of the SWMU 10 wells were destroyed or damaged, and the remaining wells would not be adequate for future groundwater monitoring.

SWMU 10 Conclusions and Recommendations. Combined with the data in the original RFI, the investigation for this RFI Addendum was sufficient to delineate the nature and extent of contamination at SWMU 10, although additional work will be needed to determine the effect of the 2002 tank removal.

← Recommendation to update the CMS has been removed.

AOC 1

AOC 1 Previous Corrective Actions. In order to remediate light, non-aqueous phase liquid (LNAPL) in the source zone, a bioslurping system was operated at AOC 1 from August 1997 to October 1999. Following a drop in the water table, the system operated again from October 2000 until April 2001. The drop in the water table not only allowed additional recovery of free product, but also exposed residual NAPL to air stripping and aerobic biodegradation. Groundwater sampling at AOC 1 indicated that the bioslurper was a successful source reduction strategy at AOC 1.

A leaking underground storage tank (UST) and contaminated soil at Site 98 (Between AOC 1 and St. Andrew Bay) were removed in 1997, thus eliminating this potential source of contamination downgradient of AOC 1.

AOC 1 Current Investigation. Groundwater samples were collected by Direct Push Technology (DPT) and from conventional monitoring wells. The DPT investigation indicated

several additional locations for monitoring wells to characterize the AOC 1 groundwater over the long term, and nineteen new wells were installed at nine locations. With the current monitoring well network, there is little chance that the plume can escape detection.

The DPT groundwater investigation indicated that 1,1-DCA, 1,1-DCE, and benzene are depleted in the source zone, but they have migrated laterally to the edge of St. Andrew Bay. Near the bay, the contaminants occur at depth such that further migration (vertically upward) is required before contamination would discharge into surface water. Theoretically, it is possible that the contaminants would attenuate (through biodegradation, dilution, and dispersion) prior to reaching surface water, especially since the source has been eliminated, the measured concentrations are close to the GCTLs and SWCTLs, and dissolved oxygen (DO) is available for biodegradation of the contaminants.

The DPT and monitoring well investigations indicated that the contaminants 1,1,1-TCA, PCE, TCE, 3&4-methylphenol, naphthalene, toluene, ethylbenzene, and xylenes are not migrating significantly beyond the source zone.

AOC 1 Conclusions and Recommendations. Combined with the data in the original RFI, the investigation for this RFI Addendum was sufficient to delineate the nature and extent of contamination at AOC 1. While the remediation approach will be discussed in depth in the CMS, in general, it is expected that monitored natural attenuation and/or enhanced biodegradation will be implemented. If needed to support remediation decisions, groundwater modeling can be applied.

*Recommendation to update the
CMS has been removed.*

implemented at the sites to address contaminated soils and the presence of free-product. The status of these actions is described briefly Section 2 of this report.

In September, 2000, the USEPA rescinded its approval of the RFI and CMS reports because it determined that the scope and extent of contamination at CSS Panama City was not fully delineated. At the same time, the EPA required preparation of an RFI Addendum Work Plan to fully delineate the scope and extent of contamination at the facility and to allow the EPA to determine the status of two Environmental Indicators. For RCRA, Environmental Indicators are measures of EPA program progress to meet goals set under the Government Performance and Results Act (GPRA). The two RCRA Environmental Indicators are "Current Human Exposures Under Control" and "Migration of Contaminated Groundwater Under Control."

The required RFI Addendum Work Plan (TtNUS, 2001) was approved following submittal in February, 2001. The work plan summarizes data from previous reports and presents Hydrogeologic Conceptual Models (vertical cross sections) showing estimated groundwater flow paths and contaminant plume definition for each SWMU and AOC.

This RFI Addendum describes the results of additional field investigations carried out in 2001 and 2002 to determine the current nature and extent of contamination at SWMUs 3, 9, and 10 and AOC 1. This document has also been revised to describe additional field work in 2003 and 2004 at SWMU 3 and SWMU 9, and to remove the recommendations to update the CMS report for SWMU 10 and AOC (this updated was completed in 2004). The Environmental Indicators are not discussed in this report but will be addressed in a separate document. This report consists of the following sections:

New text was added.

- **Section 1.0 Introduction**
- **Section 2.0 Site Description**, describes the site location, description, and history; and summarizes the prior studies and corrective measures that have been implemented.
- **Section 3.0 Field Investigation**, outlines the sampling and analyses that were performed at each site.
- **Section 4.0 Nature and Extent**, describes the results of the investigation.
- **Section 5.0 Conclusions**
- **Section 6.0 Recommendations**

6. Recommendations

The intent of this RFI Addendum was to characterize the current nature and extent of contamination at SWMUs 3, 9, and 10, and AOC 1, so that the regulatory approval of the original RFI (ABB-ES-1996) can be restored. Following completion of the original RFI and CMS (ABB-ES-1997), several of the recommended corrective actions have taken place, and overall, the sites appear to be cleaner in 2002 than 1997. Nevertheless, in order to avoid potential confusion, the recommendations below are designed to be consistent with the original RFI.

6.1 Solid Waste Management Unit (SWMU) 3

- Based on the results of the Screening-Level Ecological Risk Assessment (Appendix J), it is recommended that no further action is warranted to address potential ecological risk at SWMU3.
- The original RFI (ABB-ES, 1996) indicates potential human health risk from direct exposure to SWMU 3 surface soil, and the original Corrective Measures Study (ABB-ES, 1997) recommends institutional controls to address this risk. Therefore this RFI Addendum recommends No Further Action with institutional controls (Risk Management Option Level II in 62-780.680(2) FAC) for SWMU 3.

6.2 Solid Waste Management Unit (SWMU) 9

- Soil and groundwater data indicate that SWMU 9 has been remediated to levels that are acceptable for unrestricted use. Therefore No Further Action (Risk Management Option Level I in 62-780.680(1) FAC) is recommended for SWMU 9.

6.3 Solid Waste Management Unit (SWMU) 10

- Additional soil and groundwater samples should be collected at SWMU 10 to determine the effect of the removal of the underground storage tank (UST) in June, 2002.
- Well PC-363-MW-2 should be re-sampled to determine if the currently reported value of bis(2-ethylhexyl)phthalate consistently appears at this location.

Recommendation to update existing CMS was removed.

6.4 Area of Concern (AOC) 1

Recommendation to update existing CMS was removed.

- While the remediation approach will be discussed in depth in the CMS, in general, it is expected that monitored natural attenuation and/or enhanced biodegradation will be implemented. If needed to support remediation decisions, groundwater modeling can be applied. Additional groundwater samples will be taken at AOC 1 in May, 2003, and these results will help determine the final remedial approach that will be proposed in the revised CMS.

Attachment A2

**Revised Pages of RFI Addendum Revision 01
After Incorporating Changes Indicated in Attachment A1**

For groundwater, results of the DPT and the monitoring well sampling indicate that contaminants are not migrating significantly beyond the source zone. In the monitoring wells in 2002, there were no exceedences of the Florida Groundwater Cleanup Target Levels (GCTLs) or the Marine Surface Water Cleanup Target Levels (SWCTLs). Since the Florida Department of Environmental Protection (FDEP) requires two consecutive sampling rounds with no exceedences to support a recommendation of No Further Action (NFA), additional groundwater samples were collected in 2003 and 2004.

SWMU 9 Conclusions and Recommendations. Combined with the data in the original RFI, the investigation for this RFI Addendum was sufficient to delineate the nature and extent of contamination at SWMU 9. Sample results indicate that the site has been remediated, and it is recommended that SWMU 9 be given a status of No Further Action (Risk Management Option Level I in 62-780.680(1) FAC).

SWMU 10

SWMU 10 Previous Corrective Actions. In 1999, quarterly monitoring for free product showed no remaining product over a period of 17 consecutive months, a condition which met the monitoring requirements of the CMS. Furthermore, 1999 groundwater sampling of wells PC-363-MW-1, PC-363-MW-4, and PC-363-MW-5D did not indicate the presence of VOCs, SVOCs, or metals at a level above groundwater criteria (Dames and Moore, 1999).

SWMU 10 Current Investigation. Groundwater samples were collected by Direct Push Technology (DPT) and from conventional monitoring wells, and soil samples were collected by DPT.

For groundwater, results of the DPT and the monitoring well sampling indicate that contaminants are not migrating significantly beyond the source zone. In the monitoring wells, there was one exceedence of the Florida Groundwater Cleanup Target Levels (GCTLs) or the Marine Surface Water Cleanup Target Levels (SWCTLs). This occurred with bis(2-ethylhexyl)phthalate (a common laboratory contaminant) in PC-363-MW-2, where the DO concentration was 1.5 mg/L. This concentration of DO would support aerobic biodegradation of bis(2-ethylhexyl)phthalate. Bis(2-ethylhexyl)phthalate was not reported in the laboratory blanks or equipment rinsate samples, so its detection cannot be traced to the laboratory. Additional sampling scheduled for May, 2003, will show whether or not bis(2-ethylhexyl)phthalate appears consistently at this location.

For soils, all three samples at SWMU 10 showed regulatory exceedences of Total Petroleum Hydrocarbons (TPHs). Two soil samples had exceedences for tetrachloroethene, and one sample had exceedences for toluene, ethylbenzene, and xylenes. Nevertheless, these compounds do not appear in groundwater at levels that exceed the Florida GCTLs or marine SWCTLs. Given the detailed nature of the current groundwater investigation, it is reasonable to conclude that attenuation processes (especially biodegradation) are remediating the SWMU 10 groundwater.

In June, 2002, one of the underground storage tanks (USTs) at SWMU 10 was ruptured during removal, such that groundwater came in contact with residues inside the tank. Samples were not taken as part of the tank removal, so it was not possible to quantify the effect on the SWMU 10 soil and groundwater. During the tank removal, several of the SWMU 10 wells were destroyed or damaged, and the remaining wells would not be adequate for future groundwater monitoring.

SWMU 10 Conclusions and Recommendations. Combined with the data in the original RFI, the investigation for this RFI Addendum was sufficient to delineate the nature and extent of contamination at SWMU 10, although additional work will be needed to determine the effect of the 2002 tank removal.

AOC 1

AOC 1 Previous Corrective Actions. In order to remediate light, non-aqueous phase liquid (LNAPL) in the source zone, a bioslurping system was operated at AOC 1 from August 1997 to October 1999. Following a drop in the water table, the system operated again from October 2000 until April 2001. The drop in the water table not only allowed additional recovery of free product, but also exposed residual NAPL to air stripping and aerobic biodegradation. Groundwater sampling at AOC 1 indicated that the bioslurper was a successful source reduction strategy at AOC 1.

A leaking underground storage tank (UST) and contaminated soil at Site 98 (Between AOC 1 and St. Andrew Bay) were removed in 1997, thus eliminating this potential source of contamination downgradient of AOC 1.

AOC 1 Current Investigation. Groundwater samples were collected by Direct Push Technology (DPT) and from conventional monitoring wells. The DPT investigation indicated

several additional locations for monitoring wells to characterize the AOC 1 groundwater over the long term, and nineteen new wells were installed at nine locations. With the current monitoring well network, there is little chance that the plume can escape detection.

The DPT groundwater investigation indicated that 1,1-DCA, 1,1-DCE, and benzene are depleted in the source zone, but they have migrated laterally to the edge of St. Andrew Bay. Near the bay, the contaminants occur at depth such that further migration (vertically upward) is required before contamination would discharge into surface water. Theoretically, it is possible that the contaminants would attenuate (through biodegradation, dilution, and dispersion) prior to reaching surface water, especially since the source has been eliminated, the measured concentrations are close to the GCTLs and SWCTLs, and dissolved oxygen (DO) is available for biodegradation of the contaminants.

The DPT and monitoring well investigations indicated that the contaminants 1,1,1-TCA, PCE, TCE, 3&4-methylphenol, naphthalene, toluene, ethylbenzene, and xylenes are not migrating significantly beyond the source zone.

AOC 1 Conclusions and Recommendations. Combined with the data in the original RFI, the investigation for this RFI Addendum was sufficient to delineate the nature and extent of contamination at AOC 1. While the remediation approach will be discussed in depth in the CMS, in general, it is expected that monitored natural attenuation and/or enhanced biodegradation will be implemented. If needed to support remediation decisions, groundwater modeling can be applied.

1. Introduction

Southern Division (SOUTHDIV), Naval Facilities Engineering Command (NAVFAC), has prepared this Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Addendum to describe the current nature and extent of contamination at three solid waste management units (SWMUs) and one area of concern (AOC) at Coastal Systems Station (CSS) Panama City, in Panama City, Florida. In the time between the writing of the original RFI Addendum in 2002 and this current revision, CSS has changed its name to Naval Support Activity (NSA). Original figures and tables retain the name CSS in this document, while the newer revisions use the name NSA. SOUTHDIV contracted Tetra Tech NUS, Inc. (TtNUS) to perform the field investigation, laboratory analyses, data validation, and ecological risk analysis.

A RCRA Facility Assessment (RFA) was conducted at CSS Panama City for the U.S. Environmental Protection Agency (USEPA or EPA) Region IV in 1987 (E.C. Jordan Co., 1987). The RFA identified 12 SWMUs and 3 AOCs, with eight SWMUs and two AOCs requiring further investigation through an RFI. The Phase 1 RFI field investigation was conducted in 1991 and 1992, and the Phase 2 RFI field investigation in 1993 and 1994. These investigations are described in the original RFI by ABB-Environmental Services (ABB-ES, 1996). The RFI recommended three SWMUs and one AOC for a Corrective Measures Study (CMS). These SWMUs and AOC are depicted on Figure 1.1 and include the following:

SWMU 3	Landfill C, Burn and Disposal Area
SWMU 9	Firefighting Training Area No. 2
SWMU 10	Site 363, Oil-Water Separator
AOC 1	Firefighting Training Area No. 1

The CMS was completed in April, 1997 (ABB-ES, 1997), and identified corrective action objectives (CAO), media of concern, and corrective action alternatives to address the CAOs. The corrective action alternatives were compared with one another based on specific evaluation criteria and as a result of the comparison, one corrective action for each media was recommended for implementation. Since 1997, several corrective actions have been

implemented at the sites to address contaminated soils and the presence of free-product. The status of these actions is described briefly Section 2 of this report.

In September, 2000, the USEPA rescinded its approval of the RFI and CMS reports because it determined that the scope and extent of contamination at CSS Panama City was not fully delineated. At the same time, the EPA required preparation of an RFI Addendum Work Plan to fully delineate the scope and extent of contamination at the facility and to allow the EPA to determine the status of two Environmental Indicators. For RCRA, Environmental Indicators are measures of EPA program progress to meet goals set under the Government Performance and Results Act (GPRA). The two RCRA Environmental Indicators are "Current Human Exposures Under Control" and "Migration of Contaminated Groundwater Under Control."

The required RFI Addendum Work Plan (TtNUS, 2001) was approved following submittal in February, 2001. The work plan summarizes data from previous reports and presents Hydrogeologic Conceptual Models (vertical cross sections) showing estimated groundwater flow paths and contaminant plume definition for each SWMU and AOC.

This RFI Addendum describes the results of additional field investigations carried out in 2001 and 2002 to determine the current nature and extent of contamination at SWMUs 3, 9, and 10 and AOC 1. This document has also been revised to describe additional field work in 2003 and 2004 at SWMU 3 and SWMU 9, and to remove the recommendations to update the CMS report for SWMU 10 and AOC (this updated was completed in 2004). The Environmental Indicators are not discussed in this report but will be addressed in a separate document. This report consists of the following sections:

- **Section 1.0 Introduction**
- **Section 2.0 Site Description**, describes the site location, description, and history; and summarizes the prior studies and corrective measures that have been implemented.
- **Section 3.0 Field Investigation**, outlines the sampling and analyses that were performed at each site.
- **Section 4.0 Nature and Extent**, describes the results of the investigation.
- **Section 5.0 Conclusions**
- **Section 6.0 Recommendations**

6. Recommendations

The intent of this RFI Addendum was to characterize the current nature and extent of contamination at SWMUs 3, 9, and 10, and AOC 1, so that the regulatory approval of the original RFI (ABB-ES-1996) can be restored. Following completion of the original RFI and CMS (ABB-ES-1997), several of the recommended corrective actions have taken place, and overall, the sites appear to be cleaner in 2002 than 1997. Nevertheless, in order to avoid potential confusion, the recommendations below are designed to be consistent with the original RFI.

6.1 Solid Waste Management Unit (SWMU) 3

- Based on the results of the Screening-Level Ecological Risk Assessment (Appendix J), it is recommended that no further action is warranted to address potential ecological risk at SWMU3.
- The original RFI (ABB-ES, 1996) indicates potential human health risk from direct exposure to SWMU 3 surface soil, and the original Corrective Measures Study (ABB-ES, 1997) recommends institutional controls to address this risk. Therefore this RFI Addendum recommends No Further Action with institutional controls (Risk Management Option Level II in 62-780.680(2) FAC) for SWMU 3.

6.2 Solid Waste Management Unit (SWMU) 9

- Soil and groundwater data indicate that SWMU 9 has been remediated to levels that are acceptable for unrestricted use. Therefore No Further Action (Risk Management Option Level I in 62-780.680(1) FAC) is recommended for SWMU 9.

6.3 Solid Waste Management Unit (SWMU) 10

- Additional soil and groundwater samples should be collected at SWMU 10 to determine the effect of the removal of the underground storage tank (UST) in June, 2002.
- Well PC-363-MW-2 should be re-sampled to determine if the currently reported value of bis(2-ethylhexyl)phthalate consistently appears at this location.

6.4 Area of Concern (AOC) 1

- While the remediation approach will be discussed in depth in the CMS, in general, it is expected that monitored natural attenuation and/or enhanced biodegradation will be implemented. If needed to support remediation decisions, groundwater modeling can be applied. Additional groundwater samples will be taken at AOC 1 in May, 2003, and these results will help determine the final remedial approach that will be proposed in the revised CMS.

**Final Meeting Minutes
Naval Support Activity Panama City
Charleston, SC
March 9, 2005**

MEMBERS PRESENT:

Jeff Adams	SOUTHDIV	Gerry Walker	TtNUS
Arturo McDonald	NSA PC - Timekeeper	Pete Paznokas	ICLD - Facilitator
Tracie Vaught	FDEP - Leader	Betsy Voss	TtNUS - Scribe
Dan Waddill	SOUTHDIV		

ABSENT

Mike Clayton	NSA PC
Rich May	TtNUS – Tier II

GUEST

Bart Chadwick – SPAWAR Systems Center San Diego
Robbie Darby – SOUTHDIV – Tier II

1. Check-in/Opening Remarks/Resource Sharing/Announcements/Head Count and Proxies/Guests/Review Ground Rules/Action Items & Parking Lot Review/Approve Minutes/Agenda Changes

Team had check in and reviewed ground rules and action items. To help save on expenses, Robbie Darby filled in for Rich May as the Tier II representative. Mike Clayton is absent due to sickness. Mike has given his proxy to Arturo.

Consensus #1 – The NSA Panama City Partnering Team Meeting Minutes from the November 16, 2004 meeting were approved by Team.

2. Break

3. Training – Productive Management - Pete P.

Pete P. presented a video on Productive Management. Productive management is a matter of style. The video discussed five different styles of management.

- The “Taskmaster” has a high priority on performance and a low priority on people.
- The “Comforter” places a high priority on people and a low priority on performance.
- The “Regulator” is both low on performance and people.
- The “Manipulator” gives a moderate priority on performance and a moderate priority on people.
- The “Developer” places a high priority on performance and a high priority on people. This is the most productive style of management.

4. Break

5. Trident Probe/AOC 1 - Bart

Dan wanted to use the Trident Probe method to support the NA remedy at AOC 1. Bart gave a slide presentation on the Coastal Contaminant Migration Monitoring Assessment. Previous investigations at AOC 1 showed exceedances near St. Andrews Bay. The investigations were unsure of where the discharge to surface water would occur. Bart's presentation elaborated on the Trident Probe and the UltraSeep System and the results of each at AOC 1. The Trident Probe is a flexible multi-sensor water sampling probe for screening and mapping groundwater plumes at the surface water interface. It is made up of three components: conductivity, temperature and porewater sampler. The UltraSeep System is a modular, state-of-the-art seepage meter for direct measurement of groundwater and contaminant discharges at the surface water interface. It can analyze 10 samples per 24 hours. For AOC 1, 30 sub-surface samples were collected on 100 ft grid at 2 ft bgs or depth of refusal.

The Trident results at AOC 1 were:

- Conductivity – potential discharge are within band approximately 200 to 300 feet offshore; strongest indication at T4-4, T3-3 and T1-3
- Temperature anomaly – temperature contrast not high enough to provide reliable verification; strongest confirmation at T4-4; thus sampling will rely more on conductivity
- Sub-surface – no sub-surface 1,1-DCE (ug/L) or TCE detected in the discharge zones, or in any of the 30 stations within the offshore grid.

The UltraSeep sampling design stations were selected based on on-site evaluation of trident data. Two stations were selected for UltraSeep, T4-4 and T3-3.

The UltraSeep results at AOC 1 were:

T4-4

- Positive mean flow with tidal pumping
- Peak discharge following low water
- No VOC discharge detected >PQL

T3-3

- Weak positive mean flow with tidal pumping
- Peak discharge following low water
- No VOC discharge detected >PQL (except Toluene)

Both stations identified by the Trident showed positive mean discharge of groundwater. No VOCs were detected >PQL in the discharge water collected by the UltraSeep at either station (except toluene at T3-3). No surface water VOCs were detected >PQL in the discharge zones or any of the 30 stations.

In general, it appears that there is an offshore zone of groundwater discharge to St. Andrews Bay, but there is no evidence of significant VOC release accompanying the groundwater discharge. Therefore, the monitoring assessment concludes that natural processes are effectively attenuating the VOCs before they reach St. Andrews Bay.

The Team is very impressed with the Trident Probe and UltraSeep process and may consider using this approach at other bases.

6. Lunch

7. Camp/SCAP Update - Jeff

Team needed to adjust a couple of dates on the SCAP and will do it for the next meeting.

Action Item #1: Jeff will find out when the SOB was submitted for AOC 1, SWMU 10 and SWMU 9 and inquire about the SOB process for public notice by 3/18/05.

Dan asked Tracie how to get new information into the RFI Addendum. The response was to send an updated RFI addendum in hard copy and a CD.

Action Item #2: TtNUS will attach the updated SCAP with the meeting minutes email.

8. Petroleum Update - Gerry

Gerry passed out a handout that corresponded with the slide presentation that Paul Calligan submitted.

9. Exit Strategy - Gerry

Per Tier II's request, dates were inserted on the Exit Strategy for "Next 5 yr. Review", "Last RIP/RACR" and "Last NFA". Robbie pointed out that the comments column on the spreadsheet were quite beneficial. He questioned, however, if the NFA Documentation information box could be more explicit.

Action Item #3: Jeff will research the NFA Documentation for concurrence letters or date of permit by 3/21/05.

10. Break

11. RFI Addendum Update - Dan

Dan indicated that they were delayed but are now ready to work on the RFI addendum document. Gerry stated that SOUTHDIV has funded TtNUS to do the RFI Addendum for SWMU 2

12. Tier II Update - Robbie

Robbie stated that the Exit Strategies are looking good. Their next meeting is scheduled for March 21, 2005. The Pensacola Team will be giving a presentation of the progress of their facility environmental program at that meeting.

13. Statement of Basis Update - Jeff

Jeff is in the process of working on the CMIP and in it will discuss LUCs.

14. Facility/MILCON Update - Arturo

Arturo indicated that initially there was concern that there may be some contamination from removing a 10,000 tank at SWMU 9 and 10. But it seems to be resolved. Everything is okay with the MILCONs.

15. SWMU 9 MNA Update - Dan

Dan passed out a summary of the justification for NFA at SWMU 9. The first two paragraphs explain the history. The third paragraph defines bis(2-ethylhexyl)phthalate. Bullet one explains the detection of bis(2-ethylhexyl)phthalate and how there is no predictable patten. The team determined that it was well written and should be adequate for the intended purpose.

Action Item #4: Dan will email an electronic copy of the Justification for NFA at SWMU 9 to the Team by 3/10/05.

16. Meeting Closeout – review action items, consensus items, +/-, next agenda

Consensus #2: Team agrees that the current CAMP looks acceptable.

Team scheduled next Partnering meeting for August 31, 2005 in Panama City. Arturo will look into a meeting room at St. Andrews State Park. Next teleconference scheduled for June 17, 2005 at 10:30 EST.

Action Item #5: Arturo will look into a meeting room at St. Andrews State Park by 3/18/05.

Meeting critique

Plus

- Bart's presentation
- Training video
- SWMU 9 NFA presentation
- Location and meeting room
- Trident Probe work
- Discussions on schedules
- Tracie as leader
- Everybody's participation
- Robbie's presence

Delta

- No refreshments
- Scheduling with Pete Dao
- Transition plan for Pete Dao lacking
- Mike Clayton's absence
- Petroleum update unprepared
- Byas' absence

Pete's feedback for the team:

- Good Team dynamics
- Humor
- Good participation
- Good questioning
- Good cooperation
- Good closure of Action Items
- Good Tier II link

Action Items
NSA Panama City Partnering Team
Updated March 9, 2005

Action Item No.	Responsible Party	Status	Due Date	Action Item
Action Items from November 16, 2004 Meeting				
04.11.01	Gerry	Completed	11/24/04	Gerry will send the Exit Strategy to Jeff to verify the Projected NFA and CTC dates by 11/24/04.
04.11.02	Arturo	Completed	1/15/05	Arturo will find out which pesticides were used in the SWMU 9 area on base wide that may have bis-2-ethyl-hexylphthalate by 1/15/05.
04.11.03	Dan	Completed	1/15/05	Dan will prepare SWMU 9 justification for NFA in relation to pesticides found base wide and provide a map showing distribution of detection found on base by 1/15/05 and include the information in the RFI addendum to be distributed on a CD.
04.11.04	Dan	Completed	1/15/05	Dan will look at TPH speciation results at AOC 1 to see if they're below the SCTL's by 1/15/05.
New Action Items from March 9, 2005 Meeting				
05.03.01	Jeff		3/18/05	Jeff will find out when the SOB was submitted for AOC 1, SWMU 10 and SWMU 9 and inquire about the SOB process for public notice by 3/18/05.
05.03.02	TINUS			TINUS will attach the updated SCAP with the meeting minutes email.
05.03.03	Jeff		3/21/05	Jeff will research the NFA Documentation for concurrence letters or date of permit by 3/21/05.
05.03.04	Dan		3/10/05	Dan will email an electronic copy of the Justification for NFA at SWMU 9 to the Team by 3/10/05.
05.03.05	Arturo		3/18/05	Arturo will look into a meeting room at St. Andrews State Park by 3/18/05.

NSA Panama City Partnering Team Consensus Items

Consensus Item No.	Consensus Item
1	The NSA Panama City Partnering Team Meeting Minutes from the November 16, 2004 meeting were approved by Team.
2	Team agrees that the current CAMP looks acceptable.

NSA Panama City Partnering Team Parking Lot

Parking Lot No.	Parking Lot Issue
	None for March

Final Teleconference Minutes
Naval Support Activity Panama City Partnering Team
June 1, 2006

Attendees:

Jeff Adams, Tracie Bolanos, Mike Clayton, Bill Gates, Tom Johnston, Arturo McDonald, Betsy Voss, Gerry Walker

Absent:

Rich May, Pete Paznokas, Larry Smith, Dan Waddill

Check-In

Gerry stated that there are three main topics for today's teleconference meeting. They include: the Tier II presentation given by Gerry and Dan, SWMU 2 update, and future Partnering meeting dates.

Tier II Presentation

Gerry and Dan met with the Tier II Team in Orlando on Tuesday May 30, 2006 to give a slide show presentation of the NSA Panama City Facility. Gerry gave an overall Facility update and Dan gave an update on the active sites and Partnering success for the SWMU3 wetlands and the Trident Probe use at AOC1. Gerry congratulated Dan on his presentation and felt the overall discussion went well. Tier II really liked the Trident Probe presentation. Their presentation lasted about an hour and a half. Tier II had a question about the June 30, 2006 date for Site G300 on the Exit Strategy. The Panama City Partnering Team knows the site won't be complete by that date, so a new date needs to be established. Tier II also questioned Gerry and Dan about the overall Partnering process and the facilitation and training. Emphasis was placed on making sure the Partnering Teams are getting adequate training from the facilitators.

Jeff will forward the Exit Strategy schedule to Tom and Gerry, and Betsy will attach that information to the meeting minutes. The schedule for future Exit Strategy due dates are as follows:

7/21/06
9/22/06
11/17/06
1/19/07
3/23/07
5/18/07

Consensus #1: Teleconference minutes from April 18, 2006 and May 17, 2006 were approved by the Team.

SWMU 2

TtNUS sent out the response to comments for the SWMU2 RFI Addendum. Tracie said she forwarded the responses to the University of Florida. This is one of 2 projects Tracie wants Erin at the University of Florida to finish before she leaves. Jeff is awaiting their comments and approval.

HSWA Permit

Jeff indicated he has contacted TtNUS to finish the HSWA permit and additional documents for the Facility. Jeff will work on the convenience check which was originally received from the Facility for \$5,000, but only \$1,000 is needed. Jeff will work with Arturo to resolve the payment.

Future Partnering Meeting Dates

Jeff suggested the next Partnering meeting be held in Panama City for the benefit of Tom and Bill to view the Facility. Arturo will look into reserving a meeting room on the base. The Team agreed on July 26-27, 2006 for the next Team meeting. The Facility tour will take place at 9:00 am on July 26, then half day meeting the rest of that day, and half day meeting on July 27.

TECHNICAL REPORT

**MONITORING OF WATER AND CONTAMINANT
MIGRATION AT THE GROUNDWATER-SURFACE
WATER INTERFACE**

**Demonstration Site I:
Naval Support Activity Panama City,
Panama City, Florida**

Final October 2005

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