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March 17, 1997

U.S. EPA  
ATTN: Gena Townsend  
345 Courtland Street, NE  
Atlanta, GA 30365

**RE:** Site 38 and OU-2 Remedial Investigation Report, NAS Pensacola  
Contract #N62467-89-D-318/0059

Dear Ms. Townsend:

On behalf of the Navy, EnSafe/Allen & Hoshall is pleased to submit one copy of the response to comments for the Site 38 and **OU-2** Remedial Investigation Report at the Naval Air Station Pensacola. If you should have any questions or need any additional information regarding this document, please do not hesitate to call me.

Sincerely,

EnSafe/Allen & Hoshall



Henry H. Beiro, P.G.  
Task Order Manager

Enclosure

cc: Bill Hill, SOUTHNAVFACENGCOM - 2 copies  
Ron Joyner, NAS Pensacola - 2 copies  
John Mitchell, FDEP - 1 copy  
Denise Klimas, NOAA - 1 copy  
Judeth Walker, NAS Pensacola - 1 copy  
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**Draft Remedial Investigation Report OU-2  
NAS Pensacola, Florida  
Response to EPA Region IV Comments**

November 26, 1996 (Gena D. Townsend)

**GENERAL COMMENTS**

**COMMENT:**

1. The conclusions regarding risk in this risk assessment are not valid because of multiple procedure errors. First, not all COPCs appear to have been selected appropriately. Second, the calculation of the groundwater exposure point concentrations deviate from EPA guidance. Third, use of the FI/FC term to calculate fractional soil exposure is inappropriate. Fourth subsurface soils, sediments, and surface water exposures were not considered. Fifth, some potential receptors and exposure pathways were not considered. **Sixth**, this RI report contains numerous discrepancies and data gaps and appears to have been written by several different writers. The report should be revised accordingly.

**RESPONSE:**

For the risk assessment, Region IV guidance - November 1995 supplement to RAGS was **used** for COPC selection criteria (screening concentrations were taken from Region III RBC Tables and FDEP Soil Cleanup goals and Groundwater Guidance Concentrations), calculating the groundwater EPC, and guiding the use of FI/FC terms. Previous approved RI reports for NASP were used **as** a templates for the risk assessment at OU-2. **As** such, the reasoning behind selection of exposure pathways is similar. These points are addressed in more detail with responses to specific comments.

In general, the first point is not valid. The Navy believes background is a valid screening tool. The second point is valid, however, the groundwater data set also deviates from typical groundwater data sets (~~see~~ notes on general comment 9). The Navy agrees to the third point (see notes on general comment 12). The Navy agrees to the fourth point with respect to subsurface soil. The Fate and Transport Section will be rewritten to reflect this. On the **fifth** point, the Navy agrees to clarify the risk assessment as to why certain scenarios were omitted. As for sediment and surface water, Site **41** is the end receptor of contamination to sediment and surface water,

further no surface water or sediment exists on OU-2 proper. The EPA's sixth point is correct in that the RI was written by several authors. While it may seem like there are discrepancies between the nature and extent and risk assessment sections, everyone has to remember that each section has its own mission.

**COMMENT:**

2. Throughout this risk assessment the term **BEQ** is used to refer to the PAH equivalency factor estimates. However, it is unclear what a **BEQ** is and which PAHs are contributors to the risk. Either the term PAH equivalents or **BAP** equivalents should be used for clarity.

**RESPONSE:**

The Region IV supplemental guidance to **RAGS** (11/95) specifies a toxicity equivalence factor approach for seven carcinogenic PAHs (benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene). The definition of **BEQs** is defined in Section 10.4, Toxicity Profiles. One term was selected and used throughout the RI report to represent benzo(a)pyrene equivalents (**BEQs**). The Navy agrees to clarify the text by providing the above sentences.

**COMMENT:**

3. Section 10.1, Page 10-4, Paragraph 1, Sentence 1, addresses the organization of the risk assessment. However, the text does not explain in sufficient detail the organization of the risk assessment. It is unclear that Section 10.2 covers the general aspects of the development of the risk assessment and that Section **10.3** covers the specific elements for each site until the end of Section 10. Additional statements explaining the purposes of Sections 10.2 and 10.4 would be helpful at this point. Moreover, the ecological risk assessment should be placed in a section of its own, to allow for expansion of the numbering system.

**RESPONSE:**

Additional statements will be added to clarify the organization of the risk assessment.

**COMMENT:**

4. Section **10.1**, Page **10-5**, Paragraph **1**, Sentence **4**, mentions collection of surface water samples. However, the surface water samples were not mentioned earlier in Section 7 (Nature and Extent of Contamination). There is no discussion as to why surface water is not considered as a media of exposure. This is true especially for Site **11** which is at the edge of the base and is described as a wetland area. Exposure to surface water is a potential route of exposure for workers and trespassers (recreational visitors), but this pathway is not addressed. The text should explain why the surface water exposure is not considered, and the discrepancy should be rectified.

**RESPONSE:**

Reasoning for the elimination of surface water exposure pathways will be added. Surface water is to be addressed in another report for Site **41** (wetlands) since no surface water is present at OU-2.

**COMMENT:**

5. Section **10.2.1**, Page **10-5**, Paragraph **1**, Sentence **5**, states: “results from surface soils, shallow and intermediate groundwater were used to assess possible human exposure to contaminants. However, subsurface soils were not considered in the risk assessment, and there is no explanation given for this omission. Although this is an active military base that is not targeted for closure, future plans may include construction of new buildings thereby exposing workers to subsurface contaminants. Other pathways of transport and exposure that should be considered for subsurface soils include transport of subsurface contaminants into the shallow groundwater and volatilization and transport of contaminants into buildings via foundation cracks. The screening procedure should include the soil

leaching **as** referenced in EPA's "Soil Screening Levels Guidance" document in the selection of COPCs. If these pathways are not considered, then **an** adequate rationale must be presented to justify not including the subsurface soil exposure. The report should be revised accordingly.

**RESPONSE:**

The Navy agrees **and** will address these concerns in the Fate and Transport section. In addition the text for the risk assessment will be changed to reflect the other pathways of transport.

**COMMENT:**

6. Section **10.2.5**, Page **10-8**, addresses the selection of chemicals **of** potential concern (COPCs). However, the selection of COPCs from the detected compounds or chemicals present in site samples (CPSS) is usually performed in the risk assessment, not in the nature and extent section. The current organization **of this** report makes it difficult to determine what was selected. In addition, the organization **of** Section 7.0 is by compound group and not by site. In Section 7.0 it is unclear which compounds are selected as COPCs for which sites. The text should be revised accordingly.

**RESPONSE:**

The nature and extent section simply detailed the exceedances by compound group since the sites were *so* close. Partnering team agreed to not act on sites that **do** not have exceedance of screening criteria. The Navy interpreted that to mean that analytes which did not exceed any screening criteria could be dropped from consideration. **This** interpretation was not clear in the text and if agreed upon could be reflected in the risk assessment.

**COMMENT:**

7. Section **10.2.5**, Page **10-8**, Paragraph **2**, Sentence **3**, states that the nature and extent of CPSS at each site are discussed in detail in Section **7**. However, the COPCs rather than the CPSS were discussed in detail in Section 7. (This applies to each of the sites in

Section 10.3.) It is customary and preferred to perform the selection of COPCs in the Risk Assessment section (Section 10) and not in the Nature and Extent of Contamination section (Section 7).

In addition, tables should usually be provided in the text which contain all detected compounds for each media, the frequency of detection, the maximum concentration, the screening value (and source of the screening value), the background concentration as applicable and whether or not the detected compound was selected as a COPC. The COPC screening value should usually be the lowest of the applicable RBCs or in the case of Florida, the lowest value of the RBCs or the FDER values. However, in the COPC selection discussed in this report, multiple screening values for each contaminant are presented. The text should be revised accordingly.

**RESPONSE:**

The Navy agrees text is unclear and plans to update Section 10 to include the COPCs selection.

Tables presenting data summaries, screening values (with reference), and COPC identification are in Appendix H. The accompanying text is in Section 10. COPC selection is based on either RBCs or FDEP screening values, and background concentration. It is unclear what is being referred to by “multiple screening values” other than background concentration. Use of background as a screening tool at the COPC selection stage is supported by Region IV’s RAGS supplement. The FDER Guidance spoken of is actually FDEP “Soil Cleanup Goal for Florida (1995). A comparison to all criteria including these soil cleanup goals is provided in Appendix D. A table of contents was not provided for each volume making this information harder to find, the Navy will add a table of contents for each of the five volumes.

**COMMENT:**

8. Section 10.2.7, Page 10-12, Paragraph 2, addresses potential exposed populations. However, there is no mention of potential trespasser or recreational receptor exposure to surface water and/or sediments for either current land use or future land use. The potential for trespasser or recreational user exposure is highest for Site 11 where it is at the edge of the base. Although the site is an active military base with security patrols so the trespasser exposure for current land use may be minimal, it is possible that in the future that the base could be closed or the mission could be changed to make access likely.

Also, the other receptor and pathway that are not considered are the future construction worker exposure to subsurface soils. This pathway should be considered.

In addition, volatilization of VOCs in the subsurface soils through foundations into buildings is a pathway that needs to be addressed. Since subsurface soils were not summarized or screened, it is difficult to determine if VOCs are in the subsurface soils.

**RESPONSE:**

Exposure pathways were selected based on precedents set by earlier RI reports. If necessary, analysis of other exposure pathways **can** be added based on the project team's needs. Surface water is to be addressed in a separate site report (Site 41). **See** response to Comment 5.

The Navy agrees a RBCA-type analysis for VOA migration to indoor air space should be included and plans to provide this assessment. See response to Comment 5.

**COMMENT:**

9. Section 10.3.1.3, Page 1043, Paragraph 2 and 3, discusses exposure point concentrations used in the investigation. However, it is unclear why the average of the detects was used for some COPCs and the UCL used for other COPCs. The calculations suggest that the UCL was calculated over all wells. Similarly, the average of all detects was not used for the Phase II samples. Use of a different statistical basis for the exposure point concentrations invalidates any risk comparison between the two phases. Therefore, groundwater data from the two phases may need to be re-examined.

**RESPONSE:**

The Navy agrees that it is confusing to use multiple methods to determine exposure point concentrations. However, the reader must understand we did not **mix** data from Phase I with Phase II for the exposure point concentration assessment. The two groundwater sampling phases are fraught with differences which make comparison moot. The reason for a second phase was to validate the existence of these contaminants.

The Navy indicated up front that it would be meaningless to try to compare the risk of the two groundwater Phases due to different sampling techniques and different sets of wells sampled. As for the groundwater EPC, the Navy looks forward to discussing the approach used supplemented by risk/hazard maps that did not make it into the draft RI report.

**COMMENT:**

10. Section 10.3.1.5, Page 10-44, Paragraph 3, mentions that Tables H-16 and H-17 present the computed carcinogenic risks and/or HQs associated with the incidental ingestion of and dermal contact with site surface soil, respectively. However, these tables containing the summary of the risk calculations should be included in Section 10 instead of Appendix H.

In addition, the risks and HQs were not summarized across all soil pathways. The report should be revised accordingly.

This comment applies to all the sites.

**RESPONSE:**

Cumulative risk and hazard are summarized for each site and appear as tables in Appendix H.

**COMMENT:**

11. Section 10.3.1.5, Page 10-45, Paragraph 3, Sentences 4 and 5, mention the risk and hazard for the Central Tendency (CT) assessment. However, there is no discussion of how the CT parameters are derived other than a brief discussion of the exposure point concentration derivation. These exposure parameters for the CT analysis need to be presented and discussed in this section but are discussed later in the Uncertainty Section.

The CT assessment should use the same exposure point concentration as the RME (reasonable maximum exposure) concentration used in the BRA. Confirm that the RME was used in the CT assessment, if not, correct the document.

This comment applies to all the sites.

**RESPONSE:**

Additional text will be added to clarify the Central Tendency assessment process used in this report. The concentration term will be the same for both RME and CT assessment.

**COMMENT:**

12. Section 10.3.1.6, Page 10-52, Paragraph 1, Sentence 6, indicates that a FYFC term of 0.4 based on frequency of detection (7 of 19) was used to adjust the exposure estimates. However, the use of frequency of detection to derive a fractional exposure point factor is not appropriate. Although this term was used to derive the risk estimates for all sites for different compounds, this term was not presented in the risk result section or discussed fully in the EPC derivation section. For example, in the Site 11 risk calculations, only the PAH BEQ has a FI/FC factor applied. The factor is 0.4 which resulted in a total risk estimate of  $1.1 \times 10^{-5}$  for the worker exposure to soil. The RME risk without the factor is  $2.8 \times 10^{-5}$ . Throughout the risk calculations, factors as low as 0.1 are observed. Using the FI/FC factor has resulted in lower risk estimates. Therefore, all risk estimates that use this FI/FC factor should be recalculated.

**RESPONSE:**

Use of a FI/FC term is generally discussed in the Region IV supplement to RAGS (11/95). In general, a FI/FC term is a factor applied to an EPC to address hot spots. A 95% UCL on the mean was calculated for each COPC to serve as an EPC. In instances where the data distribution caused the 95% UCL to exceed the maximum detected concentration (usually due to an elevated concentration at one sample location or "a hot spot") the maximum concentration was used as the EPC. The Navy believes this to be overly conservative. FI/FC terms were used only when the EPC defaulted to the maximum detected concentration at a given site. Each sample location was

assumed to spatially represent equal portions of the exposure area. To the extent that this assumption is true, use of frequency of detection as an indicator of the fraction of the exposure area that is impacted is a valid, non subjective approach. The appropriate use or elimination of FI/FC considerations in the RI report will be dependant on the needs of the project team. The RI report will be amended accordingly.

**COMMENT:**

13. Section 10.3.1.7, Page 10-57, Paragraph 1, Sentence **4**, states that Table H-30 presents risk summaries for each pathway/receptor group evaluated for Site 11. However, the tables for the risk summaries should be presented in this section instead of Appendix H.

**RESPONSE:**

The Navy disagrees. The risk summaries are provided in Appendix H.

## SPECIFIC COMMENTS

### COMMENT:

1. Section 10.1, Page 10-2, Paragraph 0.

The text list guidance documents (see bullets). However, the FDER guidance document “Soil Cleanup Goals for the Military Sites” is not included in **this** list of guidance documents. This source should be added to the list.

### RESPONSE:

This guidance is superseded by the Florida Soil Cleanup Goals (memo: September 29, 1995 and applicability defined in follow up memo 1/19/96). Appendix H provides these characteristic comparisons under the misnamed “FCCG” and will be renamed “FSCG” to represent Florida soil cleanup goals.

### COMMENT:

2. Section 10.2.4, Page 10-6 to 10-7, Paragraph 2.

The text discusses the quantitation limit. However, this term is not adequately defined. In data evaluation, there are Practical Quantitation **Limits** (PQL), Method Detection **Limits** (MDL), Contract Required Detection **Limits** (CRDL), and Sample Quantitation Limits (SQL). Typically, what is reported with lab results is the CRDL, or if the sample is diluted then the CRDL **is** multiplied by the dilution factor. Thus, it suggests that a non-detect may be less than the **PQL** not the **CRDL**. This is an important issue because the texts states that the lesser of one-half the detection limit or one-half of the lowest detected value (less than the detection limit) was used as the best estimate of the concentration for that analyte and sample in **this** investigation. This approach is not commonly used in risk assessments. For example, if the detection limit was  $10\ \mu\text{g}/\text{kg}$  and there was a sample which had a value of  $8\ \mu\text{g}/\text{kg}$ , then  $4\ \mu\text{g}/\text{kg}$  would be used as the “best estimate”. But, if a sample was diluted 10X and had a detection limit then **of**  $100\ \mu\text{g}/\text{kg}$  for the undetected analytes, it **is** unclear **if** a value **of**  $4\ \mu\text{g}/\text{kg}$  be used as the “best estimate” or if a value of

40  $\mu\text{g}/\text{kg}$  would be used instead of the usual 50  $\mu\text{g}/\text{kg}$ . There were samples which were highly diluted as can be seen in Table H-1. Some of the analytes had reported maximum detection limits greater than the detected maximum, but the text does not discuss how these values were handled. The text should present a discussion or references to how samples with grossly elevated detection limits were handled in the data evaluation.

**RESPONSE:**

The Navy agrees how censored data was handled is important and will review the text for clarity changes. The partnering team has agreed to  $\frac{1}{2}$  the published CRQL for background studies and needs to agree on a standard for risk assessments.

**COMMENT:**

3. Section 10.2.5, Page 10-9, Paragraph 4, Sentence 2.

The text states that screening values based on surrogate compounds were used if no screening values (RBC or toxicology values) were available. However, the text does not discuss what compounds are applied to this method. The text should present a discussion accordingly.

**RESPONSE:**

A discussion of surrogate values will be added to the text.

**COMMENT:**

4. Section 10.2.5, Page 10-10, Paragraph 1.

The text indicates that screening levels for groundwater include federal **MCLs**. However, generally, **MCLs** should not to **be** used as screening values in risk assessments because many of the MCLs are technology based and not entirely risk based. The text should be revised accordingly.

**RESPONSE:**

MCLs were not used for risk assessment screening. MCLs were used for comparison in other areas of the RI report. The text will be reworded so as not to mislead.

**COMMENT:**

5. Section 10.2.5, Page 10-10, Paragraph 2, Sentence 2.

The text indicates that soil and groundwater background concentrations were determined using results from two background sampling locations. However, two samples are not an adequate number for background samples especially for a base wide background set. This report should address this issue accordingly.

**RESPONSE:**

The Navy agrees this set of data is small, but requests a reference as to how the reviewer determined that the small **data** set is inadequate. These wells were sampled using quiescent methods from a topographic divide upgradient of all sites on base. There is not any historical evidence of hazardous material use or industrial activity in these areas. The close proximity and **similar** geology of soil horizons convinced the Navy that these samples offer the best background reference of any on the base.

**COMMENT:**

6. Section 10.2.7, Page 10-15, Paragraph 1, Sentence 4.

The text indicates that the groundwater EPC was established as the greater of the 95% UCL or the arithmetic mean of the detected concentration. However, EPA Region 4 guidance states that the groundwater EPC should be the arithmetic average of the wells in the highly contaminated area of the plume. In Table H-8 (groundwater at Site 11, Phase I), EPCs include the 95% UCL, arithmetic average, and maximum detected concentrations which could mean that the set of wells was different for each COPC. The text should present a discussion regarding the groundwater EPCs used in the risk assessment.

**RESPONSE:**

The Navy provided the most conservative approach to deal with each COPC. The text explains how each COPC EPC was arrived at and why. The set of wells was not deemed relevant to determining the EPC. The Navy will review this text with the goal of clarifying the methods used.

**COMMENT:**

7. Section 10.2.7, Page 10-16, Table 10-1.

The text shows that dermal contact area for an adult is 4,100cm<sup>2</sup>. However, a more typical value of exposed skin surface area from the dermal exposure assessment guidance is 25% of the adult surface area or 5,300cm<sup>2</sup>. The text should be corrected accordingly.

**RESPONSE:**

The skin surface area value of 4,100cm<sup>2</sup> for adults accounts for head, hands, and forearm at the 90th percentile from Table 4B.1, Exposure Factors Handbook, and assumes the individual is clothed with shoes, long pants, and short sleeves. The Navy believes this to be a reasonable estimation.

**COMMENT:**

8. Section 10.2.7, Page 10-21, Figure 10-2.

The text presents formulas for calculating CDI for groundwater. However, dermal exposure to semivolatiles and metals while bathing is not considered. Such a consideration should be included.

**RESPONSE:**

This is an insignificant exposure pathway as it relates to SVOCs and metals. Based on reviewer's comments to previous RI reports this pathway was excluded due to the negligible contribution to cumulative risk. Groundwater is not currently nor is it likely to be used as a potable or bathing water source because of natural iron and salt content. If requested the Navy can document these reasons in the text for the public.

**COMMENT:**

9. Section 10.2.8, Page 10-24, Paragraph 2, Sentence 4.

The text states that Table H-1 summarizes toxicological data for each COPC identified at OU-2. However, Table H-1 should be presented in this section not in Appendix H. The report should be rearranged accordingly.

**RESPONSE:**

The Navy disagrees with rearranging the report. This report section is required to provide a large number of tables. The text is broken too often by large tables making the text difficult to read.

**COMMENT:**

10. Section 10.2.8, Page 10-24, Paragraph 3, Sentence 4.

The text indicates that toxicological profiles are provided in Section 10.4. However, the toxicology profiles should be placed in Appendix H. The report should be rearranged accordingly.

**RESPONSE:**

The Navy disagrees with rearranging the report based on the same reasons mentioned in Comment 9.

**COMMENT:**

11. Section 10.2.9, Page 10-29, Paragraph 3, Sentence 2.

The text indicates that a more conservative risk level ( $10^{-6}$ ) is used to identify COCs in this investigation. However, the text does not explain why  $10^{-6}$  was used as the cumulative risk threshold instead of  $10^{-4}$ . The text should give the explanation accordingly.

**RESPONSE:**

The Navy agrees to clarify the text explaining that the State of Florida requires a comparison to the  $1.0E-6$  value.

**COMMENT:**

12. Section 10.2.10, Page 10-32, Paragraph 0, Sentence 4.

The text indicates that inhalation and dermal exposure are not incorporated into the soil screening values calculated by EPA. However, since October 1995, the RBC Table has included an RBC for inhalation exposure. The text should be corrected accordingly.

**RESPONSE:**

The RBC for residential soil is based on the ingestion pathway only since this is generally the most significant exposure pathway. The most recent soil screening guidance has recognized that the dermal exposure pathway may be significant for some compounds and has so far identified only pentachlorophenol as having a significant contribution to risk via dermal exposure. It is appropriate for screening pentachlorophenol in soil to divide the RBC by 2 to account for dermal exposure. The inhalation pathway is being added to the fate and transport section to clarify the text.

**COMMENT:**

13. Section 10.2.10, Page 10-36, Paragraph 2, Sentence 5.

The text states: "Phase I groundwater data was collected using techniques amenable to the entrainment of sediments in the groundwater samples." However, it is unclear if the Phase I groundwater **data** includes the trench samples **as** part of the groundwater data set. If so, Phase I samples should be removed from the groundwater data set and discussed separately. Two sets of groundwater risk calculations may be confusing. The text should be revised accordingly.

**RESPONSE:**

Trench samples were not included in the risk assessment for Site 11 with an explanation given on page 10-39 of Section 10.3.1. Each groundwater phase is considered separately in the risk assessment since the wells sampled in Phase I did not match the wells sampled in Phase II.

**COMMENT:**

14. Section 10.3.1.1, Page 10-39, Paragraph 3, Sentence 4.

The text indicates that trench water samples were not considered appropriate for consideration in the human health risk assessment since the sampling technique resulted in turbidity uncharacteristic of monitoring well samples. However, this is the first mention of trench water samples. There was a reference to trench water samples in Section 7 but in the context of groundwater samples. It is unclear whether the samples were the water from trenches dug during the field investigation or the water from permanent trenches or canals. The text should present a clear description of the trench water samples.

**RESPONSE:**

There are no permanent trenches or canals on Site 11. All sampling locations are detailed clearly in Section 5.

**COMMENT:**

15. Section 10.3.1.1, Page 10-39, Paragraph 3, Sentence 8.

The text references Tables H-1 and H-2. However, the text should refer to Tables H-2 and H-3.

**RESPONSE:**

The Navy agrees to make the appropriate changes.

**COMMENT:**

16. Section 10.3.1.2, Page 10-40, Paragraph 1, Sentence 1.

The text presents **soil** COPCs indicating that they are listed in Table H-4. However, the text does not show **PAHs** as the COPC which can be found in Tables H-4 and **H-6** in the risk calculations. The text should explain the discrepancy.

**RESPONSE:**

Carcinogenic PAHs are carried through the risk assessment as benzo(a)pyrene equivalents (BEQs) as per Region IV guidance. The data for the individual carcinogenic PAHs is presented on the summary table for informational purposes only. Naphthalene was identified as a Phase II groundwater COPC and was carried through the risk assessment, however, the text does not reflect this. The text will be edited.

**COMMENT:**

17. Section 10.3.3.6, Page 10-86, Paragraphs 1 and 2.

The text contains two subsections 10.3.1.7 and **10.3.1.8** that are numbered incorrectly. The text should be corrected.

**This comment also applies to Section 10.3.4.7(see page 10-96).**

**RESPONSE:**

The Navy agrees to renumber appropriately all subsections.

**COMMENT:**

18. Section 10.3.3.6, Page 10-86, Paragraphs 3 and 4.

The text mentions Phases I and II groundwater RGOs (also see Tables H-88 through H-91). However, definitions of Phases I and II groundwater RGOs are not presented. In this report, Phases I and II are only referred to as sampling phases. Therefore, the text should present clear descriptions of Phases I and II groundwater RGOs.

This comment applies to Sections 10.3.5.8 and 10.3.6.8.

**RESPONSE:**

A clear description of Phase I and II groundwater RGOs will be provided.

**COMMENT:**

19. Appendix H, Table H-151.

The text presents statistical analysis of COPC groundwater at Site 30. However, this table is not well presented due to incomplete and missing subtitles for each column. The table should be revised accordingly.

**RESPONSE:**

The table will be edited.