Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To:	Luda Voskov, Project Manager; SSDAP/Superfund Section, Remediation Division	**Date:**	April 13, 2010
From:	Larry Champagne; Technical Support Section, Remediation Division		
Subject:	Gulfco Marine Maintenance NPL Superfund Site Final Screening-Level Ecological Risk Assessment (SLERA) Draft Baseline ERA Problem Formulation Draft Baseline ERA Work Plan & Sampling and Analysis Plan March 10, 2010		

I have completed my review of these documents and the associated responses to previous comments and have the comments below.

SLERA Comments:

Table of Contents: The page numbering of this table is off beginning with Section 2.2.

P. xii, Executive Summary, 2nd paragraph and P. 48, Section 5.2.4 Ponds: The statements regarding the HQ for the sandpiper need to be modified. The current value of 1.2 appears to have been derived from only the water ingestion and the water-to-worm components of total intake. Other components (e.g., incidental sediment ingestion, sediment-to-food) were not included. Also see the related Appendix I comments.

Table 28: This table is mislabeled as being for sediment TRVs when it is actually for water TRVs.

Table I-4: The list of chemicals appearing in the sediment concentration portion of this table should correspond to the list appearing in Table 9. Currently, many chemicals that were detected in at least 1 of 8 samples in Table 9 do not appear in Table I-4. Although TCEQ guidance allows nonbioaccumulative chemicals that are at concentrations below their benthic screening-levels to be eliminated from the ERA, this practice may not be appropriate at an EPA site. The remaining Appendix I comments are based on evaluating the eliminated chemicals and associated exposure pathways.

Tables I-4 and I-5: In addition to the incidental sediment ingestion component, sediment-to-worm and sediment-to-crab components of the total intake for the sandpiper will need to be developed for the missing COPECs, as will the sediment-to-crab component for the green heron. Also, it is unclear why a BSAF/BCF is not provided for every COPEC. This value can be: obtained from empirical data, based on half the detection limit,

obtained from USEPA (1999) or other sources, or a default value of 1. If tissue data is used, there would be no need to assign dietary percentages. Finally, the exposure point concentration (EPC) for the sandpiper/green heron incidental ingestion should be the EPC values from Table 9. However, when determining what the COPEC concentration in the worm and crab is (Table I-8), it may be appropriate to multiply the maximum sediment concentration by the BSAF as these are benthic invertebrates.

Tables I-4, I-5, and I-8: The values for the crab and worm listed under "Food Ingestion" in Tables I-4 and I-5 do not correspond to the values in Table I-8. If a value appears for both sediment and water in Table I-8 (e.g., sediment-to-worm and water-to-worm for nickel, zinc, HPAH, and Total PAH), only the water value appears in Tables I-4 and I-5. In other words, these values were not combined. Also, only where a COPEC was identified for sediment but not for water in Table I-8 was that value reported in Tables I-4 and I-5.

BERA Problem Formulation Comments:

If the maximum sediment concentrations for each area when compared to the sediment screening benchmark (e.g., ER-L) resulted in an HQ > 1 for the polychaete, those same concentrations should have been carried forward into the Problem Formulation and compared to the midpoint.

P. 7, Section 2.1 Refined Procedures and Results: The reference to "Appendices C through J" should be to "Appendices C through G".

P. 8, Section 2.1 Refined Procedures and Results: The refined lead HQ for the sandpiper could not be confirmed as lead was not evaluated in Appendix G. Also see related SLERA comments.

P. 10, last paragraph, Section 2.3 Spatial Distribution of Remaining COPECs: Acrolein should be retained as a COPEC because it was detected in 25% of the samples. Acrolein should also be included in the analyses of the surface water samples used to evaluate water toxicity via the mysid shrimp toxicity test.

P. 12, 2nd paragraph, Section 3.0 Characterization of Ecological Effects: It is unclear why TCEQ was not used as a source for the ER-Ls and ER-Ms, especially since there appears to be errors in the referenced Table 3. Also see Table 3 comments.

Table 3: The units are not specified in this table, although they are assumed to be mg/kg. Also, it is unclear how the midpoint for 4,4'-DDT (0.032045 mg/kg) was determined as it does not correspond to the midpoint of the ER-L and ER-M (or any other values) presented in the SQUIRTS Table. In addition, TCEQ (2006) midpoint values for Sum DDT (0.00298 mg/kg) and Total DDT (0.02379 mg/kg) are both more conservative than the Table 3 value and should be used. Similarly, it is unclear how the midpoint value for

Total PAHs (11.86105 mg/kg) was derived as it does not correspond to the values in the SQUIRTS Tables. Finally, the "Notes" reference to "Buchman, 2009" should be to "Buchman, 2008".

Tables G-1 and G-4: Lead should be listed here as the HQ for the sandpiper exceeded 1 for pond sediment in the SLERA.

Table G-4: The zinc values in this table could not be corroborated.

Tables G-5 and G-7: The SLERA did not indicate that the green heron was at risk, so the need for these tables is unknown.

Table G-7: The listed COPECs are not causing risk to the sandpiper. This is evident from the table indicating that the HQs for 4,4'-DDT and zinc were less than 1 and were refined to even lesser than 1. Lead is the only COPEC for which the SLERA indicated risk to the sandpiper but is missing from this table.

BERA Work Plan and SAP Comments:

It is inappropriate to avoid collecting/analyzing soil samples and conducting soil toxicity tests based on a pending soil removal action that may or may not occur. It is preferred that this document present plans for collecting soil samples (including locations, numbers, depths, and analyses) to address any identified risk issues. Then, if the removal action does occur, modifications to this document can be made as needed.

P. 12, Section 3.2 Study Design, last paragraph: As previously stated, soil samples should be initially included in the study design and then dropped if the results of the pending removal action indicate it is appropriate to do so.

P. 12-14, Section 3.3 Analytical Methods: Discussions of the earthworm toxicity test and soil analyses should be included in this section and then vacated if the results of the pending removal action indicate it is appropriate to do so.

P. 13, Sediment chemical analysis, Section 3.3 Analytical Methods: Field measurements of redox potential should be included in these analyses. Accurate evaluation of the actual in situ concentrations of AVS/SEM requires sampling, handling, and analysis techniques that will maintain the in situ redox conditions. Also see additional comments on AVS/SEM.

P. 14, Sediment physical properties, Section 3.3 Analytical Methods: The statement about the findings from the pending RI/FS regarding "…consistent sediment grain size distribution throughout the investigation area" is acknowledged. However, it is believed that some degree of variability of sediment grain size between areas and within samples from the same area will occur. This variability is particularly important in the

interpretation of AVS/SEM results. Therefore, grain size analysis should be included for the AVS/SEM samples at a minimum.

P. 14, Section 3.4 Station Locations and Rationale, P. 19-20 Section 4.2 Sampling Locations, Timing, and Frequency, and Table 3: Although some samples should be collected in areas where previous samples have indicated the presence of high COPEC concentrations and or multiple COPECs, it is not appropriate that all samples meet these criteria. Particularly for samples that are to be submitted for toxicity testing, it is important that the samples not all be purposefully biased high in order to allow for a more meaningful interpretation of the results. For the same reason, sediment sample locations from the wetlands area should not all focus on locations where the HQ > 3, especially since no data interpretation (Section 3.5) is provided for the scenario where the sample is toxic and the HQ is less than 3 but greater than 1.

P. 14, Section 3.4 Station Locations and Rationale: Statements regarding areas not proposed for sampling based on the pending removal action should be deleted and these areas should be included for sampling.

P. 17-19, Section 4.1.1 Sediment Sampling: It is unclear from the discussion, but dedicated AVS/SEM samples should be collected and not be an aliquot of a larger sample. In addition, the depth of the AVS/SEM samples should be consistent as AVS will vary with depth.

P. 18, Intracoastal Waterway Sediment, last paragraph: Care should be taken to avoid pouring off any fine sediment when draining the overlying water from the sampler.

P. 25-26, Section 4.6.3 Toxicity Testing Methods and Tables 2 through 5: As previously stated, the earthworm toxicity test and soil samples should be included.

Tables 1-5: These tables should be modified to reflect the inclusion of soil samples and the earthworm toxicity test, as appropriate.

References:

TCEQ. 2006. Update to Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas RG-263 (Revised).January 2006 Version. http://www.tceq.state.tx.us/remediation/eco/eco.html

U.S. EPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer Review Draft. Office of Solid Waste and Emergency Response. EPA 530-D-99-001A, August. http://www.epa.gov/earth1r6/6pd/rcra_c/protocol/slerap.htm