MEMORANDUM

FROM: Susan Roddy

TO: Gary Miller

SUBJECT: Review of the draft Problem Formulation and Work Plan and Sampling and Analysis Plan for the Gulfco ecological risk assessment

DATE: April 13, 2010

The above named documents have been reviewed by the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ), with comments as follows:

1. The document is difficult to follow. The document shall be reorganized based on Areas/Receptors. For example, address soil invertebrate toxicity in South Area Soil separately from other areas. All appropriate issues could be addressed independently using this approach (e.g. background, refined exposure scenarios, site-specific aspects that affect decisions), and the areas addressed one by one following the order presented in Table 29 from the SLERA.

2. Fish shall be included in Tables 4 and 5 for assessment and measurement endpoints receptors in the Problem Formulation. It would be agreed that a toxicity test using the mysid shrimp would be protective of fish since the mysid would likely be more susceptible to exposure, but only if it can be documented that ammonia is not an issue. If ammonia (from any barge cleaning agents or other site-related source) is potentially an issue, then, in addition to the mysid shrimp toxicity test for the water column, there would also need to be an inland silverside fish toxicity test proposed (since fish are sensitive to ammonia). This shall be explained and documented.

3. One of the SDMPs at the end of the SLERA says that there is potential adverse impact on sedentary invertebrates in soil (South and North Areas), and that more assessment is warranted in Step 3. Earthworm toxicity tests (as representative of soil invertebrates) shall be proposed for the BERA Problem Formulation and Work Plan/Sampling and Analysis Plan (SAP). And, regarding page 9 of the Problem Formulation, this shall also be done for the South soil area since engineered fill and side embankments can constitute habitat for soil invertebrates (a complete pathway).

4. Another SDMP at the end of the SLERA states that there are localized adverse effects on sedentary benthics in sediment with exceedances of the midpoint between the

ERL and ERM. The samples proposed for the Work Plan and SAP for the BERA shall not be limited to those locations where there were exceedances of midpoints, but also shall include locations where ERLs were exceeded but below the midpoints (between ERLs and ERMs).

5. For the Problem Formulation, the appended tables (G-6) for the Refinement of COPECs evaluation did not include lead in the table for the sandpiper evaluation as implied by the SDMP at the end of the SLERA. Lead shall be included.

6. In the Problem Formulation, the contaminants listed in appended tables for the Refinement of COPECs for the sandpiper and green heron shall not exclude contaminants eliminated from the SLERA based on comparison to ERLs for benthic receptors. Tables shall be provided which include all the analytes by receptor and area of concern with columns indicating which contaminants were eliminated in each of the steps (with the SLERA as the starting point) and which include the rationale for elimination in order to summarize this information.

7. For Table 4 in the Problem Formulation (and Table 1 in the Work Plan/SAP), the testable hypotheses for the toxicity tests shall include statistical language regarding the Type I error (i.e., significance levels, p statements).

8. Tables 4 and 5 in the Problem Formulation (and Table 1 in the Work Plan/SAP) shall list fish in the aquatic guild being protected.

9. Table 1 in the Work Plan/SAP shall incorporate the toxicity tests to be conducted to evaluate risk and identify the assessment endpoint receptors for which the toxicity tests are representative. Also, the test endpoints shall be stated such as survival, growth, and reproduction for Leptocheirus; survival, growth, and egg development for the mysid shrimp; and survival and growth for Neanthes. Bioaccumulation data shall be collected at the end of these tests.

10. Despite a corresponding SDMP for soil invertebrates, soil invertebrates are missing, and shall be included. The Problem Formulation text, Tables, and Figures shall include toxicity testing (earthworm) for addressing soil invertebrate toxicity, which was identified as a SDMP in the SLERA. Depths of sampling for the toxicity test shall be matched to the depth for analytes and bioavailability parameters.

11. Problem Formulation, page vi, first paragraph under the bullets: The words "consideration of background metals concentrations" shall be removed. Background shall not be used to not propose metals for quantification and further consideration in the BERA in this instance because the receptors requiring further evaluation (benthic receptors and soil invertebrate receptors) are sedentary. Also, hot spots of metals (with HQ exceedances of unity with contribution from both site and background sources) could be missed for cleanup recommendations; this would thus be inadequately protective for these sedentary receptors. For example, there are some locations where potential hotspots for zinc would be missed if the sampling strategy included locations tailored

only to PAHs and pesticides. This is especially the case since the EPA guidance used for determining statistically significant differences between site background locations is a statistical (ANOVA) comparison to mean concentrations. For sedentary receptors, maxima concentrations are needed. Metals shall remain in the Problem Formulation (and Work Plan/SAP) for quantification for the BERA. Any text language, Tables, Figures, and Appendices affected by this comment shall be revised.

12. Page 6 of the Problem Formulation, Section 2: The Refinement needs to identify that the modifications used apply only to evaluation of food web risks.

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

14. 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. Lead shall be evaluated in Appendix G. Also see related SLERA comments.

15. The Problem Formulation background comparison (Section 2.2) appears to have failed to assess the data distributions for assigning appropriate statistical techniques for comparison. A 2-tailed T-test has been performed for all background comparisons, which only apply to normally distributed data sets. In addition, should the T-test be appropriate, a 1-tailed approach would add power to the test. It is possible that the results of this background comparison inappropriately conclude that site concentrations are equal to background concentrations, particularly if the data are not normally distributed. EPA background guidance requires such a distribution test, and the latest version of ProUCL (4.1) shall be used for this comparison in lieu of T-test applications from the web. Until appropriate statistical background comparisons are demonstrated, the statement "The conclusion is that Site concentration of these metals are not different from the background concentrations for all metals evaluated." (Paragraph 3) is not justified and shall be removed.

16. No justification has been provided as to why a 2-tailed T-test is appropriate. An analysis shall be performed to determine the data distribution (i.e. normal, lognormal, or random) and the most appropriate statistical test. Consider using the Wilcoxon Rank Sum test for non-normal data, and using ProUCL Version 4.1 background software. A clear null hypothesis shall be provided in the text for the background tests.

17. Regarding the Work Plan/SAP, the proposal for sampling locations for the toxicity testing for the BERA shall be based (and documented) on a rationale/strategy for collecting samples along a concentration gradient. Further samples are needed to capture the concentration gradient than just those from Figures in the SLERA displaying HQ exceedances of unity. The goal is, at the end of the BERA, is to determine ecologically-protective concentrations for contaminants for consideration in remedial decision-making. Thus, samples would shall to be collected from locations from the nature and extent of contamination document where there are not HQ exceedances to determine the NOAEL level. The intent is not to bias the sampling locations to only where the HQs

exceeded unity and to where the greatest number of contaminants had HQs exceeding unity. To more associate the results of the toxicity test to a contaminant's (or similarly acting group of contaminants) concentrations at that location, it would be best if (to the extent possible) locations for toxicity testing were selected separating out PAHs from pesticides, and from metals, sampling each along the respective concentration gradient. Explanation shall be provided for what can be done to achieve this. The intention that shall be incorporated into Tables 4 and 5 of the Problem Formulation is to develop site-specific NOAELs and LOAELs. Before the Work Plan/SAP document is resubmitted, a teleconference is needed for agreement on proposed sampling locations with rationale by contaminant (or groups of contaminants). Regarding PAHs, dibenzo (a, h) anthracene would be a good conservative protective indicator for selection of locations for sampling along a concentration gradient. Also, LPAH, HPAH, and TPAH groupings would be acceptable for selection of sample locations for the toxicity testing due to similarity in mechanism of toxic action.

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

19. Page 12, Section 3: Regarding the use of midpoints between ERLs and ERMs, mention and a brief summary shall be made of Long and MacDonald's 1998 article for interpretation of ERL and ERM data.

20. 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. The TCEQ ER-L values shall be used.

21. Page 13 of the Problem Formulation, regarding potentially complete, but less significant exposure pathways language in the first paragraph as well as reflected in Figures 10 and 11: on Figure 10, the Note: (Significant Potential Receptors shown in bold) shall be changed to state that these are the remaining receptors for evaluation in the BERA after the Refinement of COPECs. Analogously, this footnote shall be changed for Figure 11 as well. Additionally, all fish receptors listed on the site conceptual site model shall be bolded as well (since there were surface water quality exceedances, which include fish in the aquatic biota to be protected; the Jarvinen and Ankley assessment was not the only assessment for fish, therefore, fish are not to be eliminated from the BERA).

22. Toxicity profiles describing the mechanism of toxicity and the literature toxicity studies for the contaminants shall be added to the Problem Formulation document.

23. Page 16 of the Problem Formulation, fourth sentence, last paragraph: the word "decreases" shall be substituted by the word "increases" given the logic on the number of substituted chlorines and ability to metabolize, thus, the sentence shall read "This class of compounds are soluble in lipids and partition readily into the fatty tissues of higher-level

consumers, with the ability to be metabolized decreasing as the number of substituted chlorines increases. (not "decreases"). This is the needed correction because the next sentence states that "For highly substituted compounds, metabolism is less likely..."

24. Page 17 of the Problem Formulation, end of first bullet: the word "northwest" shall be changed to the word "northeast".

25. Page 21 of the Problem Formulation: fish shall be added to Risk Question #2. Explanation shall be provided that by conducting a mysid shrimp bioassay, fish would be covered as protected because the mysid shrimp would have greater exposure and be more sensitive; this holds true only if documentation can be provided that ammonia is not an issue from site-related sources that would necessitate the addition of the inland silverside fish toxicity test (as fish are more sensitive to ammonia than mysid shrimp).

26. Table 3: The units are not specified in this table, although they are assumed to be mg/kg. The units shall be included. 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 shall 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" is actually to "Buchman, 2008". Given these issues, the TCEQ values shall be used instead of the NOAAs SQUIRTS values.

27. Section 5.3.1, page 30, and Section 5.3.2, page 31: project- or method-specific precision and accuracy criteria for the project have not been included, and shall be presented in these sections.

28. Tables G-1 and G-4 of the Problem Formulation: Lead shall be listed here as the HQ for the sandpiper exceeded 1 for pond sediment in the SLERA.

29. Table G-4 of the Problem Formulation: The zinc values in this table could not be corroborated. The zinc values shall be supported, or revised as appropriate.

30. Regarding the Work Plan/SAP, 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. This document shall 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.

31. Regarding the Work Plan/SAP, more detailed language shall be included for the 7 steps of DQOs. For instance, regarding the toxicity tests, the testable hypotheses shall be stated in terms of a null hypothesis, and shall include p statement language regarding type

1 error (alpha, false positive value) a priori. This shall be stated in terms of a null hypothesis (i.e., probability of rejecting a null hypothesis when it is true).

32. Regarding the Work Plan/SAP, no defined DQOs result in the absence of clear directions as to how the collected data will be interpreted and applied to determine ecologically-protective concentrations of contaminants (based on back-calculations of site-specific, contaminant-specific NOAEL and LOAEL ecotoxicity values) for recommendation in consideration for remedial risk management decision-making. This information shall be included to enable understanding for how PRGs will be determined at the end of the BERA. For example, toxicity tests can; along with other lines of evidence, assist in the determination of whether the matrix is toxic. Apparent effects in toxicity tests will not tell one exactly which chemical is causing the toxicity, but these data, used with other lines of evidence (such as dry sediment concentrations exceeding probable effect concentrations) can assist in determining which particular chemical(s) are responsible for the toxicity. The document shall be revised to include a discussion of how chemical analytical and bioassay results will be used in making risk management decisions and setting remedial objectives. This shall be included in the updated DQO section, particularly in the "if-then" series of project decisions. A first step would be discussion of how the weight of evidence will be used to determine whether risks require further consideration in risk management. The text shall then discuss how risk results would be used to set remedial action objectives. Finally, text shall be added to discuss how data can be used to define remedial action levels. Standard methods include but are not limited to:

a. Creating a regression relating chemistry to bioassay results and selecting chemical concentrations as clean-up goals based on an expected level of impact;
b. Creating effects and no effects ranges of concentrations based on bioassay results and using these to establish effects thresholds; and
c. Using bioavailability data to modify literature-based benchmarks, and evaluating relevance based on relationships to bioassay results.

33. P. 12, Section 3.2 Study Design, last paragraph: As previously stated, soil samples shall 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.

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

35. P. 13, Sediment chemical analysis, Section 3.3 Analytical Methods: Field measurements of redox potential shall 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.

36. Section 5.3, page 30, last paragraph of the Work Plan/SAP: the text states "Based on the results of the Problem Formulation...quality of data and acceptable levels of decision error were established as presented in Section 3.0." Section 3.0 did not present the quality or acceptable levels of decision error. This information shall be added to the text.

37. 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 shall be included for the AVS/SEM samples at a minimum.

38. For each of the toxicity test samples, particle or grain size analysis shall be conducted concurrently and collocated with the samples (this is especially important regarding bioavailabity of PAHs with respect to toxicity because of PAH adsorption) (see also page 15 of the Problem Formulation). The analogy applies to the TOC measurements to be matched to the toxicity test samples for more definitive decision-making.

39. Concurrent and co-located sampling for redox potential shall be proposed. Additionally, these shall be dedicated samples (collocated, but not aliquots, as well as concurrent) separate from the sample for AVS/SEM measurements, the toxicity testing, and analytical sampling so that there is no disturbance affecting measurement of the redox potential. Likewise, a dedicated (co-located, but not aliquot, as well as concurrent) toxicity test sample separate from the media sample for chemical analysis shall be collected.

40. Page 7 of the Work Plan/SAP, Assessment Endpoints, second sentence: the word "relevant" shall be substituted with the word "sensitive and susceptible".

41. Field measurements of water quality parameters (e.g. salinity, DO, temperature, etc.) are not discussed in the Work Plan/SAP text. Field measurements of these parameters at sediment and surface water locations shall be included.

42. Page 10 of the Work Plan/SAP, last bullet: the word "sediment" shall be changed to "media".

43. Page 11 of the Work Plan/SAP, Study Design: soil invertebrate toxicity testing shall be added. A description shall be included for how these lines of evidence will be used to develop ecologically-protective PRGs for consideration in remedial decision-making. Additionally, it shall be mentioned that the toxicity testing results will be used to develop site-specific LOAELs and NOAELs.

44. Section 3.1, 2nd paragraph, page 11 and Section 5.3, page 29: reference is made to USEPA DQO process, and refers to EPA (2000). EPA (2000) was updated in EPA (2006), and there were some changes to the names of the process. The DQO statements shall reflect the revised guidance.

45. Page 12, Page. 14, Section 3.4 Station Locations and Rationale, Page 19-20 Section 4.2 Sampling Locations, Timing, and Frequency, and Table 3 of the Work Plan/SAP: in the first complete paragraph, it is stated that "Sample station locations have been selected based on the number and magnitude of COPECs with HQs >1 as shown on Table 3" (See also page 14 of the Work Plan/SAP, Section 3.4): 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. Rather, the sample station locations shall be selected based on concentration gradients for each of the COPECs which would include stations with concentrations reflecting HQs both above and below unity as mentioned in a comment above. Thus, more samples shall be included than those proposed on the Figures, and the detailed rationale provided.

46. Regarding the Work Plan/SAP, there shall be further explanation that depths for collection of the samples for toxicity tests shall be matched with the samples for analytical media sampling as well as for samples to be used for estimating measures of bioavailability. These samples shall not be aliquots so as to not cause a disturbance of the sample resulting in any loss of COPECs.

47. Because polychaetes burrow, the depth of the sampling for the polychaete Neanthes toxicity test shall be matched to an appropriate depth for this polychaete, and the rationale provided. See also page 18 (Field Sampling Plan). Acceptance criteria shall be provided for the Neanthes toxicity test.

48. Page 12 of the Work Plan/SAP, second complete paragraph: the last sentence ("COPECs 4,4-DDT and Aroclor-1254, and the soil exposure pathway in this area were carried forward from the problem formulation; however, based on the pending Removal Action, soil samples are not included in the ecological investigation study design") shall be eliminated and replaced with a sentence stating that soil samples are included in the ecological investigation study design for this area.

49. Page 13 of the Work Plan/SAP, second complete paragraph: where the mysid shrimp toxicity test is mentioned, it shall be added that this test receptor was selected as more susceptible to exposure to COPECs than fish, and that therefore, assessing for this receptor would include protectiveness for fish as well; this language shall only be added pending documentation that ammonia is not an issue necessitating the inclusion of an inland silverside fish toxicity test.

50. Total Organic Carbon will assist in the estimation of the bioavailability of non-polar organics such as DDT and shall be assessed.

51. Page 14 of the Work Plan/SAP, second complete paragraph: particle size shall be collected with each of the samples collected for the toxicity testing. Also, collection of soil analytical data concurrent and co-located with the soil invertebrate toxicity testing shall be added to the plan.

52. Section 3.3 of the Work Plan/SAP, Surface water analyses, page 14: this section states method 6010/6020 will be used to assess dissolved copper. Because the water is saline, it is likely that there will be elevated method detection and reporting limits because of sample dilution. A discussion/assessment shall be provided to determine if either of these methods will achieve the detection limit required for surface water risk values.

53. Page 14 of the Work Plan/SAP, Section 3.4: regarding the third sentence ("Sediment sampling locations in the wetland area were selected to focus on locations where the HQ was greater than 3"), "3" shall be changed to "1", and the resultant changes shall be described in the sampling locations and numbers to facilitate better interpretation of toxicity test results. 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.

54. Page 14 of the Work Plan/SAP, Section 3.4: regarding the last sentence ("Areas of the Site that will be covered by the pending Removal Action to repair the former surface impoundments cap, including the area immediately south of the former surface impoundments, are not proposed for sampling") shall be removed, and those areas shall be proposed for earthworm toxicity testing. All statements regarding areas not proposed for sampling based on the pending removal action should be deleted and these areas should be included for sampling.

55. Page 15 of the Work Plan/SAP, Data Interpretation Procedure: in this section, more detail shall be included as generally commented above regarding a DQO decision rule, null hypothesis, and Type I error, p value statements.

56. Section 3.5, page 15 of the Work Plan/SAP: this section states that a line-of-evidence approach will be used. Additional discussion shall be included regarding both the individual lines of evidence and the overall weight of evidence evaluation. For lines of evidence, the following additional information shall be included:

a. test endpoints (as listed later on page 26) and their relevance;
b. details regarding comparisons, including whether they will be conducted quantitatively or qualitatively; whether they will be conducted on a location-by-location basis or using group statistics; the type of statistics planned; and the planned interpretation of comparisons to both reference and control samples;

c. details regarding trend analyses, including whether they will be conducted quantitatively or qualitatively; the type of statistics planned; source-related parameters (i.e. sediment and pore water COPEC concentrations, AVS/SEM results, etc.) to be evaluated for influence on bioassays; and non-source related parameters to be evaluated for influence on bioassays (i.e. ammonia, grain size, salinity etc.), and;
d. discussion of rationale and methods for any other types of evaluation planned.

The section shall also include a discussion of the overall weight of evidence approach. Discussion of a qualitative weight of evidence approach typically includes a description of the relative reliability, relevance, and importance of each line of evidence and explains the general process by which conclusions will be reached.

57. Page 19 of the Work Plan/SAP, Surface Water Sampling: it is stated that surface water samples will be collected from one location north of the wetlands north of Marlin Avenue. Collection of only one sample is inadequate, and sampling along a concentration gradient shall be performed.

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

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

60. Section 4.1.2 of the Work Plan/SAP, Pore Water Sampling, page 19: the third sentence mixes units (ft and cm), and the rest of the section uses units of ft and in. Consistency in units shall be maintained.

61. Section 4.2 of the Work Plan/SAP, page. 19: the work plan does not include a schedule for performing the samples collection, analysis, and validation. A schedule shall be added to the work plan such that all sample collection, analysis, and validation actions shall be completed no later than sixty (60) calendar days following receipt of EPA approval of the Work Plan/SAP.

62. 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 shall be included.

63. Section 5.3 of the Work Plan/SAP, Data Quality Objectives, page 29: there is no "sensitivity" DQO established within this section of the document. The sensitivity DQO shall be included.

64. Section 5.3.1 of the Work Plan/SAP, Precision, page 30 and Section 5.3.2, Accuracy, page 31: project- or method-specific precision and accuracy criteria for the

project have not been presented in these sections. Precision and accuracy criteria shall be included.

65. Section 5.3.3 of the Work Plan/SAP, Completeness, page 31: a completeness goal on the sample level of 90% has been established. There are several critical samples (such as surface water dissolved copper) that would suggest that a completeness goal of 100%, for those samples would be appropriate. A completeness goal of 100% shall be established for these samples.

66. Section 5.4.2 of the Work Plan/SAP, Sampling Quality Control Requirements and Acceptability Criteria, page 33: acceptability criteria have not been established in this section; acceptability criteria shall be included.

67. Table 2 of the Work Plan/SAP, Analytical Methods: this table is not referenced in the text; a reference shall be added in the text at the appropriate location.

68. Tables 1-5: These tables shall 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