

Meeting Minutes

Project: Tronox  
Location: Conference Call  
Time and Date: 8:30 AM, Friday, November 9, 2007  
Meeting Number: ---  
In Attendance:  
NDEP: Brian Rakvica, Shannon Harbour  
Hackenberry Associates: Paul Hackenberry (consultant to NDEP)  
Neptune and Company: Paul Black, Paul Duffy (consultants to NDEP)  
Environmental Toxicologist: Teri Copeland (consultant to NDEP)  
Environmental Answers: Keith Bailey (consultant to Tronox)  
ENSR: Dave Gerry, Brian Ho, Lisa Bradley, Sally Bilodeau,  
Gerry Hels, Robert Kennedy, Carmen Caceres-Schnell,  
Mike Flack, Elizabeth Perry (consultants to Tronox)

1. The purpose of this conference call was to discuss NDEP's draft comments (Draft Comments) on the Phase A Source Area Investigation and Phase B Work Plan and how these could affect TRX's proposed field schedule for Phase B (proposed November commencement).
2. The NDEP provided draft comments to the group for discussion purposes only. The NDEP noted that the draft comments are to be considered very preliminary, repetitious, and not reconciled with the revised Table 1-1 and revised Plate I-2.
3. Statistics, the NDEP and TRX agreed to have their consultants discuss the statistical comments on a separate call, most of which appear to be minor.
4. Adequacy of characterization
  - a. The NDEP clarified that the NDEP is not trying to state that all source areas haven't been characterized; however, the NDEP is stating that this has not been demonstrated. NDEP has not been able to reconcile all of the information to determine if all source areas require additional characterization.
  - b. TRX stated that revised Table 1-1 and revised Plate I-2 were submitted to address the source area data adequacy issue. The NDEP stated that a review of these new items had not been completed but on-going. NDEP also stated that Plate I-2 should include the locations of the historic borings. In addition, NDEP anticipates spending a lot of time reviewing Table 1-1 and trying to correlate this to information that is in the CSM.
  - c. TRX stated that information and/or data for some of the LOUs has not been located but that references for available data can be found in the CSM. For example, some areas have been issued No Further Action Determinations (NFAD) suggesting that data was collected but that data could not necessarily be located.
  - d. TRX stated that the direction given for the revised Plate I-1 and Table 1-1 was that each LOU would have an associated Phase A or Phase B boring so that validated data would be on record associated with each LOU.
  - e. TRS believes that approximately 15 LOUs have received NFADs although there this number may be higher. TRX understands that these NFADs may have been

- rescinded but received the direction from NDEP that it was acceptable to use historical detected concentrations but could not use historical non-validated non-detects. TRX to investigate and report LOUs with historic NFADs on Table 1-1.
- f. NDEP indicated that the review of Table 1-1 will include a comparison of the Description of Chemicals Identified and Historical Investigations column with the CSM.
    - i. If an LOU is identified as poorly characterized, then a broad suite of analytes is appropriate; otherwise, site data could be used to reduce the analytical suites requested.
    - ii. Based on the effort for the comparison to the CSM, the NDEP estimates approximately one additional month to complete the review of this document.
  - g. TRX stated that the mobilization for the Phase B SAP will be postponed pending NDEP's final comments.
  - h. TRX stated that a table similar to revised Table 1-1 will be submitted for groundwater.
  - i. TRX clarified that samples collected for the Phase 2 parcels are located at the surface and 10 feet below ground surface (fbgs).
  - j. TRX will submit an addendum document to the Phase A Report and Phase B Work Plan document to address some of NDEP draft comments.
5. Radionuclides – soil,
- a. The NDEP stated that TRX's Radium 226 (Ra-226) and Radium 228 (Ra-228) do not correspond with the BRC/TIMET background dataset; however, there appears to be a discrepancy in the BRC/TIMET background dataset. NDEP is researching for an explanation for this discrepancy including analysis preparation method.
  - b. Alpha spectrometry (Alpha) vs. Gamma spectrometry (Gamma), TRX stated that NDEP agreed to Gamma with 10% Alpha for thorium and uranium species. Additionally, TRX stated that Alpha was not used for Ra-226 and Ra-228 soils analysis only Gamma. It was noted that this is a possible source of discrepancy in the data sets (TRX versus background). NDEP suggested that TRX perhaps back quantitate the radium data based on the alpha analyses and see if this provides better resolution.
  - c. The NDEP pointed out that the Ra-226 and Ra-228 fail background comparisons but that the other radionuclides do not and that if the radionuclides are in secular equilibrium, then all or none of the radionuclides would fail.
  - d. The NDEP suggested that TRX identify which samples are deep (i.e. Muddy Creek vs. Alluvium). If samples are identified as deep samples, then they should be removed from the current background analysis until comparable data has been collected. It was also noted that this does not address the issue of secular equilibrium.
  - e. The NDEP suggested addressing the Gamma, deep samples and secular equilibrium issues to reconcile background.
6. Radionuclides – groundwater,
- a. TRX stated that they have proposed analysis for radionuclides in groundwater in the Phase B WP.

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- b. TRX stated that they observed elevated uranium and thorium on the eastern portion of the site, which may be associated with TIMET.
  - c. The NDEP noted that M29, located near Unit 6 in the southeast portion of the site, contained the highest uranium concentrations. NDEP noted that this was omitted from the report.
  - d. The NDEP noted that M120, located on the southern portion of the site, contained elevated detections of several compounds that have not been observed at the other plant sites.
  - e. The NDEP considers that an unexplained radionuclide source exists, which prompted comments for additional radionuclide sampling of soil.
7. Asbestos,
- a. NDEP will provide sample calculations for asbestos. **ACTION ITEM.**
  - b. NDEP located the raw data for asbestos thereby addressing Draft Comment 90.b.
  - c. NDEP stated that analytical sensitivity for asbestos can be reduced by collecting more samples and would hence reduce the calculated risk.
  - d. NDEP stated that the upper confidence boundary on the counts should be used in the calculations and that the counts should be included on the summary table.
  - e. TRX indicated that several asbestos detections had been reported for the Parcels A & B Phase II Investigation. The asbestos samples were still being analyzed.
  - f. TRX indicated that asbestos sampling proposed in the Phase B WP should be expanded to include Evaluation Area (EA) 4 and EA10.
  - g. TRX raised some ideas about alternate counting rules. NDEP noted that this has regional ramifications and needs discussion.
  - h. NDEP and TRX agreed to have their consultants discuss technical issues on a separate call, if necessary.

NDEP and TRX stated that asbestos will probably be the driver in a risk assessment.

8. Risk Assessment and EAs,
- a. TRX stated that they met with the NDEP early prior to document submittal proposing the 11 EAs and that NDEP approved this approach. The NDEP stated that there is a difference between evaluation areas and an exposure area for risk assessment. The NDEP also stated that the NDEP approved this approach with the caveat that approval ultimately depended upon the submitted data. The NDEP was expecting relative homogeneity of the EAs.
  - b. TRX stated that they are using a random exposure scenario for a receptor in each EA. NDEP stated that this was not consistent with other industrial scenarios and that there is potential for a receptor to be exposed to a smaller area.
  - c. NDEP suggested TRX look at the data and determine if different EAs are warranted and that the goal for the delineation of EAs should be the largest exposure area that can be justified based on data and receptor exposure.
  - d. TRX stated that the Beta Ditch was separated into a separate EA.
  - e. NDEP noted that TRX does not know the future use of the entire site so that an unrestricted industrial exposure scenario is appropriate.
  - f. NDEP noted that if the risk assessment is conducted prior to remediation, then hot spots will have to be separated into smaller exposure areas. Additionally, TRX could combine exposure areas after remediation (hence achieving homogeneity).
9. Analytical suites,

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- a. NDEP stated that the full standard suite of metals (32 metals used in Phase A) should be used in the Phase B WP.
    - i. Tungsten and titanium have potential source areas on-site.
    - ii. Silver (and other metals) could be eliminated if TRX can demonstrate data adequacy on a source area basis.
  - b. NDEP stated that TRX proposed reduction in analytes is based on the assumption that the source areas have been adequately characterized. The NDEP does not concur with this assumption at this time.
  - c. TRX will propose a reduction in the 32 metals list **ACTION ITEM.**
10. Data validation and data usability (Draft Comments 48 – 52),
- a. NDEP understands that some of these comments may be addressed in the DVSR.
  - b. NDEP stated that the text of the Phase A report indicates that data was excepted if most of the data “generally” had acceptable detection limits. This is not acceptable to the NDEP. Each data point should be evaluated for usability.
  - c. TRX stated that they would not use any data identified as rejected in the DVSR.
  - d. NDEP provided discussion and examples of how usability differs from validation.
  - e. TRX stated that this will be explicitly addressed at the time of risk assessment.
11. Schedule, TRX will not proceed with Phase B WP but will continue to review the Draft Comments to see if “Phases” of characterization could be commenced (i.e. soil gas investigation).