



# STATE OF NEVADA

Department of Conservation & Natural Resources  
DIVISION OF ENVIRONMENTAL PROTECTION

Brian Sandoval, Governor

Leo M. Drozdoff, P.E., Director

Colleen Cripps, Ph.D., Administrator

March 21, 2011

Jay A. Steinberg  
Nevada Environmental Response Trust  
35 East Wacker Drive, Suite 1550  
Chicago, IL 60601

Re: **Tronox LLC (TRX) Facility**  
**Nevada Environmental Response Trust (Trust) Property**  
**NDEP Facility ID #H-000539**  
Nevada Division of Environmental Protection (NDEP) Response to:  
*Revised Technical Memorandum: Calculation of Leaching-Based, Site-Specific Levels (LSSLs) for the Soil-to-Groundwater Pathway Using NDEP Guidance, Tronox LLC, Henderson, Nevada*  
Dated: February 14, 2011.

Dear Mr. Steinberg,

The NDEP has received and reviewed TRX's above-identified Deliverable and provides comments to the Trust in Attachment A. A revised Deliverable should be submitted **by April 22, 2011** based on the comments found in Attachment A. The Trust should additionally provide an annotated response-to-comments letter as part of the revised Deliverable.

Please contact the undersigned with any questions at [sharbour@ndep.nv.gov](mailto:sharbour@ndep.nv.gov) or 775-687-9332.

Sincerely,

Shannon Harbour, P.E.  
Staff Engineer III  
Bureau of Corrective Actions  
Special Projects Branch  
NDEP-Carson City Office  
Fax: 775-687-8335

SH:sh



cc: Jim Najima, Bureau of Corrective Actions, NDEP  
Greg Lovato, Bureau of Corrective Actions, NDEP  
William Knight, Bureau of Corrective Actions, NDEP  
Carolyn Tanner, AG's Office  
Bill Frey, AG's Office  
Brenda Pohlmann, City of Henderson  
Stephen Tyahla, U.S. Environmental Protection Agency, Region 9  
Andrew Steinberg, Nevada Environmental Response Trust  
Allan Delorme, ENVIRON  
Mark Travers, ENVIRON  
Mike Skromyda, Tronox LLC  
Matt Paque, Tronox LLC  
Deni Chambers, Northgate Environmental  
Brian Rakvica, McGinley and Associates  
Joe McGinley, McGinley & Associates  
Barry Conaty, Holland & Hart LLP  
Ranjit Sahu, BRC  
Rick Kellogg, BRC  
Lee Farris, BRC  
Mark Paris, Landwell  
Craig Wilkinson, TIMET  
Kirk Stowers, Broadbent & Associates  
Victoria Tyson, Tyson Contracting  
George Crouse, Syngenta Crop Protection, Inc.  
Nick Pogoncheff, PES Environmental  
Lee Erickson, Stauffer Management Company  
Michael Bellotti, Olin Corporation  
Curt Richards, Olin Corporation  
Paul Sundberg, Montrose Chemical Corporation  
Joe Kelly, Montrose Chemical Corporation of CA  
Jeff Gibson, AMPAC  
Larry Cummings, AMPAC  
Ebrahim Juma, Clean Water Team  
Joe Leedy, Clean Water Team  
Kathryn Hoffmann, Clean Water Team  
Paul Hackenberry, Hackenberry Associates, LLC

cc: Lee Farris, BRC, 875 W. Warm Springs Road, Henderson, NV 89011  
Lee Erickson, Stauffer Management Company

## Attachment A

1. The NDEP understands that this soil screening document could presumably be used as reference in support of and/or appended to Health Risk Assessments or other decision documents. Furthermore, calculating LBCLs and LSSLs utilizes RBGCs, thus screening against site soil samples is a risk-based process. The Trust should note and address as necessary that there is a potential problem with this as the current soil screening document lacks certain elements of a risk assessment including:
  - a. Electronic copies of the laboratory reports (these are included in the data validation summary report (DVSR), but one or the other should be included in the electronic deliverable for the health risk assessment (HRA) report).
  - b. A summary of the data validation that is reported in the DVSR to verify that the data are of sufficient quality from the laboratory.
  - c. A data usability evaluation to demonstrate that the data are usable for the decision to be made.
  - d. Plots of the data (including spatial plots) as part of exploratory data analysis (potentially focused on the primary contributors to the risk assessment results).
  - e. A data quality assessment to demonstrate that enough data have been collected to support the decisions to be made.
2. Introduction, page 1, please note that all review work by consultants is conducted on behalf of the NDEP and should be referenced as such. Please revise as necessary.
3. Summary and Conclusions, page 6, TRX states that "Upon NDEP's review of these initial steps of evaluating the soil-to-groundwater leaching pathway, we recommend proceeding with additional evaluation using Site-specific data (e.g., development of Site-specific K<sub>d</sub> values; compiling empirical Site data relating soil quality to groundwater impacts) to refine the assessment of COPCs at the Site." Please revise to address the following comments:
  - a. It is unclear as to what Tronox intends here because NDEP's Guidance (2010) *Evaluation of Soil Leaching to Groundwater* specifies the use of site-specific soil data and chemical properties (e.g., K<sub>d</sub>) to develop leaching-based site-specific levels (LSSLs).
  - b. The comparison of soil and groundwater quality data to "refine the assessment of COPCs" is not a recognized procedure by the NDEP. Please remove this language.
4. Tables 1A through 2E, because DAFs used for the LSSL screening are chemical specific, please revise these Tables by adding a column for this parameter.
5. Table 2D, the electronic file included with this Deliverable contains Excel error (#VALUE) for Count, Detection Count, and Detection Frequency columns. Please correct this error for re-submittal.
6. Attachment 1, Response to Comment (RTC) 1, Table 2B of Attachment 3 contains no bold type as indicated in TRX's response to this comment so please clarify whether any adjustments were made for organic chemicals.
7. Attachment 1, RTC3, TRX states that "The samples exceeding the LSSL for chloroform that were previously identified in RZ-B were samples collected in the UMCf, which were excluded from the data set used to measure source lengths and compared with LSSLs in the revised memorandum." Please explain and justify why the samples from the UMCf were excluded."
8. Attachment 1, RTC4a, there was no Table 6 found in Attachment 3 of the NDEP's files. Please provide this Table in the Revised Deliverable.

9. Attachment 1, RTC 6d, NDEP provides the following comments:
  - a. Attachment 2, Tables 5A through 5D, sodium significantly exceeds background in RZ-A but is not carried forward and there is no discussion in the text to explain the rationale for this decision. Please resolve this issue.
  - b. TRX states that “A comprehensive evaluation of the fate and transport of detected chemicals with no established RBGCs would require significant effort and has not been included in this technical memorandum. The purpose and scope of such an evaluation will be discussed further with NDEP and the Nevada Environmental Response Trust, which is now responsible for management of the project.” Attachment 2, Table 6 has 20 chemicals with detections and no RBGCs that are not carried forward and there is no discussion in the text to explain the rationale for this decision. The NDEP cannot approve a risk-based evaluation such as the subject LSSL screening that does not consider all detected chemicals. Please resolve this issue.
10. Attachment 1, RTC 9, please refer to the previous NDEP Comment 8.
11. Attachment 2, page 2-17. Please refer to the previous NDEP Comment 8.
12. Attachment 3, Input Parameters for Calculation of Dilution Attenuation Factors; page 3-3, last paragraph on page, TRX states that “This suggests that any contaminants present in the deeper UMCf that pass beneath the barrier wall will eventually “daylight” into the alluvium and be captured downgradient at the Athens Well Field (AWF).” This hypothesis needs to be supported with site data; however, not within the context of the subject document.
13. Attachment 3, Figures 3-11 (Manganese in Soil) and 3-13 (Perchlorate in Soil), It appears from the particle path line that TRX assumes that source length starts at the southern boundary but stops at the Interceptor Well Field (IWF). Please explain the rationale for excluding the areas with DAF greater than 20 in the north east corner of the site.