



June 8, 2017

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: *Unit 4 and 5*
Buildings Investigation Second Mobilization

Dated: May 4, 2017

Dear Mr. Steinberg,

The NDEP has received and reviewed the Trust's above-identified Deliverable and finds that the document is acceptable with the following comments noted for the Administrative Record. NDEP wants to receive a written response how these comments will be addressed in third mobilization or final RI report before starting the fieldwork of third mobilization:

1. Monitoring well M-241 sampling results show significant difference of the chemical compositions from the chemical compositions of the shallow groundwater at upper gradient areas of Intercept Well Field (IWF), which indicates the disconnection between the groundwater of Well M-241 and the shallow groundwater. NDEP requires a resampling of groundwater of Well M-241 and other proposed wells in the third mobilization to verify these results from the second mobilization.
2. The report states that the distribution of perchlorate and chromium in the soil and groundwater is similar. NDEP wants to see more quantified and spatial correlations about the similarity.
3. The report presented different distribution of chloroform in soil and groundwater from the distribution of perchlorate and chromium. NDEP expects to see more information about the sources and the migration pathways for the chloroform found in the second mobilization.
4. The 30 minutes from the proposed low-flow pumping tests are likely too short to distress aquifer enough. The hydraulic properties derived from the proposed pumping tests may not produce representative hydraulic property values for the aquifer. NDEP requires that all hydraulic property values from the third mobilization are representative of the targeted aquifer.

5. The proposed cluster monitoring wells should be designed and installed to furnish a function for determination of horizontal and vertical hydraulic gradient and potential exchange between the shallow and deeper water bearing zones besides the proposed purposes in third mobilization.
6. The final report from third mobilization should have comprehensive analysis about horizontal and vertical extension and mass of perchlorate, chlorate, chromium, hexavalent chromium, TDS, nitrate and chloroform, correlations between these chemicals and sources and migration pathways of these chemicals. The mass calculation should include more details how the mass is calculated and the uncertainty associated with the calculated mass.
7. The potential for vapor intrusion and/or outdoor air exposure should be evaluated for chloroform given its widespread presence in soil and groundwater and its carcinogenicity via the inhalation exposure route. It is noted that bromoform and bromodichloromethane are also carcinogens via the inhalation exposure route. Any other detected VOCs (including the other THMs) should also be included in the evaluation. It is recommended that soil gas samples be collected as part of future investigations.
8. Please comment on the potential for VOC concentrations in soil in the upper 12 to 15 feet to be biased low due to the use of the hydro-vacuum to clear utilities, especially given the prevalence of sandy soils in this depth interval.
9. Please provide a discussion on the potential for VOC concentrations in groundwater to be biased low given the use of a bailer to retrieve samples from the temporary wells.
10. Additional data gaps include porosity, effective porosity, and total (or fraction) organic carbon should be included in the final report.
11. Please add an arrow to Figure 3 (Borehole Transect Locations) that shows the groundwater flow direction.
12. Please include cross-sections and consider adding soil type boundaries (in addition to the water table and formation boundaries) on the graphics in Appendix E.
13. The Appendix E figures show that the distribution in soil and groundwater of the two constituents considered (i.e., perchlorate, hexavalent chromium) are similar suggesting a common source/carrier. It is noted that the four common trihalomethanes (“THMs”) - chloroform, bromoform, bromodichloromethane, and dibromochloromethane - were detected in both soil and groundwater. What are the potential on- and/or off-site source features/operations of the chloroform in soil and groundwater? Comment on the potential for the chloroform to be present: 1) now or in the past as a non-aqueous phase liquid and 2) as the result of intentional or unintentional chlorination of wastewater.

Please contact the undersigned with any questions at wdong@ndep.nv.gov or 702-486-2850 x252.

Sincerely,



Weiquan Dong, P.E.
Bureau of Industrial Site Cleanup
NDEP-Las Vegas City Office

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EC:

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