

From: Deni Chambers**Date:** March 19, 2010**To:** Shannon Harbour, P.E.
Nevada Division of Environmental Protection**RE:** Response to NDEP Comments Dated March 17, 2010 on *Pre-Confirmation Sampling Work Plan, Remediation Zones, RZ-A through RZ-E, Phase B Investigation, Tronox LLC, Henderson, Nevada*

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1. General comment, at an NDEP-TRX meeting on February 22, 2010, NDEP asked what data TRX is planning on using for the post-remediation risk assessment for the calculation of cumulative risk if excavation removes some or all of the broad suite analysis data at a sampling point. (i.e. would current surface sample concentrations be used for any chemicals that didn't exceed BCLs or would the current 10 feet below ground surface (fbgs) samples be used?) To date, this issue has not been resolved and will affect the determination on whether the data collected as proposed in this Deliverable is adequate for post-remediation risk assessment. TRX should contact NDEP by **March 19, 2010** to schedule a meeting and establish the deadline for the submittal of a technical memo addressing this issue.
 - Response: Based on the NDEP conference call on March 19, 2010, Tronox will respond to this comment via a technical memorandum to be provided on March 22, 2010.

 2. Asbestos Sampling section, page 5, please clarify whether the six to eight inches below ground surface (bgs) sample will be collected at the same time as the zero to two-inch bgs and four to six-inches bgs samples or collected as necessary in a separate sampling event after the receipt of the analytical results from the other two sampling depths.
 - Response: Eight- to 10-inch bgs samples (rather than 6- to 8- inches bgs samples) will be collected as necessary in a separate sampling event after receipt of the analytical results from the shallower depths. A statement has been added to the Work Plan to clarify the timing of the potential 8- to 10-inch bgs asbestos samples.

 3. Analytical Program, NDEP has the following comments:
 - a. Pages 6-7, revise the bulleted text as necessary to address the comments in this letter.
 - Response: Bulleted text has been revised to address the comments.

 - b. Page 8, Item 3, the column headings in Table 1 should be modified as indicated by the text in this paragraph (i.e. the column headings should be grouped as SVOCs including

PAHs (Method 8270C) and OCPs (Method 8081A) as applicable since full suites for these analyses will be used and reported.

➤ Response: Column headings have been modified as requested.

c. Page 8, Items 2 and 3, TRX should clarify whether 8270B or 8270C or both will be used for the fixed lab analyses.

➤ Response: The text of Item 3 has been corrected to read “8270C”.

d. Perchlorate was not discussed in this section. Please revise as necessary.

➤ Response: A discussion relative to perchlorate sampling has been added to the section.

4. Table 1, NDEP has the following comments:

a. Please break this Table into four separate Tables for each of the Remediation Zone Areas.

➤ Response: Four separate tables have been generated (Tables 2 through 5 for RZ-B through RZ-E, as requested. Unnecessary blank columns within each of the individual remediation zone tables have been removed and column widths expanded for ease of reference. Table 1 has been retained to represent the entire sampling program.

b. TRX should indicate the cutline depth in the Rationale column for borings where the cutlines have already been established.

➤ Response: Cutline depths have been added to the “Rationale” column, as requested.

c. Asbestos sampling, there is no need to separate the chrysotile sampling from the amphibole sampling as the analytical method reports both. Please revise the sampling designation to include both types of fibers so that it is clear that both types of fibers will be analyzed and reported (Please note that TRX could combine the two asbestos columns for simplicity).

➤ Response: The two columns have been combined and both types of fibers are listed in the heading.

d. The following borings should indicate analysis of perchlorate at each depth through the soil column as stated in the Rationale (e.g. profile perchlorate concentration through the top ten feet of the soil column for potential soil flushing): RSAR7, SA65, SSAM4-02, SSAN4-01, SSAM5-02, RSAM5, and SA129 (soil profiling should be added to Rationale based on perchlorate concentrations).

➤ Response: The sampling program has been revised to include sampling and analysis for perchlorate at 2-foot depth intervals for locations where perchlorate is reported above the BCL at a depth of 10 fgbs. The sampling is being conducted to establish a profile for potential perchlorate flushing. Sampling and analysis for



perchlorate at 2-foot depth intervals is also included at horizontal sampling locations associated with these locations. This modification covers all of the locations listed in 4.d above, as well as SA104, SSAM6-01, SA106, SSAO5-02, SA72, SSAM5-01, and SSAL5-05. The "Rationale" cells have been updated to reflect these modifications.

- e. TRX should consider sampling at one foot intervals starting at 1 fbgs in the following borings because the cutline established by other contaminants (if any) is at 1 fbgs: SA63, SA43, SA42, SA40, SA51, RSAP6, SA139, RSAL3, RSAK8, SA165, SA17, and SA131.
 - Response: The plan has been revised to include sampling starting at 1 fbgs in the borings listed above as requested. However, if background arsenic concentrations are approved prior to sampling and/or analysis being conducted, the planned sampling and/or analysis will be revised as appropriate to eliminate sampling for arsenic at locations where it has been encountered below approved background levels.

- f. TRX should consider sampling at one foot intervals starting at 2 fbgs in the following borings because the cutline established by other contaminants is 1.5 fbgs or 2 fbgs: SA41, RSAJ2, and SA107.
 - Response: The plan has been revised to include sampling starting at 2 fbgs in the borings listed above, as requested.

- g. TRX needs to include confirmation sampling for asbestos in the following borings as confirmation samples must be collected for each analyte that is detected above the applicable comparison levels. (Please note that the code for asbestos (3) should be added in the column for Chemical Group Code Driving Additional Sampling and a sampling depth of 4-6" should be added.): SA102, SA41, SA39, SA130, RSAP6, RSAL2, RSAK5, RSAJ5, RSAJ6, and SA86.
 - Response: In the February 22, 2010 meeting it was agreed and documented in the notes (Item 13) that asbestos only polygons would be sampled and that polygons where asbestos is co-located with other contaminants would not be sampled beyond the surface. At all of the locations listed above, asbestos is co-located with other constituents which will result in the removal of the surficial soil (to a minimum depth of 1 foot).

- h. SA169, in the column for Chemical Group Code Driving Additional Sampling add the code for asbestos (3) and add a sampling depth of 4-6 feet for the asbestos sampling depth.
 - Response: As noted in 4.g. above, asbestos that is co-located with other contaminants that will result in the removal of the surficial asbestos will not be sampled. The "X" has been removed from the "Asbestos" column.

- i. SA203, the cutline at this sampling point should be set at 10 fbgs because of elevated arsenic concentration at this depth.



- Response: Analysis for arsenic at depths of 2, 4, 6, and 8 fbgs are proposed at location SA203 to establish profiling for potential risk calculations.
- j. SA04, arsenic is greater than background in both the surface and 10 fbgs samples. The cutline at this sampling point should be established at 10 fbgs.
- Response: Analysis for arsenic at depths of 2, 4, 6, and 8 fbgs are proposed at location SA04 to establish profiling for potential risk calculations.
- k. RSAN6, TRX should re-evaluate the need for sampling of arsenic at this sampling point. The arsenic concentration at this location may be too elevated to pass a background comparison and would therefore have to be excavated.
- Response: The arsenic concentration has potential to be below background. Sampling for arsenic at this location has been added to the sampling program for profiling per NDEP's request, but will be eliminated if found to be less than approved background concentration.
- l. SSAM7-03, TRX should add to the Rationale that the results of this boring could be used for refinement of the remediation polygon for SA49, which contains elevated HCB and perchlorate. As such, perchlorate should also be added for sampling and analysis.
- Response: Perchlorate was added to sampling schedule and the "Rationale" cell was modified as requested.
- m. SSAM7-04, in the column for Chemical Group Code Driving Additional Sampling, please add the code for HCB (2).
- Response: The HCB code (2) has been added to the "Chemical Group Code Driving Additional Sampling" column.
- n. SA137, TRX should add the collection of a sample at 10 fbgs as no 10 fbgs sample was initially collected.
- Response: A 10-foot sample has been added to location SA137.
- o. SSAL2-01, TRX should add OCP analysis to this boring to constrain RSAL2 polygon. If TRX plans on using the railroad tracks as a practical excavation constraint for RSAL2, then the samples as proposed is sufficient.
- Response: Tronox plans on using the railroad tracks as a practical excavation constraint for RSAL2. No change was made.
- p. SSAJ8-01, TRX should consider adding arsenic to the proposed sampling for this boring.
- Response: SSAK8-02 should be sufficient to bound polygon RSAK7 to the east. No change was made.
- q. SA129, TRX should add OCP analysis to this boring since 4,4-DDE and 4,4-DDT concentrations were still elevated above the BCL at 2 fbgs.



➤ Response: OCPs 4,4-DDE and 4,4-DDT are both below the BCL at 1.5 to 2.0 fbgs at SA129. No change was made.

r. SA86, TRX states in the Rationale that arsenic appears to be within background but has proposed arsenic sampling. Please revise as needed.

➤ Response: Sampling for arsenic at SA86 has been removed.

5. Figures, NDEP has the following comments:

a. Please clarify the status of SA205 as it is unclear whether data for this sample has been received.

➤ Response: SA205 has a green symbol indicating no BCL exceedances in the top 10 feet. It is partially covered by boring SA04, so this is difficult to discern. A note has been added to Figure 1-2 to help clarify the status of SA205.

b. TRX should remove any polygons from the Figures that are listed as being within background on Table 1.

➤ Response: Polygons RSAQ5, SA33, and SA198 have been removed from the Figures.

c. Figure 1-3, exceedance data for boring SA139 should be added to this Figure.

➤ Response: Exceedance data for boring SA139 has been added to Figure 1-3.

