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environmental management, inc.

From: Deni Chambers, CEG, CHG
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Date: May 13, 2010

To: Shannon Harbour
Nevada Division of Environmental Protection (NDEP)

RE: April 1 and April 29, 2010, NDEP Responses to *Capture Zone Evaluation Work Plan, Tronox LLC, Henderson, Nevada* dated: March 25, 2010

This memo provides the final Response to Comments (RTC) for the *Capture Zone Evaluation Work Plan, Tronox LLC, Henderson, Nevada* (Northgate, March 25, 2010). In an April 1, 2010 letter, NDEP approved this document, but stated that an errata should be submitted as necessary to address the comments provided in that letter and in further discussion during an April 16 meeting and follow-up April 29 email. The Work Plan errata and other changes are shown in the included RLSO text pages, the new Figure 5, and the revised schedule (formerly Figure 5, now Figure 6). A complete copy of the revised Work Plan incorporating these changes is also included for your convenience.

1. *Section 2.2, pages 6 and 7, last bullet on Page 6, NDEP notes that all of the Upper Muddy Creek formation (UMCf) wells are downgradient of the barrier wall. Please provide rationale for the selection of these locations. TRX should also provide rationale why additional investigation is not being conducted up-gradient of the barrier wall. NDEP believes that horizontal delineation of the UMCf plume should additionally be investigated up-gradient of the barrier wall.*

   Response: As discussed during the April 16, 2010, meeting between Tronox and NDEP, the proposed well locations and screened depths were selected to provide definition of the perchlorate distribution in the UMCf from the western to eastern Tronox boundaries at the IWF. In response to the April 29 email from NDEP to Tronox that was sent in follow-up to the April 16 meeting, Tronox now proposes eight additional wells to better define the horizontal and vertical distribution of perchlorate in the UMCf upgradient of the barrier wall, and especially along the eastern Site boundary. This additional scope is described in the attached Section 2.2 errata sheet, and new well locations are shown on the new Figure 5.

2. *Figure 5, Proposed Schedule, please add the following*:

   a. *Task start and stop dates*

   b. *Monthly Status Memoranda*

   c. *Schedule updates (the Schedule should be updated and submitted with the respective Monthly Status Memorandum).*

   Response: An updated and revised schedule (formerly Figure 5, now Figure 6) that includes the requested information is attached.

3. *Appendix A, response-to-comment (RTC), NDEP provides the following comments:*

   a. *RTC3.b.ii, TRX should reference the third bullet of Section 2.2 instead of the fourth*.

      Response: This error has been corrected in the attached Appendix A Errata sheet and revised Work Plan.

   b. RTC 3.b.iii, NDEP disagrees that the revised proposal is adequate to address the eastern control of the perchlorate plume. It is not clear that this would address a capture zone delineated to 10 mg/l or 1 mg/l, which is a concern given that the provisional NDEP action level is 18 µg/l.

      Response: Tronox acknowledges that the eastern side of the perchlorate plume may not be fully captured by the IWF system. The additional wells described under the response to Comment #1 above will provide water quality and water level data to better evaluate perchlorate capture along the eastern Tronox boundary.

   c. RTC 4.a.i, NDEP agrees with TRX's proposal to discuss this matter, however, it is not clear that dam seepage evaluations are an appropriate metric given the salinity of the water at the TRX site.

      Response: Based on discussions between Tronox and NDEP at the April 16 meeting, the Willowstick investigation has been removed from the work scope and additional barrier wall evaluation using new pumping wells installed immediately downgradient of the barrier wall has been added. This work scope change is described in the attached Section 2.2 Errata sheet and revised Work Plan.

   d. RTC 4.c, NDEP disagrees with TRX's proposal regarding well construction and notes that this is contrary to every other instance in the Deliverable. In all other cases TRX proposes to construct wells that are readily convertible to extraction wells. It is not clear why TRX has taken a different position in this RTC. NDEP is concerned that TRX's proposal will waste time and resources.

      Response: As discussed during the April 16, 2010, meeting, Tronox proposes well installations that allow for ready conversion to groundwater extraction in all cases where this future use is considered possible. In the case of these UMCf wells, however, the proposed 10-foot screen lengths are designed to provide needed information on the vertical perchlorate distribution and hydraulic head variability, but the short screen lengths make the wells unsuitable for groundwater extraction from the low permeability UMCf.

   e. *RTC 6, NDEP acknowledges that a groundwater modeling work plan will be submitted to NDEP* ***by April 30, 2010.***

      Response: The groundwater modeling work plan was submitted on April 30, as scheduled.