ndep
NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

November 4, 2010

Matt Paque
Tronox LLC
PO BOX 268859
Oklahoma City, OK 73134

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Revised Engineering Evaluation of Slope Stability, WC and GW-11 Pond Embankments, Phase B Soil Remediation of RZ-D, Tronox LLC, Henderson, Nevada
Dated:

Dear Mr. Paque,

The NDEP has received and reviewed TRX's above-identified Deliverable and provides comments in Attachment A for additional information to complete the review of this Deliverable. TRX should provide the requested information and data **by November 9, 2010.** TRX should submit an annotated response-to-comments letter with any errata necessary to address NDEP's conditions/comments.

Please contact the undersigned with any questions at 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

EC: Jim Najima, Bureau of Corrective Actions, NDEP
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Mike Skromyda, Tronox LLC
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Keith Bailey, Environmental Answers LLC
Susan Crowley, Tronox LLC (Contractor)
Deni Chambers, Northgate Environmental

Brian Rakvica, McGinley and Associates
Barry Conaty, Holland & Hart LLP
Brenda Pohlmann, City of Henderson
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9
Ebrahim Juma, Planning Manager, Air Quality and Environmental Management
Joe McGinley, McGinley & Associates
Ranajit Sahu, BRC
Rick Kellogg, BRC
Mark Paris, Landwell
Craig Wilkinson, TIMET
Kirk Stowers, Broadbent & Associates
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George Crouse, Syngenta Crop Protection, Inc.
Nick Pogoncheff, PES Environmental
Lee Erickson, Stauffer Management Company
Michael Bellotti, Olin Corporation
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Paul Sundberg, Montrose Chemical Corporation
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Jeff Gibson, AMPAC
Larry Cummings, AMPAC

CC: Ebrahim Juma, Planning Manager, Air Quality and Environmental Management
Susan Crowley, C/O Tronox LLC, PO Box 55, Henderson, NV 89009
Lee Erickson, Stauffer Management Company

Attachment A

1. Pages 1-2, Historical Geotechnical Data and Field Exploration, NDEP provides the following comments:
   a. Please provide a discussion on the method used for determining the soil parameters within the geometry of the profiles analyzed and how it relates to the CPT results.
   b. Please provide a discussion on the potential effects of the pore pressure results found in the CPT data and how they would affect slope stability.
   c. Page 2, according to the slope stability memorandum Mr. Umesh Bachu is the cone penetrometer testing (CPT) consultant that was retained to perform the testing and interpret the testing results. According to Mr. Bachu's recommendations, the maximum strength for granular soils should be limited to a phi angle of 35-degrees. Please discuss and provide justification for using a phi angle of 38-degrees in the submitted analyses.
2. Pages 2-4, Stability Analysis, NDEP provides the following comments:
   a. Please provide a discussion on the modeled geometry used in the cross-sections for the slope stability and verify that this is the as-built condition of the pond embankments and surrounding area.
   b. Page 2, TRX states that all of the cases were analyzed using Bishop's Modified method and several of the exact cases were also analyzed using Spencer's method. Please provide the results and parameters of all of the methods tested. Additionally, please provide evaluation of both circular and block failures surfaces.
   c. Page 3, NDEP provides the following comments:
      i. a pseudo-static coefficient of 0.15g is used to account for seismic loading in several of the eight cases analyzed. Please provide a discussion on the source of this value and how it was implemented into the slope stability analysis. Please also include the probability of exceedance for this value.
      ii. Based on the conclusion it is assumed that the maximum depth of excavation would be to 14-feet. Please verify this assumption.