



NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**

STATE OF NEVADA
Department of Conservation & Natural Resources

Brian Sandoval, Governor
Bradley Crowell, Director
Greg Lovato, Administrator

April 27, 2018

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: *Data Validation
Summary Report and EDD January through March and May 2015 Groundwater
Remedial Investigation Sampling (2016 Q1 Supplemental, 2016 Q2 Supplemental,
Weir Dewatered Groundwater Characterization, and Seep Well Field Sampling)*

Dated: December 28, 2016

Dear Mr. Steinberg,

The NDEP has received and reviewed the Trust's above-identified Deliverable and provides comments in Attachment A. A revised Deliverable should be submitted **by 06/27/2018** 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 wdong@ndep.nv.gov or 702-486-2850 x252.

Sincerely,

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

WD:cp

EC:

James Dotchin, NDEP BISC Las Vegas
Carlton Parker, NDEP BISC Las Vegas
Allan Delorme, Ramboll Environ
Alison Fong, U.S. Environmental Protection Agency, Region 9
Andrew Barnes, Geosyntec
Andrew Steinberg, Nevada Environmental Response Trust
Anna Springsteen, Neptune & Company Inc.
Betty Kuo Brinton, MWDH2O

Brenda Pohlmann, City of Henderson
Brian Waggle, Hargis + Associates
Carol Nagai, MWDH2O
Chinny Esakkiperumal, Olin Corporation
Chris Ritchie, Ramboll Environ
Chuck Elmendorf, Stauffer Management Company, LLC
Dan Pastor, P.E. TetraTech
Dave Share, Olin
Dave Johnson, LVVWD
David Parker, Central Arizona Water Conservation District
Derek Amidon, Tetrattech
Ebrahim Juma, Clean Water Team
Ed Modiano, de maximis, inc.
Eric Fordham, Geopentech
Gary Carter, Endeavour
George Crouse, Syngenta Crop Protection, Inc.
Harry Van Den Berg, AECOM
Jay Steinberg, Nevada Environmental Response Trust
Jeff Gibson, Endeavour
Jill Teraoka, MWDH2O
Joanne Otani
Joe Kelly, Montrose Chemical Corporation of CA
Joe Leedy, Clean Water Team
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Kelly McIntosh, GEI Consultants
Kevin Fisher, LV Valley Water District
Kirk Stowers, Broadbent & Associates
Kirsten Lockhart, Neptune & Company Inc.
Kim Kuwabara, Ramboll Environ
Kurt Fehling, The Fehling Group
Kyle Gadley, Geosyntec
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Lee Farris, BRC
Marcia Scully, Metropolitan Water District of Southern California
Maria Lopez, Water District of Southern California
Mark Duffy, U.S. Environmental Protection Agency, Region 9
Mark Paris, Landwell
Michael J. Bogle, Womble Carlyle Sandridge & Rice, LLP
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Micheline Fairbank, AG Office
Mickey Chaudhuri, Metropolitan Water District of Southern California
Nicholas Pogoncheff, PES Environmental, Inc.
Orestes Morfin, CAP
Paul Black, Neptune and Company, Inc.
Paul Hackenberry, Hackenberry Associates, LLC
Patti Meeks, Neptune & Company Inc.
Peggy Roefer, CRC
Ranajit Sahu, BRC
Richard Pfarrer, TIMET
Rick Kellogg, BRC
Scott Bryan, Central Arizona Project
Steve Clough, Nevada Environmental Response Trust
Steven Anderson, LVVWD
Tanya O'Neill, Foley & Lardner L
Todd Tietjen, SNWA

Attachment A

DVSR Review:

1. **Section 1.0, Introduction:** The text notes there are 862 environmental and quality control samples for the combined reports; however, the *Samples* table has 928 samples and Table 1 has 1205 (less the laboratory MS, MSD and DUP samples). Please confirm the number of samples and correct the DVSR or EDD/Table 1 as/if necessary.
2. **Section 1.0, Introduction, method list:** DOC is not among the analytes listed in the *parameter* field of the EDD. TOC is the reported parameter for SM5310C, the analysis listed for DOC. Please confirm the analyte(s) and method(s) for DOC and TOC.
3. **Table II:** This table indicates surrogates are assessed for metals. As neither 200.7 or 200.8 utilize surrogates, please revise this text.
4. **Table III:** Stage 4 validation criterion of 10% was not met for five 2016 Q1 Supplemental analyses (dissolved metals, anions, total phosphorous, alkalinity, DOC) and one analysis for SWF (dissolved metals). This is noted in Table III, but please include this information, and the reason the criterion was not met, in the paragraph discussing validation levels.
5. **Section 1.0, Introduction, next to last paragraph on page 7:** In addition to defining the reason codes, the text indicates Table IV also identifies possible limitations to data use. The Table title does not indicate this and table appears only to provide a definition of the reason code. Please clarify the sentence or expand Table IV to include potential data use limitations.
6. **Section 2.0:** The text indicates there were 4,709 results for VOCs by 8260B, but the EDD has 4908 results, or 4,659 results without the surrogates. Please check the counts and correct as necessary.
7. **Section 2.1.1, Instrument Calibration:** The text states 4 results were qualified for dichlorodifluoromethane and chloromethane. The EDD has 15 qualified results for these two analytes and a total of 179 results qualified "UJ" with reason code "c." Please check the counts and qualifications and correct the text/EDD as necessary. Update Table V as necessary, as a quick check indicates it has 9 results qualified for calibration outliers.
8. **Section 2.1.6 and 3.1.6, Field duplicate samples:** Rather than relying strictly on the RPD, regardless of the analyte concentration, we suggest using criteria similar to the inorganic criteria for evaluating field duplicate pairs. If $5\times$ the PQL seems too large for the \pm PQL criterion, the \pm PQL criterion could be applied only when one or both results are less than the PQL. If changed, results in Section 2.1.6 and 3.1.6 would not require qualification and in Section 4.1.6, aluminum in pair BP-08A, chromium and lead in pair PC-91, iron and zinc in pair PC-120 would not require qualification. If changes are made, please update the text and Table V as necessary.
9. **Section 2.2.2, Blanks:** The NFG promulgates the $2\times$ rule only for methylene chloride, acetone and 2-butanone (common laboratory contaminants). The professional judgment invoked to utilize the $2\times$ rule for other analytes should be discussed in the text. If the $2\times$ rule was only applied to the common laboratory contaminants, then please clarify this in the text.

10. **Section 3.1.1, Instrument Calibration:** The text notes five 1,2,3-trichloropropane results were qualified “J+” for an ICV %D outlier; however, the EDD has 5 results qualified “J” and 32 results qualified “UJ.” Please check the counts and qualifications and correct the text/EDD as necessary. A quick check of Table V revealed 4 results qualified “J+.” This table may also need to be updated.
11. **Section 4.1.1 Instrument calibration:** The text notes that some results were qualified “J+” for CRI recovery outliers; however, no results were qualified “J+” in the EDD or Table V. Please either correct the qualifications or the text and update Table V as necessary, as no bias was added to the qualifications in this table.
12. **Section 4.1.2 MS/MSD samples:** The text notes that four potassium results were qualified “J-” for MS/MSD recovery outliers; however, in the EDD, the potassium results were qualified “J” with no bias. Please either correct the qualification or the text. (Bias was present in the qualifications in Table V.)
13. **Section 4.2.1, Holding times:** The mercury holding time is not noted in this section. Please confirm the mercury analyses were performed within the 28-day holding time and add the mercury holding time to the text in this section.
14. **Section 4.2.2, Blanks:** The description of how samples are qualified for blanks detects does not address cases where the samples result is less than the PQL and the blank is above the PQL. Please add a sentence describing this situation.
15. **5.0, Wet chemistry sample counts and methods:** The following sample counts noted in the text do not match the EDD (result_type field filtered to “TG”). Please check the samples counts and methods, and correct the text or EDD as required. Due to its size, Table 1 was not cross-checked.
 - a. Hexavalent chromium – DVSR = 352; EDD = 354
 - b. Anions – DVSR = 98; EDD = 121
 - c. Perchlorate – DVSR = 841; EDD = 842
 - d. Dissolved organic carbon – DVSR = 40, EDD = 0
 - e. Nitrate/nitrite by calculation – The DVSR lists two samples for nitrate/nitrite as determined by calculation; however, these samples are listed in the EDD as Method 300.0 instead of Calculation. Similarly, the method for total inorganic nitrogen (TIN) is listed in the EDD as NTOTAL, instead of Calculation, as noted in the DVSR.
16. **Section 5.1.1, Instrument calibration:** Nitrate and orthophosphate results for samples PC-121 and PC-133 were qualified in the EDD for calibration outliers but were not noted in the text or identified in Table V. Please check the qualifications and update the text, EDD and/or Table V as necessary.
17. **Section 5.1.3, MS/MSD samples:** The text indicates nitrate as nitrogen and nitrate were both qualified for MS/MSD outliers; however, only nitrate was qualified in the EDD. Please correct the text or EDD as necessary. Also, please determine if any of the qualified results were used to calculate TIN or nitrate/nitrite. If so, these results should also be qualified. Please update Table V as necessary.
18. **5.1.7, Sample result verification:** The following sample counts noted in the text as validated at Stage 4 do not match the EDD (result_type field filtered to “TG”). Please check

the samples counts and methods, and correct the text or EDD as required. If necessary, please also update Table III.

- a. Hexavalent chromium – DVSR = 44; EDD = 17
- b. Anions – DVSR = 16; EDD = 15
- c. Perchlorate – DVSR = 94; EDD = 93
- d. Specific conductance – DVSR = 1; EDD = 0
- e. Phenol – DVSR = 1; EDD = 0
- f. TDS – DVSR = 98; EDD = 89
- g. Field pH – DVSR = 78; EDD = 77
- h. TOC – DVSR = 1; EDD = 5
- i. Dissolved organic carbon – DVSR = 5, EDD = 0

- 19. **Section 5.2.1, Holding times:** The text indicates 58 samples were qualified for holding times; however, only 28 are qualified as such in the EDD. Please check the sample counts and correct the text, Table V and/or EDD as necessary. Also, please check Table V, as a quick count indicated 55 results were qualified there. The text notes nitrate and nitrate as nitrogen were both qualified, but only nitrate was qualified in the EDD (this may be related to comment #21). And, as noted in #17 above, please determine if any of the qualified results were used to calculate TIN or nitrate/nitrite. If so, these results should also be qualified (and Table V updated).
- 20. **Section 6.0, Variances in analytical performance:** Please add a description of the method variances mentioned in this section to the text, particularly in reference to how they may affect comparability.
- 21. **Nitrate in EDD:** For clarification, please update the *parameter* field of the analyte reported as “nitrate” to include the basis for how it was reported (e.g. as N or as NO₃).
- 22. **Nondetects and detects less than the PQL:** In the EDD there are 20 results qualified as “U” by the laboratory but not qualified U with an “nd” reason code. There are also 22 results qualified as detected below the PQL by the laboratory but not qualified “J” with an “sp” reason code. Please check these qualifications and correct as necessary.

EDD Review

- 1. There are three records in the results table for dichloromethane (field_sample_ids are M-145-20160210, M-148A-20160210, and M-189-20160210) where the detect flags and the final_validation_qualifier are not consistent. These records have a final_validation_qualifier of “U” with a final_validation_reason_code of “bf”, which indicates qualification due to field blank contamination. The detect_flag_fod and detect_flag_ra should be assigned based on the final_validation_qualifier. In this case, if the results are not detected, as indicated by the “U” final_validation_qualifier, then both detect flag fields should also be “U”.