

# TECHNICAL MEMORANDUM

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**To:** Nevada Environmental Response Trust

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**Cc:** Nevada Division of Environmental Protection  
United States Environmental Protection Agency

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**From:** Arul Ayyaswami and Dan Pastor

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**Date:** January 26, 2018

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**Subject:** Unit 4 Source Area Bioremediation Treatability Study Progress Update

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At the direction of the Nevada Environmental Response Trust (NERT or Trust), Tetra Tech, Inc. (Tetra Tech) has prepared this memorandum that summarizes Tetra Tech's progress made through December 2017 toward successfully implementing the Unit 4 Source Area In-Situ Bioremediation Treatability Study. Bench-scale testing work is being conducted as outlined in the Unit 4 Source Area In-Situ Bioremediation Treatability Study Bench-Scale Work Plan (Work Plan).

## Task Progress Update: December 2017

### Task M21 – Unit 4 Source Area In-situ Bioremediation Treatability Study

- Task Leader – Arul Ayyaswami
- Current Status
  - The University of Nevada, Las Vegas (UNLV) started microcosm testing on November 11, 2017 with a combination of soil and groundwater collected from boring locations M-251 (located within the Unit 4 Building basement) and M-253 (located to the east of the Unit 4 Building basement). Microcosm testing and evaluation of results are ongoing.
  - The Unit 4 Source Area In-Situ Bioremediation Treatability Study Work Plan was submitted on December 13, 2017 and comments were received on December 29, 2017.
- Schedule and Progress Updates
  - UNLV microcosm testing and evaluation will continue in January 2018.
  - The revised Unit 4 Source Area In-Situ Bioremediation Treatability Study Work Plan is under development and will be submitted along with a response to comments letter by February 5, 2018.
- Health and Safety
  - There have been no health and safety incidents related to Task M21 during December.

## CERTIFICATION

### Unit 4 Source Area Bioremediation Treatability Study Progress Update

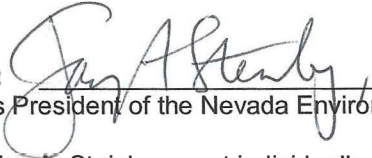
#### Nevada Environmental Response Trust Site (Former Tronox LLC Site) Henderson, Nevada

#### Nevada Environmental Response Trust (NERT) Representative Certification

I certify that this document and all attachments submitted to the Division were prepared at the request of, or under the direction or supervision of NERT. Based on my own involvement and/or my inquiry of the person or persons who manage the systems(s) or those directly responsible for gathering the information or preparing the document, or the immediate supervisor of such person(s), the information submitted and provided herein is, to the best of my knowledge and belief, true, accurate, and complete in all material respects.

Office of the Nevada Environmental Response Trust

Le Petomane XXVII, not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

**Signature:**  *not individually, but solely as President*  
not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

**Name:** Jay A. Steinberg, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

**Title:** Solely as President and not individually

**Company:** Le Petomane XXVII, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

**Date:** 1/24/18

## CERTIFICATION

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I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been prepared in a manner consistent with the current standards of the profession, and to the best of my knowledge, comply with all applicable federal, state, and local statutes, regulations, and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

**Description of Services Provided:** Prepared Unit 4 Source Area Bioremediation Treatability Study Progress Update.



January 26, 2018

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**Kyle Hansen, CEM**  
Field Operations Manager/Geologist  
Tetra Tech, Inc.

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Date

Nevada CEM Certificate Number: 2167  
Nevada CEM Expiration Date: September 18, 2018