

TECHNICAL MEMORANDUM

To: Nevada Environmental Response Trust

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

From: Arul Ayyaswami and Dan Pastor, Tetra Tech, Inc.

Date: November 27, 2017

Subject: In-Situ Chromium Treatability Study Monthly Progress Update

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 October 2017 toward successfully implementing the In-Situ Chromium Treatability Study as outlined in the In-Situ Chromium Treatability Study Work Plan (Work Plan).

Task Progress Update: October 2017

Task M12 – In-Situ Chromium Treatability Study

- Task Leader – Arul Ayyaswami
- Current Status
 - The eighth and final performance groundwater monitoring event for the biological reduction test portion of the treatability test was performed from October 3 through October 4, 2017. Evaluation of the laboratory results is ongoing. Preliminary analysis indicates that:
 - Hexavalent chromium concentrations in groundwater within the Quaternary Alluvium (Qal) have been reduced by up to 99 percent in four downgradient shallow monitoring wells (CTMW-01S, CTMW-02S, CTMW-04S, and CTMW-06S);
 - Perchlorate degradation is occurring in four downgradient Qal shallow monitoring wells (CTMW-01S, CTMW-02S, CTMW-04S, and CTMW-06S); and
 - Hexavalent chromium reduction is occurring in two downgradient Upper Muddy Creek Formation deep monitoring wells (CTMW-01D and CTMW-02D).
 - The second and final performance monitoring event for the chemical reduction test portion of the treatability study was performed from October 4 through October 6, 2017.

- Aquifer testing, consisting of both slug testing and specific conductivity testing, was conducted in both the biological reduction study area and the chemical reduction study area. The results of this testing will be summarized in the In-Situ Chromium Treatability Study Report.
- CTMW-07D was purged and sampled via low flow method on October 9, 2017. CTMW-07S did not contain sufficient water to be sampled. This work was completed as part of Modification No. 7 to the scope of work for the Remedial Investigation Phase 2 currently in progress. The scope of work and details regarding the well installations were proposed in a Technical Memorandum dated July 26, 2017. The data collected as part of this sampling event will be included as part of the Remedial Investigation Phase 2 results and will not be included in the In-Situ Chromium Treatability Study Report.
- Schedule and Progress Updates
 - Tetra Tech has started preparing the In-Situ Chromium Treatability Study Report, which scheduled to be submitted to NDEP in January 2018.
- Health and Safety
 - There have been no health and safety incidents related to Task M12 during September.

CERTIFICATION

In-Situ Chromium Treatability Study Monthly 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 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: _____

CERTIFICATION

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: In-Situ Chromium Treatability Study Monthly Progress Update



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

November 27, 2017

Date

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