

TECHNICAL MEMORANDUM

To: Nevada Environmental Response Trust

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

From: Arul Ayyaswami and Dan Pastor

Date: December 15, 2017

Subject: Vacuum Enhanced Recovery 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 November 2017 toward successfully implementing the Vacuum Enhanced Recovery (VER) Treatability Study as outlined in the VER Treatability Study Work Plan (Work Plan).

Task Progress Update: November 2017

Task M16 – Vacuum Enhanced Recovery Treatability Study

- Task Leader – Arul Ayyaswami
- Current Status
 - Two deep monitoring wells (VMW-01D and VMW-02D), screened from approximately 90-110 feet below ground surface (bgs), two intermediate monitoring wells (VMW-01I and VMW-02I), screened from approximately 55-70 feet bgs, one deep extraction well (VER-01D), screened from approximately 90-110 feet bgs, and one intermediate extraction well (VER-01I), screened from approximately 55-70 feet bgs, were installed in the VER Treatability Study work area in October 2017.
 - The highest perchlorate concentrations in soil were encountered between 25 and 60 feet bgs with a maximum concentration of 830 milligrams per kilogram (mg/kg) in boring location VMW-01D at a depth of 50 feet bgs. Perchlorate concentrations decreased to less than 10 mg/kg at depths greater than 80 feet bgs.
 - Well development, surveying, and baseline groundwater monitoring was conducted at the four monitoring wells and two extraction wells in November 2017. Perchlorate was detected in groundwater collected from the two extraction wells at concentrations of 300,000 micrograms per liter (µg/L) (VER-01I) and 53,000 µg/L (VER-01D).

- Schedule and Progress Updates
 - Procurement of VER system equipment is ongoing. Installation of the VER system and associated piping is scheduled to begin in December 2017.
 - Pressure transducers will be installed within the newly installed monitoring wells in December 2017 to evaluate variations in groundwater elevations prior to performing the VER testing.
 - The VER testing is scheduled to be performed in January 2018.
- Health and Safety
 - There have been no health and safety incidents related to Task M16 through November 2017.

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: Prepared VER Treatability Study Monthly Progress Update.



December 15, 2017

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

Date

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