

# MEMO

Date **December 21, 2018**  
To **Nevada Environmental Response Trust**  
From **John Pekala, Scott Warner, and Chris Ritchie**  
Copy to **Nevada Division of Environmental Protection  
United States Environmental Protection Agency**  
Subject **In-Situ Bioelectrochemical Laboratory-Scale  
Treatability Study Monthly Progress Report**

## **TASK PROGRESS UPDATE: OCTOBER 2018**

At the direction of the Nevada Environmental Response Trust (NERT or Trust), Ramboll US Corporation (Ramboll) has prepared this memorandum which summarizes Ramboll's progress during October 2018 toward successfully implementing the In-Situ Bioelectrochemical Laboratory-Scale Treatability Study.

## **TASK M24 – IN-SITU BIOELECTROCHEMICAL LABORATORY-SCALE TREATABILITY STUDY**

- Task Leaders – Scott Warner / Chris Ritchie
- Current Status
  - Three flow-through columns were constructed, packed with site soil (see attached photolog), and evaluated during a start-up phase that began on October 31, 2018. As of the date of this progress report, all columns are operating as designed and intended. Influent and effluent for all three columns are being sampled daily to assess performance and determine approximate steady-state conditions.; once steady-state is reached, sampling along the flow path will commence.
  - Site soil samples were prepared for microbial community analyses.
- Schedule and Progress Updates
  - Column testing is expected to continue through December. This timing is about two months longer than previously projected due to the analytical interferences first discussed in the August progress report. A field study work plan is anticipated to be prepared in Q1 2019 provided that the data continue to support moving forward with a field test.
- Health and Safety
  - There were no safety incidents during October 2018.

## **ATTACHMENT**

Photolog For In-Situ Bioelectrochemical Laboratory-Scale Treatability Study – October 2018

## **In-Situ Bioelectrochemical Laboratory-Scale 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:** *Jay A. Steinberg*, *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:** 12/20/18

## In-Situ Bioelectrochemical Laboratory-Scale Treatability Study Progress Update

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

### **Responsible Certified Environmental Manager (CEM) for this project**

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 In-Situ Bioelectrochemical Laboratory-Scale Treatability Study Progress Update, Nevada Environmental Response Trust Site, Henderson, Nevada



December 21, 2018

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**John M. Pekala, PG**

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Date

**Principal**

Certified Environmental Manager

Ramboll US Corporation

CEM Certificate Number: 2347

CEM Expiration Date: September 20, 2020

**PHOTOLOG FOR IN-SITU BIOELECTROCHEMICAL LABORATORY-SCALE  
TREATABILITY STUDY  
OCTOBER 2018**



**Photo 1. Flow-through column tests with site soils.** Column test experiments from left to right: 1) indirectly treated groundwater (electrochemically generated hydrogen sparged as only electron donor); 2) untreated groundwater (no added electron donor); and 3) electrochemically treated groundwater (hydrogen and organics from cathodic reduction as electron donors).