

Via Electronic Mail

Dr. Weiquan Dong, PE
Bureau of Industrial Site Cleanup
Nevada Division of Environmental Protection
2030 E. Flamingo Road, Suite 230
Las Vegas, Nevada 89119

**WORK PLAN, SMP-REQUIRED NOTIFICATIONS AND CONTINGENCY
PLAN
PRE-EXCAVATION SAMPLING FOR DIOXIN SOIL REMEDIATION
NEVADA ENVIRONMENTAL RESPONSE TRUST SITE
HENDERSON, NEVADA**

Dear Dr. Dong:

August 21, 2018

On behalf of the Nevada Environmental Response Trust ("NERT" or the "Trust"), Ramboll US Corporation (Ramboll) is pleased to present this Work Plan, notification, and contingency plan for upcoming shallow soil sampling work to be performed as part of the remediation of a dioxin-impacted area of soil at the NERT Site in Henderson, Nevada. The sampling work will be conducted by Ramboll and subcontractors and is scheduled to take place in mid-August 2018. This document has been prepared in accordance with the Site Management Plan, Revision 4, dated March 22, 2018 ("SMP"; Ramboll 2018) and approved by NDEP on March 29, 2018. The Trust has been advised of and approves this document. Approval of this document by the Nevada Division of Environmental Protection (NDEP) is required prior to initiating the work described herein.

Ramboll
1489 W Warm Springs Rd
Suite 247
Henderson, NV 89014
USA

T +1 702 800 4418
www.ramboll.com

In addition to providing this Work Plan to conduct the soil sampling, this document addresses the following notifications and requirements of the SMP:

- Section 4.7 describes notifications and procedures to follow in the event of an emergency project related to an accidental spill or release.
- Section 5.3 requires notification to and approval from NDEP and the Trust for work to be performed within 50 feet of any on-site groundwater extraction and treatment system (GWETS) component or monitoring well.
- Section 5.7 requires submittal of a contingency plan to NDEP and the Trust for approval, describing actions to be taken in case of accidental release of untreated groundwater due to damage to any GWETS component.

Please note that the sampling activities and locations described in this Work Plan are not within excavation control areas (ECAs). The planned excavation activities are expected to be situated adjacent to, but outside of an ECA (ECA D3).

BACKGROUND INFORMATION

During the preparation of the *Interim Report: Identification of COPCs and Decision Units for OU-1 Soils, Revision 1* (dated November 15, 2017, approved by NDEP on December 27, 2017) (Ramboll Environ 2017a), a spatial analysis was conducted which involved comparing Site chemicals of potential concern (COPCs) to Soil Screening Levels to identify potential areas of elevated chemical concentrations in soil. The spatial analysis using dioxin toxicity equivalent (TEQ) data compared to the site-specific dioxin TEQ action level (0.0027 mg/kg) revealed an area with elevated dioxin TEQ concentrations near the southwest corner of the GW-11 pond at the NERT Site.

As part of the pre-confirmation sampling event in April 2010, one soil sample location (SSAK3-05) at 2.5 feet below the current ground surface (ft bgs) had a reported dioxin TEQ concentration of 0.011 mg/kg, above the site-specific action level (0.0027 mg/kg). In the sample below, at a depth of 3.5 ft bgs, the dioxin TEQ concentration was below the site-specific action level. This area was not identified for excavation in the 2010/2011 interim soil removal action (Northgate 2010).

Other pre-confirmation sampling locations to the west and northwest of SSAK3-05 (e.g., SSAK2-01 and SSAK3-03) indicated chemical concentrations in shallow soil were below site screening criteria, such that these areas did not require excavation polygons to be designated.

As part of the Phase 1 RI in October 2014, soil samples were collected at three additional locations (RISB-50, -51, and -52) in this area to further delineate dioxin TEQ concentrations in soil. The reported dioxin TEQ concentrations at 0.5 ft bgs at each of these sample locations were above the site-specific action level. Dioxin TEQ concentrations in the next deeper samples at these locations (5.0 ft bgs) were below the site-specific action level.

SCOPE OF WORK

This Work Plan provides the details of pre-excavation soil sampling and analysis for dioxin TEQ to delineate the excavation depth. Selected samples will also be analyzed for other constituents for soil disposal profiling purposes. The pre-excavation soil sampling will follow the NDEP-approved Sampling and Analysis Plan, Revision 1 (SAP) for the Site. The SAP is comprised of the Field Sampling Plan ("FSP"; ENVIRON 2014a), the Health and Safety Plan ("HASP"; ENVIRON 2014b), and the Quality Assurance Project Plan ("QAPP"; Ramboll Environ 2017b).

The purpose of the investigation is to delineate the vertical and lateral extent of excavation to address dioxin TEQ concentrations above the site-specific action level. As shown on Figure 1, the preliminary excavation area has been delineated laterally by previously excavated soil polygons to the northeast (RZ-D-08A), southeast (RZ-D-11), and south (RZ-D-12); by the GW-11 pond berm and associated ECA D3 to the east; and by pre-confirmation soil sampling locations SSAK3-03 and SSAK2-01 to the west. The northwestern boundary of the preliminary excavation area is situated at half the distance between the RISB-50 and -52 boring locations and the outlying pre-confirmation borings.

Three boreholes will be located along the northwestern boundary of the preliminary excavation area for lateral delineation. These locations (DSPE-1, DSPE-2, DSPE-3; see Figure 1), will be sampled using air vacuum (air knife) drilling technology and manual sampling tools. Samples will be collected at approximately one-foot intervals between 0.5 and 5.0 feet bgs. Sample depths of 0.5 to 1.0 feet bgs and 1.5 to 2.0 feet bgs will be analyzed for dioxin TEQ, with the deeper samples placed on laboratory hold for potential analysis if needed.

Four boreholes will be co-located with the previous soil sampling locations (RISB-50 through 52; SSAK5-03;) for vertical delineation. These locations (DSPE-4 through DSPE-7) will be surveyed, marked with stakes, and sampled using the methods described above. The co-located boreholes are intended to address vertical delineation data gaps, as described below.

At RISB-50 through -52, the samples collected at a depth of 0.5 to 1.0 feet bgs were all above the site-specific action level for dioxin TEQ. At a depth of 5.0 to 5.5 feet bgs, the samples were all below the action level. The elevation of the ground surface at these locations is unchanged since the time of sampling. To define the excavation depth at DSPE-4 through DSPE-6 (to be co-located with the RISB locations), samples will be collected at 0.5-foot intervals from 1.5 to 4.5 feet bgs. Sample depths of 1.5 to 2.0 feet bgs and 2.0 to 2.5 feet bgs will be analyzed for dioxin TEQ, with the deeper samples placed on laboratory hold for potential analysis if needed.

At SSAK5-03, dioxin TEQ was detected above the site-specific action level at a depth of 0 to 0.5 feet below the ground surface at the time of sampling. At a depth of 1.0 to 2.0 feet below the original grade, the concentration was below the site-specific action level. Fill material was subsequently added to the area, and the adjusted depths are 2.5 to 3.0 feet bgs (dioxin TEQ above action level) and 3.5 to 4.5 feet bgs (dioxin TEQ below action level). To refine the depth of the excavation at DSPE-7 (to be co-located with SSAK3-05), an additional sample will be collected at a depth of 3.0-3.5 feet bgs and analyzed for dioxin TEQ.

Following the soil characterization activities described herein, a separate work plan, notifications and contingency plan for excavation of the dioxin-impacted soil area will be submitted to NDEP, including the results of the pre-excavation soil sampling and describing the intended excavation depth and extent.

CONTINGENCY PLAN

Per Sections 5.3 and 5.7 of the SMP, this document serves as notification of work to be performed within 50 feet of on-site GWETS components or monitoring wells and a contingency plan to NDEP and the Trust regarding field activities that have the potential for release of untreated groundwater. The purpose of the contingency plan is to describe the action to be taken in case of accidental release of untreated groundwater while performing activities described herein.

Precautions

Ramboll and subcontractor personnel will implement the following precautions and procedures during implementation of the field activities:

- Daily health and safety "tailgate" meetings will be held prior to the start of field work. In addition to discussions of health and safety hazards and prevention, the names and mobile phone numbers for all field staff and subcontractors will be confirmed. Clear lines of communication will be established each day to ensure a swift and coordinated response to a release.
- Envirogen Technologies, Inc. (ETI), the GWETS operator, will be advised of work that may impact their operations (i.e. work within 50 feet of any GWETS component or monitoring well). As shown on Figure 1, monitoring well MW-16 is located within 50 feet of the planned sampling activities.
- All soil borings will be cleared for underground utilities using ground-penetrating radar and will be advanced using air vacuum (air knife) technology to reach each sampling interval, followed by sampling with manual tools such as a hand auger or slide hammer.

Spill Response Procedures

- The primary response action for a release of untreated groundwater during field activities will be to shut down and contain any uncontrolled flow. Pumping, vacuum and containment equipment will be available as needed. However, based on the depth of planned excavation, groundwater will not likely be encountered.
- A spill response kit will be readily available during field activities and utilized in the event of a release of untreated groundwater.
- As described in the SMP, if a release of untreated groundwater occurs, Ramboll will immediately notify Steve Clough of the Trust at (702) 960-4309, who will then notify Weiquan Dong of NDEP at (702) 486-2850, extension 252. If any GWETS components are shut down due to damage from the release of groundwater, Ramboll will provide NDEP, the Trust and ETI with a written explanation for the shutdown.
- The release of untreated groundwater due to field activities will be reported to the NDEP 24-hour Spill Notification line, if required by NAC 445A.345 to 445A.348.

EMERGENCY PROJECTS

In the event of accidental spill or release that could qualify as an emergency project, Ramboll will prepare an Emergency Project notification for approval by the Trust and NDEP. Upon approval of the Emergency Project status by NDEP, a work plan for cleanup will be prepared and submitted in general accordance with Section 4.7 of the SMP.

REQUEST FOR APPROVAL

This document, including the Work Plan, notifications and contingency plan, provides information required by the SMP for implementation of pre-excavation sampling to be performed as part of the dioxin-impacted soil remediation. Your approval of the Work Plan, notifications and contingency plan is requested and appreciated.

We would appreciate your prompt review of this document. Please contact Kimberly Kuwabara at (510) 420-2525 or kkuwabara@ramboll.com if you have any comments or questions concerning the Work Plan, notifications or contingency plan.

Sincerely,



Kimberly Kuwabara, MS
Senior Managing Consultant

CEM #2353, expires 3/20/2019



John M. Pekala, PG
Principal

CEM #2347, expires 9/20/2018

Ec: James Dotchin, NDEP-BISC
Nevada Environmental Response Trust
Tanya O'Neill, Foley & Lardner LLP
Wendy Prescott, ETI

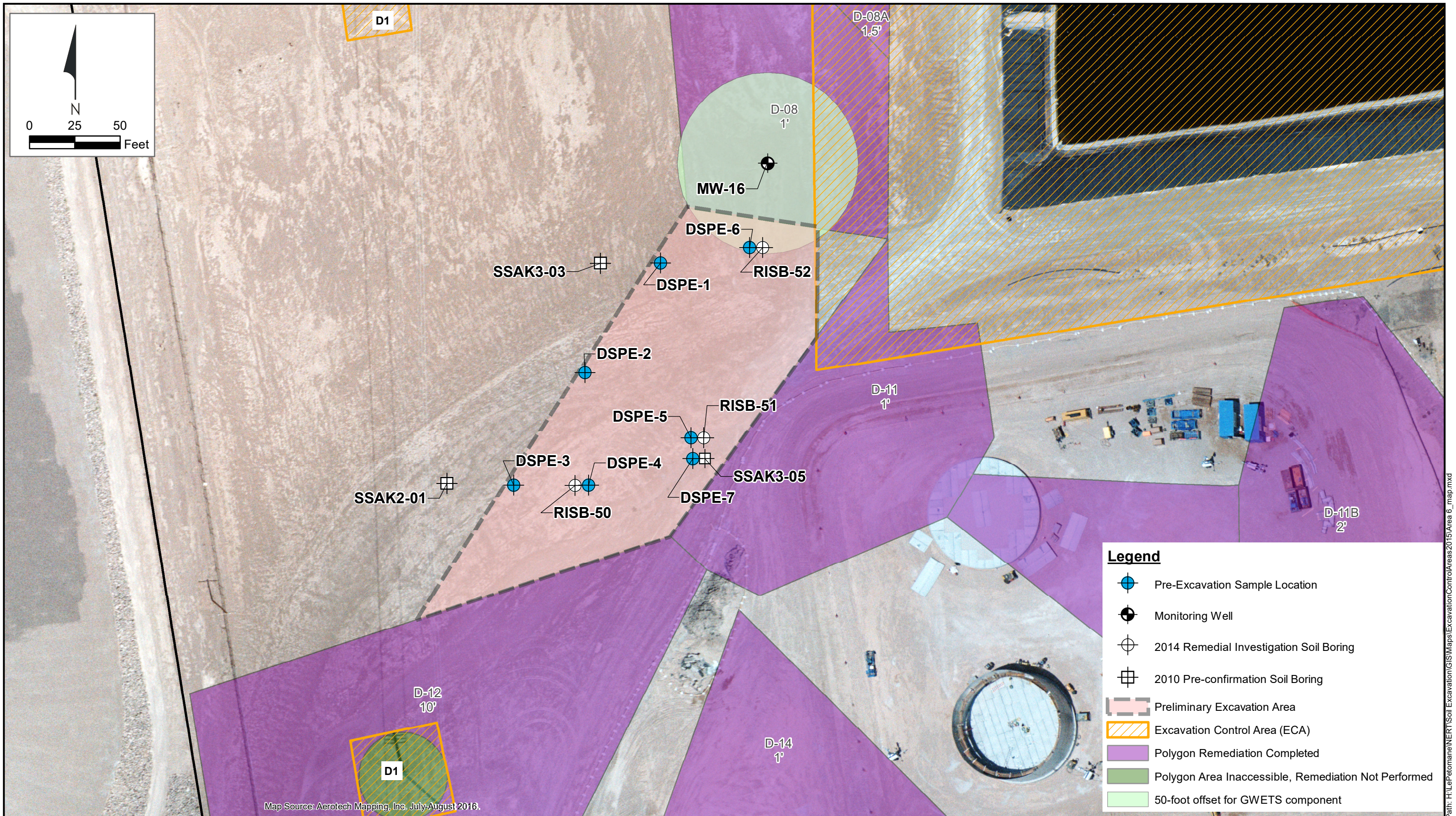
FIGURE

Figure 1 - Pre-Excavation Sampling Locations

REFERENCES

- ENVIRON, 2014a. Field Sampling Plan, Revision 1; Nevada Environmental Response Trust Site; Henderson, Nevada. July 18. NDEP approved August 1, 2014.
- ENVIRON, 2014b. Health and Safety Plan for Remedial Investigation and General Site Activities, Revision 1; Nevada Environmental Response Trust Site; Henderson, Nevada. July 18. NDEP approved August 1, 2014.
- Northgate, 2010. Errata to RZ-B and RZ-D Figures. Letter to Shannon Harbour of NDEP. November 29.
- Ramboll Environ, 2017a. Interim Report: Identification of COPCs and Decision Units for OU-1 Soils, Revision 1. November 15. NDEP approved December 27, 2017.
- Ramboll Environ, 2017b. Quality Assurance Project Plan, Revision 2; Nevada Environmental Response Trust Site; Henderson, Nevada. October 26. NDEP approved November 8, 2017.
- Ramboll, 2018. Site Management Plan, Revision 4; Nevada Environmental Response Trust Site; Henderson, Nevada. March 22. NDEP approved March 29, 2018.

FIGURE



Pre-Excavation Sampling Locations
 Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
1

Drafter: RS

Date: 8/14/2018

Contract Number: 21-32100FA

Approved by: DR

Revised:

Path: H:\LePetomane\NERT\Soil_Excavation\GIS\Maps\ExcavationControl\Areas2018\Area_6_map.mxd

**Work Plan, SMP-Required Notifications and Contingency Plan
Pre-Excavation Sampling for Dioxin Soil Remediation**

**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 system(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, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

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

*not individually, but solely as
Pres. J.A.*

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:

8/21/18

**Work Plan, SMP-Required Notifications and Contingency Plan
Pre-Excavation Sampling for Dioxin Soil Remediation**

**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 provided 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.



**John M. Pekala, PG
Principal**

8/21/2018

Date

Certified Environmental Manager
Ramboll
CEM Certificate Number: 2347
CEM Expiration Date: September 20, 2018