

August 2, 2022

TECHNICAL MEMORANDUM

To: Steve Clough
Nevada Environmental Response Trust

From: Dan Peterson, Ph.D., P.G., Ramboll
Elizabeth Miesner, Greg Kinsall, and Kun Zhao, Ramboll

**Re: Phase 3 RI Modification No. 15
Supplemental Soil Gas Investigation in Operable Unit 3
Nevada Environmental Response Trust Site
Henderson, Nevada
Ramboll Project No. 1690025040-046**

This Technical Memorandum presents Ramboll US Consulting, Inc.'s (Ramboll's) recommended Modification No. 15 to the scope of work for Phase 3 of the Remedial Investigation (RI) currently in progress at the Nevada Environmental Response Trust ("NERT") Site (the "Site") located in Henderson, Nevada. On June 29, 2022, the Nevada Division of Environmental Protection (NDEP) provided comments to the *Baseline Health Risk Assessment Work Plan for OU-3* (February 28, 2022). Per Attachment A, General Comment No. 1 of the NDEP comment letter, NDEP indicated that the existing soil gas data for chloroform in the OU-3 area west of Pabco Road and north of Galleria Drive may not be adequate to assess risk and may not represent a worst case or Reasonable Maximum Exposure (RME) condition. NDEP has suggested that a supplemental soil gas investigation be conducted in this area. The Phase 3 RI Modification No. 15 was prepared such that this data can also be incorporated into the Remedial Investigation (RI) Report for OU-3. The scope of work presented herein was designed to address NDEP's comment.

Proposed Supplemental Soil Gas Investigation

To further evaluate the vapor intrusion pathway, additional soil gas samples will be collected to characterize the concentrations of VOCs in soil gas in the vicinity of the chloroform plume in groundwater west of Pabco Road and north of Galleria Drive. General Comment No. 1 of the June 29, 2022 letter indicated that to the extent the area west of Pabco Road was "impacted by the NERT core plumes [note, there is only one NERT core plume and NERT interpreted this to refer to contamination migrating in groundwater from OU-1], it is suggested to add at least two more soil gas sampling locations within the area of each of the two plume areas" shown on Figure 4-1 of the Baseline Health Risk Assessment Work Plan for OU-3. However, only the western plume of the two plumes shown on Figure 4-1 is associated with NERT's plume migrating via groundwater from OU-1. The eastern plume is associated with contaminant migration from the Eastside Sub-Area as demonstrated by the particle track evaluations submitted by NERT on November 3, 2020 and approved with comments by NDEP on November 18, 2020. Therefore, and consistent with the NERT RI/FS Work Plan Addendum: Phase 3 Remedial Investigation, Revision 1, approved by NDEP on November 8, 2017, and NDEP's June 29, 2022 comments on the Baseline Health Risk

Assessment Work Plan for OU-3, NERT is not proposing any additional soil gas sampling associated with the eastern plume since it is not associated with contamination migrating in groundwater from OU-1. Accordingly, NERT is proposing to install two multi-level soil gas probe locations (RISG-91 and RISG-92) as shown on Figure 1. Multi-level soil gas probes will be installed at each location, with one probe installed to a depth of 5 feet below ground surface (bgs) and one probe installed to 15 feet bgs. The proposed sample locations and depths may be adjusted in the field based on utility clearances, access constraints, drilling refusal, or depth to groundwater; however, all will be located outside of the BRC Open Space Sub-Area. Based on the soil gas investigation conducted in this area under Phase 3 RI Modification No. 7, refusal (likely due to caliche) or a shallow depth to water has previously been encountered and may require modification of the depth of the deeper soil gas probes. A deeper probe will not be installed at a given location at a depth that is less than 10 feet bgs.

Soil gas samples will be collected at the two new multi-level probe locations described above and at 10 existing locations (RISG-35, RISG-36, RISG-37, RISG-38, RISG-39, RISG-40, RISG-42, RISG-43, RISG-44, and RISG-45) that were previously installed as part of Phase 3 RI Modification 7 and are outside of the BRC Open Space Sub-Area (also shown on Figure 1). Existing soil gas sampling locations RISG-41 and RISG-46 are located within the Open Space Sub-Area, and therefore will not be resampled. Table 1 provides a summary of the anticipated soil gas samples to be collected at the new and previously existing soil gas probes. In all, up to 22 investigative soil gas samples may be collected.

Laboratory Analysis

Soil gas samples collected will be analyzed for VOCs using USEPA Method TO-15. Following data collection, Ramboll will complete validation of the analytical data as part of this scope of work in accordance with the Quality Assurance Project Plan, Revision 6. The drilling, sampling, and analytical methods to be used will follow those previously conducted during the RI.

Reporting

The proposed soil gas data will be evaluated in the RI Report for OU-3 and the BHRA for OU-3.

Please contact us should you have any questions about the recommended Phase 3 RI Modification No. 15 supplemental soil gas investigation.

Attachments

Table 1 Soil Gas Sampling Locations in OU-3

Figure 1 Soil Gas Sampling Locations in OU-3

**Phase 3 RI Modification No. 15
Supplemental Soil Gas Investigation in Operable Unit 3**

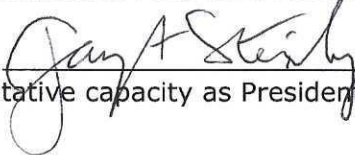
**Nevada Environmental Response Trust
(Former Tronox LLC Site)
Henderson, Nevada**

Nevada Environmental Response Trust (Trust) 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 the Trust. 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:  Not Individually, but Solely as President of the Trustee, 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

**Phase 3 RI Modification No. 15
Supplemental Soil Gas Investigation in Operable Unit 3**

**Nevada Environmental Response Trust
(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.



**Jonathan Sarich., CEM
CEM #2361, Expires 9/25/23
Managing Consultant**

August 2, 2022

Date

**Table 1. Soil Gas Sampling Locations in OU-3
Phase 3 RI Modification No. 15
Nevada Environmental Response Trust Site; Henderson, Nevada**

Soil Gas Location ID	Shallow Sample Depth (ft bgs)	Deep Sample Depth (ft bgs)	Location Status	Notes
RISG-35	5	---	Existing	Groundwater encountered at 9 ft bgs; deep probe not installed.
RISG-36	5	15	Existing	
RISG-37	5	13	Existing	Refusal encountered at 13.5 ft bgs; deep probe depth adjusted accordingly.
RISG-38	5	15	Existing	
RISG-39	5	13.5	Existing	Refusal encountered at 14 ft bgs; deep probe depth adjusted accordingly.
RISG-40	5	---	Existing	Refusal encountered at 6.5 ft bgs.; deep probe not installed.
RISG-42	5	12.5	Existing	Refusal encountered at 12.5 ft bgs; deep probe adjusted accordingly.
RISG-43	5	13	Existing	Refusal encountered at 13.5 ft bgs; deep probe adjusted accordingly.
RISG-44	5	15	Existing	
RISG-45	5	15	Existing	
RISG-91	5	15*	Proposed	Proposed probe depths 5 ft bgs and 15* ft bgs.
RISG-92	5	15*	Proposed	Proposed probe depths 5 ft bgs and 15* ft bgs.

Notes:

* - Proposed deep soil gas probe depths may be modified based on refusal or shallow groundwater, as necessary.

bgs = below ground surface

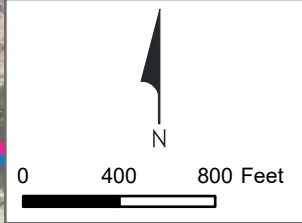
ft = foot

Legend

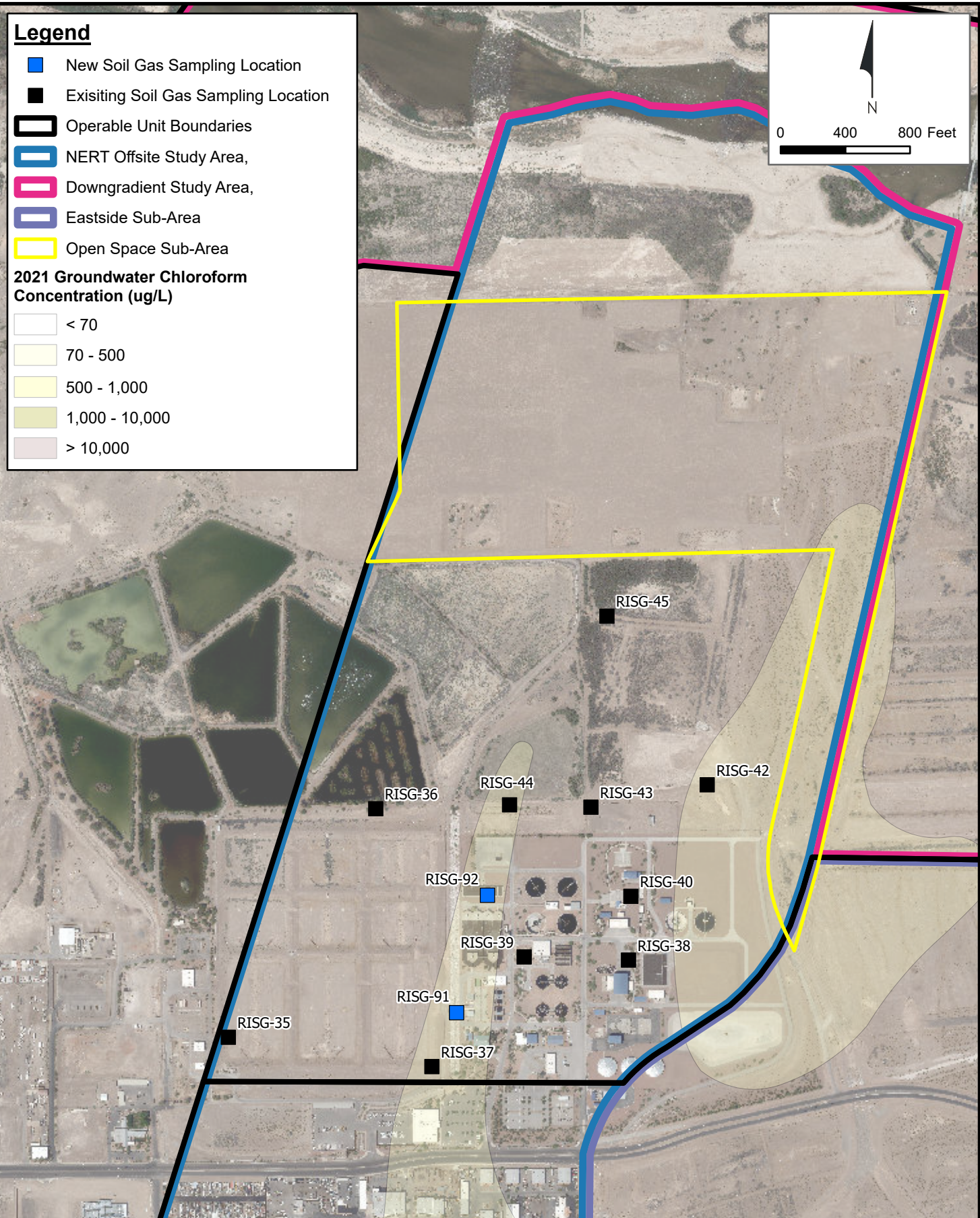
- New Soil Gas Sampling Location
- Existing Soil Gas Sampling Location
- Operable Unit Boundaries
- NERT Offsite Study Area,
- Downgradient Study Area,
- Eastside Sub-Area
- Open Space Sub-Area

2021 Groundwater Chloroform Concentration (ug/L)

- < 70
- 70 - 500
- 500 - 1,000
- 1,000 - 10,000
- > 10,000



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**Phase 3 RI Modification No. 15
Soil Gas Sampling Locations**
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
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