



NEVADA DIVISION OF  
**ENVIRONMENTAL  
PROTECTION**

**STATE OF NEVADA**  
Department of Conservation & Natural Resources

Steve Sisolak, Governor  
Bradley Crowell, Director  
Greg Lovato, Administrator

May 6, 2022

Jay A. Steinberg  
Nevada Environmental Response Trust  
35 East Wacker Drive, Suite 690  
Chicago, IL 60601

Re: **Tronox LLC (TRX) Facility  
Nevada Environmental Response Trust (Trust) Property  
NDEP Facility ID #H-000539**  
Nevada Division of Environmental Protection (NDEP) Response to: *Baseline Health Risk  
Assessment Work Plan for Ou-3*

Dated: February 28, 2022

Dear Mr. Steinberg,

The NDEP has received and reviewed the Trust's above-identified Deliverable and provides comments in Attachment A. A revised Deliverable should be submitted by **07/07/2022** based on the comments found in Attachment A. The Trust should additionally provide an annotated response-to-comments letter as part of the revised Deliverable.

Please contact the undersigned with any questions at [wdong@ndep.nv.gov](mailto:wdong@ndep.nv.gov) or 702-668-3929.

Sincerely,

*Dong Weiguan*

Weiquan Dong, P.E.  
Bureau of Industrial Site Cleanup  
NDEP-Las Vegas City Office

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## **Attachment A**

### **General Comment #1 Data Adequacy and Associated Risk**

The Department's primary concern is that the data may not be adequate to assess risk and may not represent worst case or Reasonable Maximum Exposure (RME) conditions. For example, there are only 16 soil gas borings for the area west of Pabco Road and these are predominantly located outside the chloroform plume. Soil samples west of Pabco Road are highly clustered when not along the edge of the Las Vegas Wash. It is also noted that the risk assessment is administratively limited to two chemicals on the east site of Pabco Road perchlorate and chlorate, in which case the total risk is likely to be under-estimated.

Figure 4-1 depicts two chloroform plumes (70-500 µg/L) in the southeast and southcentral area for OU-3 West of Pabco Road. This is comparable to the temporal contours produced by Neptune which depict an increasing gradient as you move south and east across the area depicted in Figure 4-1. Neptune also previously identified groundwater data gaps based on that contouring effort, including some gaps around the OU-3 area east of Pabco Road. However, as NERT's responsibilities in this area do not extend beyond groundwater with the potential for direct contact, discussion of those gaps is less relevant here.

In addition, the Deliverable should better address potential uncertainties in the work plan, particular in risk. The Deliverable would benefit from a more robust discussion about the uncertainties associated with using concentration measurements from depth to perform a risk assessment that presumably involves contact with water at the top of the aquifer (e.g., the utility trench scenario mentioned often in the text). For example, Table 4-2 suggests that the water level depth at well NERT5.98S2 is 9 ft bgs, while the well screen spans depths from 60 to 70 ft bgs. If the water truly is 9 ft bgs, there is 51 ft of water between the water table and the well screen. The work plan should clarify whether the risk assessment will use concentration measurements from depth to represent the hypothetical exposure concentrations at the water table. Doing so would assume that concentrations in the aquifer are uniform with respect to depth; the text should provide support for this assumption, if applicable.

### **Essential Corrections**

#### **Specific Comment #1 Section 6.3**

This section states that trivalent chromium toxicity values will be used as a surrogate for total chromium. However, footnote 17 in Section 6.1.2 and Table 6-1 state that all chromium at the facility has been found to be hexavalent chromium so total chromium will be considered hexavalent chromium. Therefore, the use of trivalent chromium toxicity values as a surrogate is inappropriate. Please use an appropriate value or justify this choice.

#### **Specific Comment #2 Section 6.6**

In the first paragraph it states: "Data quality assessment is an analysis that will be performed after the risk assessment is complete to determine whether enough data have been collected to

support the risk-based decisions that are recommended by the risk assessment.” Does this mean the data quality assessment will not be reported in the risk assessment? Data quality assessment should be reported in the risk assessment. The data quality assessment should be completed as part of the risk assessment, not after. Please clarify.

**Specific Comment #3 Section 4.2.1**

The work plan should cite the guiding regulation that states that direct contact with groundwater is possible for certain workers to a depth of 10 feet below ground surface, and that groundwater exposure below this depth does not need consideration.

**Specific Comment #4 Section 4.1, Section 5.1.1, and Figure 4-1**

These sections state that there are 16 soil gas sampling locations and a total of 13 soil gas probe locations and refers to Figure 4-1. Please explain the difference between the 16 sampling locations and the 13 soil gas probe locations. Based upon the database, there are soil gas data available for 16 locations; however, Figure 4-1 appears to only depict 11 due to some locations having multiple depths. Please clarify the apparent discrepancies by making it easier to identify each sample and depth location on the map. Find a way to show the depth information where appropriate, whether by labeling or making each depth square a different size in addition to the different colors, paying attention to rendering order. In addition, please provide information regarding the quantity of samples and choice of sampling locations, as they do not appear to be sufficient to assess risk and they do not appear to represent worst case conditions.

**Specific Comment #5 Section 6.2.1 and Figure 6-1**

While direct contact with sediment and surface water within Wetlands Park are prohibited, given the Park usage and the numbers of visitors, it is likely that some users disregard Park rules and encounter bank soils, sediment, and surface water. Therefore, it is appropriate to include a trespasser scenario to evaluate this type of exposure. Please revise the workplan accordingly.

**Specific Comment #6 Section 7**

Throughout the Deliverable (for example, section 6.1.2), it is explained that volatile preliminary COPCs in shallow groundwater will be evaluated for vapor intrusion from screen depths of 60 feet or less, and non-volatile preliminary COPCs will be evaluated for direct contact at locations with a screen depth of 10 feet or less. As such, it is surprising to see VOCs evaluated for the 10 feet or less shallow groundwater. It would help the reader to interpret this if throughout the report, it was stated that VOCs would also be evaluated for direct contact at 10 feet or less for shallow groundwater. Additionally, it is not clear why VOCs at 10 feet or less were excluded from the evaluation of vapor intrusion at 60 feet or less (footnote 1 of table D-4). It is not clear why the VOCs are separated for vapor intrusion or if the VOCs in the second bullet are preliminary COPCs due to vapor intrusion or direct contact. Please clarify the text here.

**Specific Comment #7            Table 4-2**

In Table 4-2, many of the well screens are positioned at considerable depth (up to 70 ft below ground surface) and the water level measurements from these screens are taken to be indicative of the depth of the water table. The associated text should acknowledge that this is true only under the assumption of zero vertical hydraulic gradient and provide support for that assumption.

**Specific Comment #8            Section 5.1.3, Figure 4-3**

The logic behind the location selection for soil samples needs to be discussed beyond the availability of environmental investigations. Please explain why a highly clustered soil sample pattern around SWF is sufficient for this risk assessment west of Pabco Road.

**Specific Comment #9            Appendices**

Samples in the soil gas, groundwater, and soil data sets are classified as non-detects based on the reporting detection limit. It should be clarified if the reporting detection limit is the same as the sample quantitation limit, which NDEP recommends for risk assessment. There are several non-detects in the data sets; it should be clear how non-detects will be treated in the risk assessment.

**Minor Corrections**

**Specific Comment #10        Section 5-3.**

The first two bullets on page 5-4 should be combined.

**Specific Comment #11        Appendices A - C**

The BMI Regional Database does not have results for:

- a) Nitrate for samples WMW6.55S-20160217 and WMW6.15S-20160217
- b) Nitrate as NO<sub>3</sub> for sample PC-97-20160208
- c) Twenty-three samples from 2021: LVWPS-MW102A-20210427, MW-3-20210428, MW-4-20210428, MW-K5-20210428, NERT3.80S1-20210504, NERT3.98S1-20210505, PC-103-20210429, PC-155A-20210719, PC-155B-20210719, PC-156A-20210723, PC-156B-20210723, PC-157A-20210716, PC-157B-20210716, PC-191-20210428, PC-191-20210428-FD5, PC-2-20210428, PC-4-20210528, PC-53-20210428, PC-74-20210505, PC-77-20210504, PC-96-20210714, PC-97-20210714, PC-98R-20210428

Table B-1. Samples PC-156A-20150506, PC-156B-20150506, PC-157A-20150506, and PC-157B-20150506 have duplicate results in Table B-1 for Nitrate Nitrite as N where one result has a qualifier, and one result does not have a qualifier. The BMI Regional DB has the result with the qualifier. Please review and address as necessary.

**Specific Comment # 12      Table B-1**

Location IDs. Some location IDs differ between Table B-1 and the BMI Regional Database:

- a. Samples: WMW5.58S-20150115 and WMW5.58S-20160505, Table B-1 has location WMW5.58SI, but the BMI database has location WMW5.58S.
- b. Samples: MW-1-20180411, MW-1-20180411-FD, Table B-1 has location MW-1, but the BMI database has location MW-1[CHIM].
- c. Samples: MW-3-20190705 and MW-4-20190705, Table B-1 has location MW-3 and MW-4, but the BMI database has location MW-03 and MW-04.

Please review and address as necessary.

**Specific Comment #13      Table B-1, Censoring Limits**

For multiple records with non-detected results, there is a discrepancy between the limit used to report the non-detected result. Table B-1 usually presents the result at the Quantitation Limit (which was translated to the PQL in the BMI database) and the BMI database presents the result at the SQL (which was translated from the original Reporting Detection Limit). There are some cases where the Table B-1 result is equivalent to the Reporting Detection Limit instead of the Quantitation Limit.

For example:

Source	Sample ID	Analyte	Result	MDL	SQL	PQL	Detect flag	Qualifier
BMI Database	WMW5.7N-20180717	Chlorate	50	10	50	100	U	U
Table B-1	WMW5.7N-20180717	Chlorate	25	5	100	25	N	U
BMI Database	PC-76-20160429	Chlorate	10	50	10	100	U	U
Table B-1	PC-76-20160429	Chlorate	50	10	100	50	N	null

Per the EDD Guidance, “for non-radionuclide non-detected results, the result reported should equal the SQL.” In addition, the EDD Guidance references the December 3, 2008, NDEP Guidance “Detection Limits and Data Reporting” for the definition of MDL, SQL, and PQL. This guidance document also states

“In effect, the DVSRs and databases, agree concerning the use of the term MDL; RDL appears to be the same as SQL; and RL appears to be the same as PQL. QL is also the same as PQL. It is requested that the discrepancy in the nomenclature be resolved. Most sampling and analysis plans, risk assessment reports and other relevant documents describe the censoring limit to be used for statistical data analysis as the SQL. Consequently, NDEP suggests that the MDL, SQL, PQL nomenclature be adopted in the databases as well as in the DVSRs and all other Deliverables”.

Table B-1. Table B-1 is not consistent between the columns “detect\_flag” and “interpreted\_qualifier”, although most discrepancies are for records that are not currently found in the BMI Regional Database. These two fields should be verified for consistency.