

OFFICE OF THE NEVADA ENVIRONMENTAL RESPONSE TRUST TRUSTEE

Le Petomane XXVII, Inc., Not Individually, But Solely as the Nevada Environmental Response Trust Trustee
35 East Wacker Drive - Suite 690
Chicago, Illinois 60601
Tel: (702) 960-4309

December 19, 2023

Dr. Weiquan Dong, P.E.
Bureau of Industrial Site Cleanup
Nevada Division of Environmental Protection
375 E. Warm Springs Road, Suite 200
Las Vegas, Nevada 89119

RE: Refined Screening-Level Ecological Risk Assessment for Operable Unit 1, Revision 2
Nevada Environmental Response Trust
Henderson, Nevada

Dear Dr. Dong:

The Nevada Environmental Response Trust (NERT) is pleased to present the Refined Screening-Level Ecological Risk Assessment for Operable Unit 1, Revision 2 for Nevada Division of Environmental Protection (NDEP) review. This report has been revised in accordance with NDEP's comments dated June 8, 2023. As requested, NERT has also prepared an annotated response to comments summarizing the revisions addressing NDEP's comments.

If you have any questions or concerns regarding this matter, feel to contact me at (702) 960-4309 or at steve.clough@nert-trust.com.

Office of the Nevada Environmental Response Trust



Stephen R. Clough, P.G., CEM
Remediation Director
CEM Certification Number: 2399, exp. 3/24/25

Cc (via NERT Sharefile Distribution):

Frederick Perdomo, NDEP, Deputy Administrator
James Dotchin, NDEP, Chief, Bureau of Industrial Site Cleanup
Alan Pineda, NDEP, Bureau of Industrial Site Cleanup
Danielle D. Ward, NDEP, Bureau of Industrial Site Cleanup
William Frier, U.S. Environmental Protection Agency, Region 9
Mark Duffy, U.S. Environmental Protection Agency, Region 9
Jay Steinberg, as President of the Nevada Environmental Response Trust Trustee and not individually
Andrew Steinberg, as Vice President of the Nevada Environmental Response Trust Trustee and not individually
Brian Loffman, Le Petomane, Inc.
Tanya C. O'Neill, Foley and Lardner, LLP
Dan Peterson, Ramboll
Chris Stubbs, Ramboll
Kim Kuwabara, Ramboll

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David Bohmann, Tetra Tech
Dana Grady, Tetra Tech
Rick Kenter, Arcadis
Kim Haymond, Arcadis

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Carol Nagai, Metropolitan Water District of Southern California
Christene Klimek, City of Henderson
Christine Nobles, Central Arizona Project
Daniel Chan, LV Valley Water District
Dave Johnson, LV Valley Water District
Deena Hannoun, Southern Nevada Water Authority
Eric Fordham, Geopentech
Jill Teraoka, Metropolitan Water District of Southern California
Katherine Callaway, Central Arizona Project
Marcia Scully, Metropolitan Water District of Southern California
Maria Lopez, Metropolitan Water District of Southern California
Mauricio Santos, Metropolitan Water District of Southern California
Mickey Chaudhuri, Metropolitan Water District of Southern California
Orestes Morfin, Central Arizona Project
Steven Anderson, LV Valley Water District
Todd Tietjen, Southern Nevada Water Authority
Warren Turkett, Colorado River Commission

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Kirk Stowers, Broadbent Inc.
Kristen Lockhart, Neptune Inc.
Kurt Fehling, The Fehling Group
Karen Gastineau, Broadbent Inc.
Patti Meeks, Neptune Inc.
Paul Black, Neptune Inc.
Roy Thun, GHD

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Dane Grimshaw, Olin Corporation
Darren Croteau, Terraphase
Dave Share, Olin Corporation
Ed Modiano, de maximus
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Jeff Gibson, Endeavour LLC
John-Paul Rossi, Stauffer
Kelly Richardson, Latham & Watkins
Lee C. Farris, Landwell
Melanie Hanks, Olin Corporation
Nat Glynn, Latham & Watkins
Nick Pogoncheff, NV5
Peter R. Jacobson, Syngenta
Ranjit Sahu, BRC
Richard Pfarrer, TIMET

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Spencer Lapiers, de maximus
Zeitel Senitz, de maximus
William Golden, EMD
Sonia Lewandowski, EMD
Ebrahim Juma, Clark County Water Quality
Joe Leedy, Clark County Water Quality
John Solvie, Clark County Water Quality

Initial NDEP Comments (3/2/2022)	NERT's First Response (5/13/2022)	NDEP Comment on NERT's 1st Response (8/26/22)	NERT's 2nd Response (4/20/2023)	NDEP Comment on NERT's 2nd Response (6/8/2023)	NERT's 3rd Response (8/14/2023)
<p>2. Specific Comment #2: Background Comparisons There is insufficient discussion of the background comparisons. The Gilbert's Toolbox results presented in Table E-2b include many p-values that are equal to 1. In a 1sided test this implies a strong significant difference between background and site data, but the wrong way around. In principle, site concentrations cannot be less than background, in which case these tests run as 1-sided tests. However, when statistical differences like this occur, then there are either unaccounted for analytical differences or the background data do not represent site conditions. There are a few places on the BMI Complex where site concentrations for some metals are less than the McCollough background on which background comparisons are performed. At the very</p>	<p>Additional discussion will be added to Section 2.1.5.2 of Revision 1 of the OU-1 Refined SLERA Report to address the issue raised in this comment regarding p-values of 1 and relevance regarding site conditions compared to background, including explanation that:</p> <ul style="list-style-type: none"> • The differences observed are likely a combination of geologic, analytical factors, and natural variance. • With the general natural variability of alluvial geology, even within a single geologic unit, it is unlikely to obtain a perfect representation of local background for every existing site data set or relevant subset of data across this study area. • Therefore, not every variance between site and background data must be due to anthropological influence or analytical issues. 	<p>Adding the suggested additional discussion will be acceptable, pending review of the revised report. However, some OU-specific discussion will need to be included discussing the meaningfulness of the background comparisons if the background data are not suitable for this OU. Box plots and/or quantile plots can be revealing in this situation and should be considered prior to finalizing results. The background comparisons, in effect, are used to statistically confirm what's seen in the data. Please also note that precedent has been set to use the McCullough background levels when the more local site data are less than the McCullough sitewide background data. The point of the comparisons is simply to describe what the data appear to say. Decisions can be made based on these comparisons, but other information can, and has been brought help to make final decisions.</p>	<p>The Revised Report has been updated to reflect NDEP's acceptance of NERT's May 13, 2022 response. Specifically, text was added to Section 2.1.5.2, Section 3.2, and the uncertainty assessment (Section 4.7.4) to address NERT's initial response and NDEP's comment to that response.</p>	<p>2.1.5.2 now shows the McCullough background data, and boxplots have been added to appendix E. There doesn't appear to be any OU-specific discussion of appropriateness of background data regarding large p-values (including values of 1) or any additional explanatory text as suggested in the May 2022 response to comments. Please add some additional discussion of the background comparison results.</p>	<p>The Refined Screening-Level Ecological Risk Assessment for Operable Unit 1, Revision 1 submitted to NDEP in April 2023 was revised as indicated in NERT's 2nd Response in this table (dated 5/13/2022 and 4/20/2023). The text of Section 4.7.4 discusses those constituents identified in Section 2.1.5.2 with p- values of 1. Observations of the similarity of results throughout OU-1 are provided (i.e., OU-specific discussion was added in Section 4.7.4). Section 4.7.4 also includes the following statement: "Despite the few instances where background concentrations in soil were greater than OU-1 soil concentrations, the BRC/TIMET Regional Background Data Set (2007) approved by NDEP is suitable for use in this refined SLERA."</p>

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<p>least, some acknowledgement and discussion of the reasons why this might occur is warranted.</p>					<p>Section 4.7.4 also now includes a comparison of the constituents with background soil concentrations greater than Site concentrations against ESVs to better illustrate potential risks from these constituents.</p> <p>Overall, the constituents discussed in this section were not identified as potential ecological risk drivers for the ecological risk management decision making needed for this Refined SLERA.</p>

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<p>10. Specific Comment #10: Section 2.1.5, p. 2-8, Preliminary Chemicals of Potential Concern Please add text to the first bullet to clarify that elimination of chemicals that are not detected is contingent upon evaluation of limits of detection relative to ESVs. Non-detected constituents can only be eliminated in screening if DLs are less than appropriate ESVs.</p>	<p>The OU-1 Refined SLERA included an uncertainty analysis for constituents not detected by comparison of the detection limits to ESVs (Appendix J-2a for the Operations Area and Appendix J-2b for Parcel E). Tables in Appendix J-2a and J-2b are organized by chemical, arranged from highest detection limit to lowest detection limit for each chemical with the ratios of detection limits (or ½ DLs) versus ESVs. The ratios are comparable to the hazard quotients. The uncertainty assessment briefly discusses these chemicals in Section 4.7.3. To address this comment in Revision 1 of the OU-1 Refined SLERA Report:</p> <ul style="list-style-type: none"> The text in the first bullet in Section 2.1.5 will clarify that elimination of chemicals that are not detected includes an evaluation of detection limits relative to ESVs as part of the uncertainty assessment. 	<p>The response is acceptable, pending review of the revised report.</p>	<p>The Revised Report was updated to reflect NDEP's acceptance of NERT's May 13, 2022 response. Specifically, new text was added to Section 2.1.5 that addresses SQLs > ESVs and chemicals with Detection Frequencies < 5% (not eliminated if Max HQ>1). Spatial plots were also created for each ND chemical with SQLs>ESVs. The evaluation of ND chemicals with SQLs>ESVs is provided in the uncertainty assessment. In Section 4.7.6 The evaluation also includes a summary of where detection limits are influenced by dilutions that were applied for other chemicals being analyzed. new tables were added to Appendix J that focus on ND chemicals with SQLs>ESVs sorted from high to low ratios.</p>	<p>Edits addressing the first two bullet points are acceptable. However, additional information should be added to clarify the following bullet:</p> <ul style="list-style-type: none"> The uncertainty assessment in Section 4.7.3 [note: this is now Section 4.7.6] will also include discussion of: Where detection limits are influenced by dilutions that were applied for other chemicals being analyzed. Which chemicals have all detection limits that exceed ESVs versus those with detection limits that exceed ESVs due to location-specific diluted samples. <p>Specifically, in the section discussing dilutions on page 4-53, it would be useful to discuss the percentage of samples in each area that have elevated SQLs due to dilutions, and</p>	<p>The Revised Report has been updated to address NDEP's 6/8/23 comment. Specifically, the uncertainty assessment section (Section 4.7.6) was updated to include:</p> <ul style="list-style-type: none"> A discussion and specific examples where detection limits are influenced by dilutions that were applied for other chemicals being analyzed. A discussion of chemicals that all have detection limits that exceed ESVs versus those with detection limits that exceed ESVs due to location-specific diluted samples. <p>The new text also cross references the specific spatial plots requested by NDEP. Finally, Tables J-2e and J-2f were expanded to show the range of SQLs and the range of SQL/ESV ratio exceedances. The text also clarifies that Tables J-2a provides detailed supporting information, sorted by</p>

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	<ul style="list-style-type: none"> • The uncertainty assessment discussion in Section 4.7.3 will be expanded to discuss those constituents with the highest currently discussed. As part of this expanded discussion, two additional tables will be added to Appendix J-2, which provide the same information as currently presented in Tables J-2a and J-2b, but the ratios will be sorted from highest to lowest for any chemical at any location to aid in the discussion of how these locations overlap with other detected COPECs. • The uncertainty assessment in Section 4.7.3 will also include discussion of: <ul style="list-style-type: none"> o Where detection limits are influenced by dilutions that were applied for other chemicals being analyzed. o Which chemicals have all detection limits that exceed ESVs versus 			<p>whether the remaining samples in each or those areas have SQL/ESV ratios less than 1, or whether the remaining undiluted samples also have SQL/ESV ratios greater than 1.</p>	<p>chemical and within each chemical group, results are sorted from highest ratio to lowest ratio for easy access and review of the supporting information. The detailed analysis in Section 4.7.6 shows that:</p> <ul style="list-style-type: none"> • The are no specific chemicals that must be further evaluated for ecological risk, despite some of the elevated ratios discussed in Section 4.7.6. • The uncertainties related to samples not detected that exceed the ESVs do not change the conclusions of this risk assessment.

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	<p>those with detection limits that exceed ESVs due to location-specific diluted samples.</p> <p>Specific Comment #10 states that "Non-detected constituents can only be eliminated in screening if DLs are less than appropriate ESVs."</p> <p>As can be seen in the Appendix J-2a and J-2b of the August 2021 OU-1 Refined SLERA Report, there are some chemicals where the detection limits exceed the ESVs.</p> <ul style="list-style-type: none"> • The approach described in the response above shows that chemicals with DLs exceeding ESVs will be addressed in the updated uncertainty assessment. • It should be noted that Ramboll does not interpret this comment to indicate that NDEP wants chemicals with DLs exceeding ESVs included in the food web model and other quantitative assessment. However, if NDEP 				

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	<p>prefers that chemicals not detected with DLs greater than the ESV be included in the food web model or other quantitative assessment, this can be done, with acknowledgement that the actual results (i.e., hazard quotients) based on detection limits will be so uncertain that they are unlikely to change the conclusions of the report.</p>				
<p>12. Specific Comment #12: Section 2.1.5.1, p. 2-9, Data Used in the SLERA</p> <p>In the last bullet on the page, please clarify that DDx is usually defined as the sum of six isomers (2,4'-DDD, 4,4'-DDD, 2,4'-DDE, 4,4'-DDE, 2,4'-DDT, 4,4'-DDT). More discussion is needed as to why a varying number of isomers are included in the DDx sums here, and how that potentially effects DDx data comparability across the site.</p>	<p>Table D-7 of the OU-1 Refined SLERA summarizes the DDx isomer data available for each of the samples, including detected concentrations, detection limits for isomers not detected, isomers not analyzed, and the sum of the DDx value. As shown in Table D- 7, the 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT isomers were analyzed for all samples. To add additional clarity, the last bullet of Section 2.1.5.1, page 2-9 of</p>	<p>The proposed revision is acceptable, pending review of the revised report.</p>	<p>The Revised Report was updated to reflect NDEP's acceptance of NERT's May 13, 2022 response. Specifically, new text clarifying the use of the term DDx is included in Section 2.1.5.1. In addition, the isomers included in the DDx calculation are also discussed in the uncertainty assessment (Section 4.7.5).</p>	<p>A general discussion of the uncertainty associated with not analyzing 2,4'-isomers in all the samples has been added as Section 4.7.5. However, this discussion should be expanded based on the data presented in Table D-7. For instance, it is fairly straight-forward to note that 2,4'-DDE was detected in 16 of the 36 samples in which it was analyzed. In those 16 samples, 2,4'-DDE comprised between 12% and 45% of the reported</p>	<p>The Revised Report has been updated to address NDEP's 6/8/23 comment. Specifically, a sensitivity analysis was conducted to determine the potential underestimation of risk from the exclusion of 2,4'-isomers in the Operations Area and presented in Section 4.7.5. This analysis included an upward adjustment of total DDx concentrations in samples that were not analyzed for 2,4'-DDE. Revised summary statistics were calculated, and a limited</p>

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	<p>Revision 1 of the OU-1 Refined SLERA Report, will also be clarified to indicate that DDx is the sum of available isomers (2,4'-DDD, 4,4'-DDD, 2,4'-DDE, 4,4'-DDE, 4,4'-DDT) and that the variability in the isomers will be addressed as an uncertainty in the uncertainty assessment. In addition, a new uncertainty discussion will be added to the Revision 1 of the OU-1 Refined SLERA to explain that the variability in the DDx isomers is related to the study designs that occurred over time and discuss the potential underestimate of risk via the sum of DDx given the lack of isomers at any particular location.</p>			<p>DDx total. This provides a quantitative indication of how much DDx totals could be underestimated by not including 2,4'-isomers.</p>	<p>food web model using the most highly exposed organism was completed to quantify the potential underestimation from not analyzing 2,4'-DDE. Note that 2,4'-DDT was not analyzed in any samples and 2,4'-DDE was measured in 7 samples, but never detected; therefore, a quantitative analysis of potential underestimation of risk from these 2 isomers is not possible. Outcomes of this analysis were added to the revised report in Section 4.7.5.</p>
<p>27. Specific Comment #27: Section 5, SLERA Conclusions As noted in comments above, the report states that general statements about risk to reptiles can be made. No such general statements about potential</p>	<p>General statements about the potential risks of chemicals in the Operations Area and Parcel E to reptiles will be added to the risk characterization and risk conclusion sections in Revision 1 of</p>	<p>The proposed revisions are acceptable, pending review of the revised report</p>	<p>The Revised Report has been updated to reflect NDEP's acceptance of NERT's May 13, 2022 response. Specifically, statements about risks to reptiles have been included in Section 4.6.2.7 and a new uncertainty section</p>	<p>Reptiles are only mentioned in Section 5 Conclusions as part of the sentence that states "Overall, the OU-1 Refined SLERA showed that most chemicals are not present at</p>	<p>The Revised Report has been updated to address NDEP's 6/8/23 comment. Specifically, text was added to Section 5.3 as requested to indicate that the science to assess ecotoxicological risks to reptiles is not developed enough to draw</p>

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<p>risk to reptiles are included in the Conclusions section. Please address accordingly.</p>	<p>the OU-1 Refined SLERA Report.</p>		<p>(Section 4.7.7) that summarizes the limitations with extrapolating potential impacts to reptiles using results for birds and mammals.</p>	<p>concentrations that would pose unacceptable risks to plants, soil invertebrates, birds, mammals, and reptiles.” This statement is inconsistent with the uncertainty discussion, which concludes that the science to assess ecotoxicological risks to reptiles is not developed enough to draw conclusions regarding potential risks. Please revise the conclusions to state that conclusions about risks to reptiles could not be made due to lack of toxicological information upon which to base the assessment.</p>	<p>conclusions regarding potential risks of OU-1 Refined Area chemicals to reptiles.</p>