



Jared Blumenfeld
Secretary for
Environmental Protection



Department of Toxic Substances Control

Meredith Williams, Ph.D., Director
700 Heinz Avenue
Berkeley, California 94710-2721



Gavin Newsom
Governor

October 27, 2020

Greg Haet, P.E.
EH&S Associate Director, Environmental Protection
Office of Environment, Health & Safety
University of California, Berkeley
University Hall, 3rd Floor, #1150
Berkeley, California 94720
Email: gjhaet@berkeley.edu

Dear Mr. Haet:

The Department of Toxic Substances Control (DTSC) received the Draft *Mercury Fulminate Area Removal Action Implementation Summary Report* (Report), dated September 30, 2020, for the University of California Berkeley, Richmond Field Station site located at 1301 South 46th Street, Richmond, California. The Report was prepared by Tetra Tech Inc. on behalf of the University of California and discusses and documents the removal action that was completed at the Mercury Fulminate Area (MFA) in January 2020. The removal action consisted of excavating and removing approximately 4,600 tons of mercury-contaminated soil for disposal as a California hazardous waste and 54 cubic yards of RCRA hazardous waste. In addition, 4,125 gallons of contaminated storm water and groundwater were removed for disposal as California hazardous waste. The removal action was implemented in accordance with the Removal Action Workplan approved in July 2014. DTSC has reviewed the Report and has the following comments.

1. Section 2.2.1, Background, page 4: The second to the last paragraph in this section states that mercury was found under Building 125 (former California Cap Company Building 24, west of Building 110) in the 1950's. The building was later moved to its current location between Buildings 116 and 118. The paragraph also states that UC Berkeley has "identified this area for potential future remediation to remove residual mercury-affected soil." It appears from the figures that the original building location was remediated as part of the MFA removal action. However, this paragraph needs to be revised to specify the area requiring remediation in order to remove ambiguity, i.e., the original location of Building 125 or its current location.
2. Section 3.3., Pilot Study 2:

- a. Vapor Emissions Evaluation: This section discusses “Excavation A”, which is not depicted on Figure 5. Indicate the proposed location of Excavation A and include an identifier that it was not included in the pilot study.
 - b. Field Conditions: Clarify that mercury vapors increased as the air temperature increased.
3. Section 3.4, Updated Removal Action Approach, page 10:
 - a. State in the text the type of mean (e.g., arithmetic) that was used to calculate the 95% UCL.
 - b. Include in the text that the cleanup goal in the RAW is based on the calculated 95% UCL value of the samples representing soil remaining in place and the rationale for leaving soils in place also considered the potential exposure to receptors. Also state whether elemental mercury was observed in any of the samples representing those areas where soils were left in place.
4. Section 4.3.2, Excavation, page 16: This section states that a storage tank constructed of steel-reinforced redwood beams was found at the bottom of Cells 7 and 8, and investigation found that the interior appeared to be backfilled with native materials and no evidence of stored mercury fulminate was found. Describe what was done with the tank (e.g., left in place, removed, etc.) and how it was determined that no mercury fulminate was present in the soils.
5. Section 4.12, Deviations, first bullet, page 22:
 - a. Clarify the deviation to the excavation cells near the new truck ramp. The text states changed boundaries for Cells 1, 6, 7, 8, 10, 12 and 21 were made and Cell 9 was eliminated due to the truck ramp. For example, were the boundaries changed to accommodate early installation of the ramp, but the extent of the excavation remained consistent with the RAW as modified by the pre-excavation sampling? In addition, include on one of the figures the location of the truck ramp.
 - b. Page 23, third bullet: Briefly explain the rationale for increasing the stop work criteria for wind speed from 15 mph to 25 mph.
6. Section 6.1, Particulate Monitoring, Appendix B, Hourly Monitoring Logs for 01.15.2020 show that monitor N.PDR2 had elevated particulate readings while the other monitors did not, including N.PDR2(spare). The readings and any actions taken should be discussed in the text of Section 6.1.
7. Section 6.2, Mercury Vapor Monitoring:
 - a. Add to the comments section of the table in this section the excavation area identifier.
 - b. State whether the vapor monitor alarm only sounded on January 17, 2020.

8. Section 8.3, Results and Section 9.2, Confirmation Sampling and Results: Clarify in these sections that while the 95% UCL concentration was calculated for arsenic, the comparator for meeting the remedial goal is based on the background value. The soil samples that exceed the background concentration should be identified along with the location and depth of the sample. Multiple lines of evidence should be used to determine whether the remedial goal was achieved and discussed in the text.
9. Figure 3, Mercury Fulminate Area: As Former California Cap Company Building 24 is discussed in Section 2.2.1, indicate its location on this figure.
10. Figure 4, Proposed Excavation Boundaries: Indicate on this figure the original cell numbers as they are discussed in the text.
11. Figure 13, Locations of Samples Above Cleanup Goals and Figure 14, Locations of Samples Above Cleanup Goals Below Excavation Area: Specify in the legend or title what chemical is represented on the figure.
12. Table 6, Post-Removal Action Soil Sampling- Statistical Summary: This table includes among other data, the 95UCL calculation. Include on the table or another table the statistic that were used to calculate the values.
13. Table 7, Post-Removal Action Soil Sampling – Metals Summary: As the samples included in this table are identified on figures found in several different reports, include a figure(s) that identifies the location of these samples.
14. Table 10, Post-Removal Action Soil Samples Above Mercury Cleanup Goal: The headers on two of the columns on this table are “Outside MFA Excavation” and “Beneath MFA Excavation in Groundwater”. Sample locations, such as MFA-CELL03-W1B-R1B are identified as Outside MFA Excavation. DTSC recommends that samples that are side-wall confirmation samples should be identified either by a footnote or adding an additional column to the table.
15. Appendix A – Photolog: The photographs provided document the excavation work that was conducted at the site. Please add the excavation cell number where appropriate in each of the photographs provided where not previously identified.
16. Appendix D: clarify why there are two spreadsheets calculating the 95% UCL for BAP EQ (EPA). [Page 778 and 812 of the PDF file].

17. Attachment 3, Piezometer MFA Abandonment and Replacement: Please ensure that the final/signed Contra Costa County Environmental Health Division Well Permits are provided in the revised document.
18. Attachment 7: Waste Manifests:
 - a. Please provide new copies of manifest numbers 020083562 JJK and 020083565 JJK. Both manifests appear on page 2870 of the PDF file and the bottom portions of the manifests are missing.
 - b. Page 2973 of the PDF file includes a letter from Waste Management stating a change was made to a manifest. Please identify the manifest number.

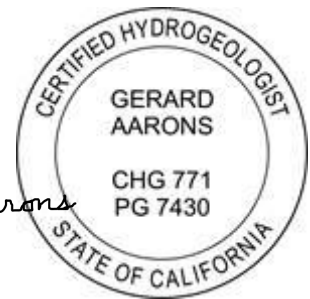
If you have any questions, please contact Lynn Nakashima via email at Lynn.Nakashima@dtsc.ca.gov.

Sincerely,

Lynn Nakashima

Lynn Nakashima, Project Manager
Project Manager
Site Mitigation and Restoration Program
Department of Toxic Substances Control

Gerard F. Aarons



Gerard F. Aarons, PG, CHG
Senior Engineering Geologist
Site Mitigation and Restoration Program
Geological Services Branch

cc: (via email)

Alicia Bihler
University of California, Berkeley
Environment, Health & Safety
abihler@berkeley.edu

Jason Brodersen, PG, QSD
Tetra Tech, Inc.
Jason.Brodersen@tetrattech.com