

27 June 2008
Project 4630.01

Barbara Cook, P.E.
Northern California Coastal Cleanup Operations
Department of Toxic Substances Control (DTSC)
700 Heinz Avenue, #200
Berkeley, CA 94710-2721

Dear Ms. Cook:

Subject: Historical Review of Radiological Uses
Campus Bay Site
Richmond Southeast Shoreline Area
Richmond, California

Dear Ms. Cook:

The Community Advisory Group (CAG) Toxics Committee and Treadwell & Rollo technical support team for the Richmond Southeast Shoreline Area (RSSA) Community Advisory Group (CAG) have reviewed the following document related to the Campus Bay or Zeneca/former Stauffer Chemical Site:

- *Historical Review of Radiological Uses at the Campus Bay Site in Richmond, California*, dated April 2008, prepared by Alpha Beta Gamut (ABG) and Exponent, Inc..

This letter transmits the CAG and Treadwell & Rollo technical support team comments on the Historical Review of Radiological Uses document (HRRU).

Based on the apparent lack of Zeneca records on the radiological activities at the Site, the fact that queries originated from interviews of former employees, and that CAG members are still finding more information than is available at the AEC/DOE FUSRAP website regarding the uranium and beryllium work at Stauffer which are not included in the HRRU, we ask that it be verified that Zeneca and Stauffer have provided all records regarding radiological uses at the site for review and inclusion in the HRRU and a more thorough records search be conducted to verify that existing information is known. For example, the CAG recently found a paper by chance through another document search which details previously undisclosed uranium melting projects took place in Building 80 aka the Beryllium Building: *Electron Beam Melting of Uranium*, by H. M. Eikenberry Of Technical Division, National Lead of Ohio, dated 14 June 1963, Contract No. AT(30 -1) -1156. The entire document with multiple photos describes melting uranium event(s) in the Stauffer, Richmond, Beryllium Building not presented in the HRRU. The document is 29 pages long and can be viewed at <http://www.osti.gov/energycitations/servlets/purl/4704067-VhfESH/>. If the CAG can easily find more information, we can not presume a complete historical review of radiological uses has been presented or that the Stauffer/Zeneca records have been fully reviewed.

Steve Bump of Dade Moeller used the data from the Eikenberry paper to perform a rough calculation of potential release from the Uranium melting project and estimated a potential release of 11.4 pounds versus the 4.4 pounds from the trip reports from National Lead, and the 0.1 pounds assumed by Exponent and ABG. We consider these numbers to be in reasonable agreement with the National Lead

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number as he was using percentages and they were using weights. We are not sure how Exponent and ABG got their number.

Please provide more detail on the operations that took place at the Beryllium Laboratory or Former Building 80. The attached aerial photograph (looking south) was provided to the CAG by Bill Marsh of Edgcomb Law Group and is undated but appears to be from the 1950s to 1960s. Building 80 is noted and can be seen at the northeast corner of Seaport Avenue and South 47th Street. The taller Building 86/87 is on the north side of Seaport Avenue between South 47th and South 48th Streets and appears to be the same location as Building 86/87 on LFR's Figure 6 from the HRRU. Using LFR's Figure 6 from the HRRU and Figure 1-1 from the *Gamma Survey and Soil Sampling Results* by Tetra Tech dated 25 April 2008, we have labeled the known buildings near Building 80 or the Beryllium Laboratory and have also approximately located the Site area that had increased gamma scan levels. The higher-than-surrounding area gamma scan shadow appears to be covered by a lower building (brighter white) next to or adjoining taller Building 86/87. The higher-than-surrounding area scan shadow seems to be more closely aligned with Building 86/87 than Building 80. There are a number of other structures in the vicinity, including some large tanks that are not identified. The history on Buildings 86/87 indicates it was the tantalum processing pilot plant and that process is described in the HRRU. Given that ore was not processed, or at least there was no history of ore processing, it is unlikely that would be the source of high gamma background levels. What operations took place in the nearby unidentified buildings? Please provide complete operational histories and descriptions of each structure identifiable in the photograph.

Please provide a clear history of the Beryllium Laboratory or Former Building 80 (in which beryllium and uranium metal were handled) operations and demolition. Why was a second building given the number 80 and then later examined for residual radioactivity due to uranium melting? Who directed MACTEC and other radiological consultants to inspect the buildings that were not used for uranium melting for residual radioactivity due to uranium melting? We are concerned that there is no record of a radiation survey prior to demolition of the Beryllium Laboratory. The interviews did indicate the building was decontaminated due to the beryllium contamination prior to demolition which would presumably also have removed any residual uranium. Was this done in conjunction with an AEC/DOE inspection? Was the California Department of Public Health Radiological Health Branch involved?

It appears from the answer to question 10.11 in the HRRU that Building 94 was the location where the tantalum metal thimbles were manufactured. Did Stauffer manufacture the tantalum thimbles for the LAMPRE plutonium fueled reactor at Los Alamos? LAMPRE I and LAMPRE II were small experimental reactors that operated for a brief period at Los Alamos. Were the thimbles loaded with fuel at Stauffer? Based on interview 36 where the individual stated they did not have metal working tools at Stauffer, it could be inferred that the capsules were manufactured and filled at Los Alamos. Additionally, there was no mention of any "secret" or high security projects at the facility and the receiving and shipping of plutonium would have been done under very tight controls. However, without more information we can not confirm that only purified metal work occurred and the rest of the work was done at Los Alamos.

Did Stauffer dispose of radioactive liquids in sink/sewer drains? If so, how was this addressed by the California Department of Public Health Radiological Health Branch when they closed the license?

Though its presence may not be related to radiological operations at the Site, residual beryllium contamination is an environmental issue. The Remedial Investigation (RI) was not conducted with knowledge that the Beryllium Laboratory or Building 80 was a source area for beryllium and the question remains as to whether adequate sampling had been conducted to characterize potential beryllium releases. Beryllium is a light metal and exposure via the air pathway is most common. Lung damage has

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been observed in people exposed to high levels of beryllium in the air. About 1 to 15% of all people occupationally-exposed to beryllium in air become sensitive to beryllium and may develop chronic beryllium disease (CBD), an irreversible and sometimes fatal scarring of the lungs. Beryllium has been found in at least 535 of the 1,613 National Priorities List sites identified by the Environmental Protection Agency <http://www.atsdr.cdc.gov/tfacts4.html>. Were there reports of CBD disease among Stauffer employees or nearby residents?

The existence of Beryllium Laboratory was not known when the Lot 3 Remedial Investigation was conducted. The Lot 3 RI metals in soil data indicates that two soil borings were advanced (Figures 10, 11, and 12a) near the Beryllium Laboratory location for sample collection and metals analyses with the following beryllium detections: Lot 3-25 (3.5 feet, 8.5 feet, 10.5 feet at 0.18, 0.34, and 0.46 mg/kg, respectively) and AO6-11 (1.5 feet and 3.5 feet at 0.61 and 0.25 mg/kg, respectively). The maximum concentrations detected for various soil depths at the site ranged from 0.73 to 1.9 mg/kg (RI Tables 19 to 21). These concentrations are well below the 150 mg/kg residential and 1,700 mg/kg commercial screening levels and a site specific background level (RI Table 4A) or a site-specific goal (HHRA Table 12) were not developed. However, borings Lot 3-25 and AO6-11 were not advanced to delineate potential beryllium releases from the Beryllium Laboratory. LFR will be collecting soil samples for radiological analyses from one location within (R-5) and one location outside of (R-6) the footprint of the former Beryllium Laboratory. We request that soil samples from these locations also be analyzed for total beryllium using the same sample preparation and analytical methods used in the RI to assess whether higher beryllium concentrations are present in soil in the area. Samples previously collected to establish background uranium levels in soil could also be tested for total beryllium and used along with the RI data to establish a beryllium background level for comparison purposes.

We know that CSV's Memorandum of Agreement with DTSC to provide technical and administrative assistance to the CAG represents a substantial contribution by a private company to the RSSA CAG. We appreciate that CSV and DTSC have facilitated the CAG's participation in this important decision-making process. The CAG and CSV both need assurance that public health is being protected during this important characterization and cleanup process. The CAG appreciates the cooperative and collaborative process that CSV and the Department have embraced. We look forward to working with you toward a mutually beneficial outcome for the Site. Please call with any questions.

Sincerely yours,
TREADWELL & Rollo, Inc.



For
Michael Esposito, PhD
Chair, CAG Toxics Committee



Dorinda Shipman, PG, CHG
Principal

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Cc: Richmond Southeast Shoreline Area Citizen's Advisory Group

Doug Mosteller, Cherokee Investment Partners, LLC
Bill Marsh, Edgcomb Law Group
California Department of Toxic Substances Control
Tracy Barreau, Tracy.Barreau@cdph.ca.gov
Jeff Wong, Jeff.Wong@cdph.ca.gov
California Department of Toxic Substances Control
Rick Brausch, RBrausch@dtsc.ca.gov
Lynn Nakashima, LNakashima@dtsc.ca.gov
Diane Fowler, DFowler@dtsc.ca.gov
Nancy Cook, NCook@dtsc.ca.gov



Approximate North

Notes:

1. While the oblique aerial photo is undated, it was likely taken during the 1950s or 1960s.
2. The areas of increased gamma exposure measurements are not rigorously scaled (nor can they be against this photo) and should be considered approximate.
3. The areas of increased gamma exposure were identified as greater than surrounding site gamma scan results based on soil sampling performed by TetraTech on behalf of Zeneca, Inc. and Cherokee Simeon Ventures, I, LLC (TetraTech, 2008, Gamma Survey And Soil Sampling Results For The Zeneca/Former Stauffer Chemical Company Site , Figure 1-1).

Undated Historical Aerial Photo Showing Building Numbers and Area of Increased Gamma Exposure

Treadwell&Rollo