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September 4, 2009

Sharon R. Cotner
FUSRAP Program Manager
Department of the Army
St. Louis District, Corps of Engineers
8945 Latty Avenue
Berkeley, Missouri 63134

Re: Mallinckrodt Comments on Remedial Investigation Work Plan for the Inaccessible Soil Operable Unit at the St. Louis Downtown Site, St. Louis, Missouri, Revision B, Dated May 14, 2009

Dear Sharon:

Mallinckrodt has discussed submission of our comments with Roy Parks and received an extension of time to provide our response. Mallinckrodt appreciates the opportunity to comment on the above referenced document.

Mallinckrodt has the following specific comments including some clarifications and corrections where the USACE information appears inaccurate.

1. Section 3.5.2.1

The Conceptual Site Model should include the exposure pathway evaluation of the Current/Future SLDS Maintenance Worker for Inaccessible Contaminated Soils. Mallinckrodt maintenance personnel have responsibilities for repairing sewer and water lines.

2. Section 4.5.1

Paragraph 3 - Sometime prior to 1927, the City of St. Louis constructed a new Salisbury Street sewer. This sewer ran parallel to but slightly north of the existing original Salisbury Street sewer. It was also several feet higher in elevation than the original Salisbury Street sewer. Both the deep and shallow sewers flowed east and discharged directly into the Mississippi River through discharge structures. In the 1970's the original Salisbury Street sewer collapsed forcing the plant to begin discharging to the City's Salisbury Street sewer.

Paragraph 7 -- There was no C-T processing performed in Plants 6 & 7 that would have discharged radioactive effluent. The text misleads the reader by defining Mallinckrodt commercial work as "C-T processing". C-T activities in Plant 6&7 would more accurately be described as C-T support activities.

3. Section 4.5.1.1

The MED/AEC operations section should provide details of the operations that occurred in Plant 1 similar to Section 4.5.1.2. Plant 1 laboratory 25-2 was used for development work and a pilot plant located in Building K was used to extract Radium using ore concentrates.

4. Section 4.5.1.2

Clarify the significance of the 1980 sewer drawings that show wastewater flowing to the south through the 15 inch sewer between MH-40 and MH-44, and also between MH-34 and MH-37. Did the wastewater then discharge to Destrehan Street sewer? Did the sewer line continue and connect to MH-38 and MH-39 along the Destrehan Street sewer? The text as written is unclear and as such if the discharge flow is unknown, the text should reflect that uncertainty.

5. Section 4.5.1.3

Text should be added to the **MED/AEC operations** paragraph regarding the "Acid Sewer". The wet processing area in Building 104 contained sumps that were designed to either discharge to collection tanks or the sewer system. Mallinckrodt understands that due to acid damage to the sewers from Building 104 a separate acid sewer line was installed to carry acidic wastewater to the Destrehan Street sewer via MH-19. This was a 10 inch VC line that was located on the north side of Building 104. Discharges from the sumps gravity flowed to the east to a manhole near Building 112 where flow turned to the south discharging into the 30 inch Destrehan Street sewer main at MH-19.

Text should be added for clarification. Buildings 116 and 117 were used to receive and store containerized C-T feed materials and drummed URO waste inside the buildings. Feed materials were received at the plant in burlap bags which were then transferred into drums and/or boxes for storage. This feed material was so valuable that after emptying the burlap bags in the processing area they were incinerated for the purpose of recovering residuals on the bags. The ashes from the incinerator were collected and used in the C-T process. There were no commercial processing operations conducted in buildings 116 and 117 that would have generated wastewaters.

6. Section 4.5.1.4

Mallinckrodt's documentation of the MSD interceptor sewer line located beneath Hall Street running up to Bissell Point Treatment Plant indicates that the line is 96 in x 96 in at a depth of 65 feet.

7. Section 4.5.1.5

Correct the text regarding the storage of C-T feed materials. Historical documentation indicates that only Buildings 704 and 705 were used to receive and store containerized C-T feed materials and unreacted ore inside the buildings not 700, 706 and 708 (Mallinckrodt, 1994). Feed materials were received at the plant in burlap bags which were then transferred into drums and/or boxes for storage. This feed material was so valuable that after emptying the burlap bags in the processing area they were incinerated for the purpose of recovering residuals on the bags. The ashes from the incinerator were collected and used in the C-T process. There were no commercial processing operations conducted in buildings 704 or 705 that generated wastewater and no C-T operations at all in Buildings 700, 706 and 708.

Mallinckrodt disagrees with the text regarding the historical timeline for the installation of the 42" diversion sewer that routed discharges from Plants 6 & 7 up to the Salisbury Street lift station. The construction drawings prepared by Sverdrup & Parcel, Inc for the USACE dated December 12, 1960 provides construction details for the new 43" diversion sewer. The drawing was revised on 1/10/61 to reflect "Addendum No. 1", again on 8/21/61 to reflect the intersection alignment for Bremen sewer and 1960 Traverse and then again on 2-4-64 to revise the drawing as an as-built. Mallinckrodt believes these drawings depict the construction of the diversion channel in the early months of 1961.

As documented in November 1961 Destrehan Street Plant Decontamination report, decontamination methods used to remove gross contamination within the Destrehan Street Plant included:

- Broom sweeping
- Water rinsing using fire hydrants at maximum pressure
- Dry sandblasting to clean concrete and steel surfaces, followed by a water rinse
- Pneumatic hammer chipping where contamination penetrated deep into concrete
- Spot cleaning of certain surfaces with and acid-detergent solvent.

All residues from the decontamination activities reportedly were flushed to the sewers. Residues from these decontamination activities were likely to have drained through the 42 inch diversion sewer making that sewer potentially impacted by MED/AEC materials.

Furthermore, as you know, even after the Destrehan Street Plant Decontamination, MED/AEC contamination remained at the SLDS site. There has been residual MED/AEC contamination in soils and on building structures to the present day. MED/AEC contamination existed in Plant 6

and 7 in soils, on structures and roofs specifically Buildings 704, 705 and 706 and old sewer lines after the 42 inch diversion sewer was put into service thereby creating the potential for MED/AEC contamination to be discharged to the combined storm sewer system at the plant discharging to the diversion sewer. Over the years stormwater runoff would have carried residual MED/AEC contamination to the plant sewers that discharge to the 42" diversion sewer.

To further support our position, Mallinckrodt would like to point out the impact from MED/AEC activities at the vicinity properties which again support the position the residual radiological contamination from MED/AEC activities remained at SLDS and surrounding sites after the initial decommissioning of the Destrehan Street Plant was completed.

As stated in the June 1990 Federal Facilities Agreement (FFA) governing USACE activities at the site, areas and/or structures which could have radiological waste resulting from or associated with uranium manufacturing or processing activities and other comingled contamination are the responsibility of USACE. Therefore, any investigation and/or remediation of the 42 inch diversion sewer is the responsibility of the USACE and should be included as part of this work plan.

Mallinckrodt has consistently taken the position that the sewers beyond the Plant 7 ponds were co-mingled and as such subject to investigation and remediation by USACE. The 42" diversion sewer should be considered co-mingled and therefore evaluated in the Remedial Investigation Work Plan for the Inaccessible Soil Operable Unit.

8. Section 4.5.1.5

Information regarding the remediation of Plant 4 (i.e., City Block 1201) needs to be added. Do the sewer lines from the Plant 4 processing buildings still exist in the subsurface or were they removed during the remediation in the 1990's. DOE activities should be documented and referenced as part of this plan.

Mallinckrodt appreciates the consideration given by the Corps on the comments submitted.

If you have any questions regarding this matter, please contact me at 314-654-5838.

Sincerely,



Karen M. Burke
Director Environmental Remediation

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