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STATE OF MISSOURI Jeremiah W. (Jay) Nixon, Governor Mark N. Templeton, Director

DEPARTMENT OF NATURAL RESOURCES

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July 31, 2009

Ms. Sharon Cotner
FUSRAP Program Manager
U.S. Army Corp of Engineers
8945 Latty Avenue
Berkeley, MO 63134

RE: Comments pertaining to the Remedial Investigation Work Plan for the Inaccessible Soil Operable Unit at the St. Louis Downtown Site. FUSRAP, St. Louis, MO. Dated May 14, 2009.

Dear Ms. Cotner:

The Missouri Department of Natural Resources has finished our review of the above referenced document. Our comments are included as an attachment to this letter.

Thank you for giving us the opportunity to review and comment on this document. If you have any questions or need further clarification, please call me at (314) 877-3251. Address any written correspondence to my attention at 917 N HWY 67, Suite 104, Florissant, MO 63031.

Sincerely,

HAZARDOUS WASTE PROGRAM

Tiffany D Burgess

Tiffany D. Burgess
Remediation and Radiological Assessment Unit
Federal Facilities Section

TB:dd

Enclosure

c: Mr. Dan Wall, Project Manager, U.S. Environmental Protection Agency, Region VII
Mr. Roy Parks, U.S. Army Corps of Engineers
Mr. Ron Raugh, U.S. Army Corps of Engineers

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Comment Number	Page, Paragraph, Sentence	Quote	Comment
		General	
1	General	N/A	Please add a caveat acknowledging that remediation activities at some properties have not yet been completed and the status in this work plan may change upon completion; and these changes may be documented in future addendums.
2	General	N/A	The Missouri Department of Health and Senior Services and our staff are still reviewing the assumptions made in the development of your screening levels for structures. The goal is to better understand the assumptions made here so as to be prepared for the USACE's eventual development of derived concentration guidelines within subsequent documents. Meanwhile, this review may prompt further questions or comments to which we will request your assistance. We appreciate the assistance your staff has provided to us in the past regarding similar discussions and look forward to working with them regarding this matter as well.
		Section 1.0: Site Background	
3	Page 5, 10 and 70, sections 1.3, 2.2, and 4.1.4.1, respectively	N/A	Please explain in the text the reason for Plant 7W being excluded from this document. There is plenty of evidence for historic sources of contamination. If this refers to the determination of Mallinckrodt commercial waste versus MED/AEC waste, then please state this. Additionally, how will potential inaccessible soil from MED/AEC operations be addressed when the property is eventually remediated?

Section 2.0: Operating History			
4	Page 9	N/A	For clarity, we recommend the document mention that Covidien currently owns the Mallinckrodt facility.

	Section 3.0: Remedial Investigation Methodology		
5	Page 22, section 3.1.1, first paragraph Page A-2, section A-1.1.2, third paragraph	*A comprehensive ecological risk assessment is not being performed as part of the ISOU BRA because an ecological risk assessment was previously conducted in support of the 1998 ROD for the 1993 BRA.* *In addition to a quantitative human health risk assessment, the 1993 BRA included an ecological risk assessment that qualitatively evaluated potential effects from contamination at the SLDS.*	There have been numerous changes to the ecological risk assessment process since the 1993 BRA. The Department suggests following the most recent EPA ecological risk assessment guidance for superfund sites. This is currently found in the EPA guidance document, "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments" (EPA 540-R-97-006).
6	Page 23, section 3.1.1, paragraphs 4-7 Figure 3-1 Pages A-18 to A-19	*The potentially complete and significant ISOU exposure pathways for the current/future SLDS construction worker and the current/future SLDS Maintenance worker are described.*	It appears that inhalation of particulate and gaseous (i.e., radon) emissions from contaminated drain/sewer sediment weren't considered as an exposure pathway; this pathway does not appear in the evaluations for construction workers or maintenance workers. Because Ra-226 and U-238 are present in the drain/sewer sediment, please describe the rationale or methodology reference for why this pathway is not considered in the conceptual site model.

7	Page 24, section 3.1.2 PCOCs	*NA*	The Department believes the potential for VOCs beneath buildings exists and should be investigated. We recommend the USACE use field screening instruments on samples collected beneath buildings. If hits are observed, we recommend the USACE conduct laboratory sampling. Inclusion of VOCs as a PCOC is also requested.
8	Page 28, Section 3.4.1.1, second paragraph, first two sentences	*The initial vertical boundary for sampling an inaccessible soil area will be 1.8 m (6 ft) at all areas, except Plant 2, 6, 7; the Mississippi River levee. The vertical boundary was selected based on accessible soil data that showed the depth of contamination extending to 0.6 m bgs (2 ft) at most plant and VP locations (DOE 1995, and the 1998 ROD, which defined the removal of accessible soil to a 4- to 6-ft depth to be protective of human health [USACE 1998a]). The vertical boundaries at Plants 2, 6, and 7 will be greater because the vertical extent of contamination was 6.9 m (23 ft), 5.4 m (18ft), and 3 m (10 ft), respectively (DOE 1995; USACE 1998a).*	Rather than merely using the 1998 ROD and 1995 DOE documents to confirm the selection of sampling depths, please also use information obtained during the remedies. The concern we have is that extent of contamination typically was greater than initially planned and did occasionally exceed 6' in depth (even in areas not confined to the Mississippi River levee, Plant 2, 6, or 7). Our recommended change in verbiage for this section would be "All sampling locations will be conducted to a depth no less than 1.8 m (6 ft). Locations to which a greater depth is already planned have been identified from previous investigations and nearby remedies. These areas and the corresponding depths are shown within table 5-1. Furthermore, if either the lab results or field screening tools indicate contamination exists at the bottom of the borehole, then further drilling will be required. The goal is to bound the extent of contamination."
9	Page 28, Section 3.4.1.1, second paragraph, first two sentences	N/A	Since many of these boreholes will be made through the floor or footings of structures, please specify the interface at which the ground surface is declared for purposes of measuring sample depths (i.e., soil).

10	Page 28, Section 3.4.1.1, second paragraph, last three sentences	*Therefore the sections of RRs (DT-9 and DT-12) and roadways (Mallinckrodt, Hall, and Destrehan Streets) adjacent to these properties will also be initially sampled to 1.8m (6 ft). The vertical boundary for the inaccessible soil beneath the Mississippi River levee will extend to a depth of 50 ft (from the top of the levee) because the original soil that may be impacted is located at depths of 25 ft bgs. The vertical boundary at each specific sample location will be increased if elevated gamma radiation readings are detected during sampling.*	Since this section pertains to soil boundaries for structures, these sentences should be included within subsequent sections related to roadways, RRs, and sewers.
11	Page 28, section 3.4.1.1, last paragraph, line 11	N/A	Replace comma with period.
12	Page 29, Section 3.4.2 Buildings and Structures, 3rd sentence.	*Initially, each exterior, interior, or rooftop area of a building or structure will be surveyed based on the potential for contamination.*	Please include within this section a brief explanation of the rationale used to decide whether a structure is potentially contaminated and thus necessitating an investigation.

13	Page 29, Section 3.4.2 Buildings and Structures, 3rd sentence.	N/A	Very little information is provided within this document regarding surveys to be conducted of the individual buildings. We realize the already large scope of this document is one of the limiting factors. We therefore recommend this section be amended to include a statement saying that "Surveys of individual structures, and occasionally subparts of a structure, will be described in their own work plans or descriptions and will be submitted to regulators, landowners, and tenants for review." We do anticipate some structures needing a survey of their air handling and ventilation systems in addition to their structures.
14	Page 29, Section 3.4.2, third sentence.	N/A	This section needs to explain that though surficial contamination is mentioned in this document, it is only the soils under the structure that are considered inaccessible. Contamination found upon the structure or related equipment will be remediated.
15	Page 30, Table 3-2 Screening Level Criteria for PCOCs for the ISOU	N/A	Using screen values based on industrial use scenarios assumes the properties may **not** be releasable for UU/UE. It is our understanding the USACE intends the Vicinity Properties and some portion of Mallinckrodt to be releasable for UU/UE. Please verify our understanding. To ensure all COCs above UU/UE concentrations are properly characterized, we recommend selecting more appropriate screening values.

16	Page 45, section 3.7.6, Pages 55-112, section 4.0, existing data evaluations for buildings within individual properties, areas or property groups Appendix F figures	*The preliminary evaluation for what contaminated surfaces will be investigated during the building scoping surveys as discussed in section 3.4.6 has been made for all properties. The information is presented in the existing data evaluation narrative for buildings within individual properties, areas, or property groups in Section 4. The buildings for any type of scoping survey are designated on Appendix F Figures.*	We ask that you provide a statement explaining that the scoping surveys for specific surfaces will be provided in future work plan submittals for individual buildings or groups of buildings.
Section 4.0: Area-Specific Evaluation of Sampling Goals			
17	Section 4.0	N/A	Please note that although this document includes the entire SLDS and SLDS VPs, not all final documents (i.e., PRARs, FSSEs) have been completed for regulator review. Therefore, the Department may comment on the need for investigation of additional inaccessible soils once these documents are completed.
18	Page 56, section 4.1.1.1, 3 and 7	N/A	Paragraph 3, sentence 2 states that, "Two main areas inside building 25 were used to develop and conduct uranium processing activities for MED/AEC paragraph." Paragraph 7 goes on to say, "Plant 1 was not considered a uranium ore processing area. Therefore, data evaluations for the ISOU for Plant 1 will address radiological PCOCs." Since portions of Plant 1 were used for uranium ore processing operations, this statement needs to be amended. Subsequently, non-radiological PCOCs should be included or other reasons provided for their exclusions.

19	Page 56, section 4.1.1.1, paragraph 5, sentence 2	N/A	This sentence is redundant since the exact information is repeated in sentence three and four of paragraph five. Suggest removing sentence two.
20	Page 59, section 4.1.1.3, paragraph 3, line10	N/A	Should be building X not building L.
21	Page 62, section 4.1.2.2, last paragraph, line 2	N/A	Remove IOUs
22	Page 64, section 4.1.2.3, second paragraph, line three and four	N/A	Replace "likely potentially impacted" with either "likely impacted" or "potentially impacted"
23	Page 71, section 4.1.4.1, fourth paragraph	*The only buildings that remain are the Hazardous Material Handling Building in Plant 7N and the Water Treatment Plant in Plant 7S.*	The narrative does not correspond with Figures E-5, E-10 and G-4.
24	Page 73, section 4.1.4.3, first paragraph, last sentence	*The structure is scheduled for demolition, which makes the underlying soil accessible and, therefore, the soil south of and beneath the Hazardous Materials Handling Building will be remediated as accessible soil under the 1998 ROD and does not require soil sampling as part of the ISOU.*	Run-on sentence. Additionally, please state that the structure is scheduled to be turned over to the USACE by Covidien for demolition and remediation of soils.
25	Page 74, section 4.1.5.1, paragraph 2, line 9 and 11	N/A	"Westerheide Tobacco" used in line 9 and in line 11 referred to as "Westerheide Store." Suggest keeping the name consistent either "Westerheide Tobacco" or "Westerheide Tobacco Store."
26	Page 75, section 4.1.5.2, paragraph 4, line 6	N/A	"Remaine" should be written "remain"
27	Page 76, section 4.1.5.3, paragraph 5, line 2	N/A	Replace "exceeded" with "exceed"

28	Page 76, section 4.1.5.3, paragraph 5, line 18	N/A	Remove space in DT-3
29	Page 77, section 4.1.5.4, last paragraph and Figure F-5	N/A	Paragraph states that buildings 62, 63 and 66 are potentially impacted and will be investigated via a scoping survey. This does not match figure F-5, which shows buildings 62 and 63 proposed for a scoping survey.
30	Page 78, section 4.1.5.4, first paragraph, line 1	N/A	Font size for "and" is smaller
31	Page 78, section 4.1.5.4, paragraph 6 and 7	N/A	Suggest changing "non-numbered" to "unnumbered"
32	Page 80, section 4.1.6.3, paragraph 1, line 6	N/A	Replace "as" with "was"
33	Page 80, section 4.1.6.3, paragraph 1, line 7	N/A	Remove "e" from 49
34	Page 80, section 4.1.6.3, paragraph 2, lines 3-8	N/A	States that the two historical samples (DE1380N1130 and DE1397N1050) contained SOR > 1.0 for accessible soil. The next sentence then states, "...except for the two samples associated with inaccessible areas". Please explain whether these two samples are associated with accessible or inaccessible areas.
35	Page 92	N/A	DT-7 Midwest Waste VP (current location of USACE trailers) is not mentioned in the document, except that it's excluded. According to the PRAR, extensive remediation was conducted at DT-7 and there is an inaccessible soil area located on the eastern edge of the property next to DT-12 (BNSF). If this inaccessible area is located on the BNSF property, then it needs to be mentioned in the BNSF narrative. If this inaccessible area is located on the DT-7 property, then DT-7 needs to be included in the narrative, along with corresponding figures.

36	Page 92, section 4.2.4	N/A	There is no mention of non-radiological PCOCs possibly being present in inaccessible areas, even though non-radiological PCOCs were present at this property as reported by the USACE on numerous occasions during conference calls. The final status of non-radiological PCOCs on DT-8 has never been reported.
37	Page 95, section 4.2.4.3, first paragraph, last sentence	N/A	The word "sample" should be singular.
38	Page 95, section 4.2.4.4, second paragraph	N/A	Tract 1 -- Rooftops on buildings A, B and C should be included with the exterior scans due to the potential for windblown material from the adjacent MED/AEC process buildings.
39	Page 95, section 4.2.4.4 and figure F-11	N/A	Building D is located next to a remediated area and is potentially impacted. Therefore, the building should receive a scoping survey and figure F-11 be updated to reflect this.
40	Page 105, section 4.2.9.1, last paragraph	N/A	Please update the text to indicate that DT-18 (Curly Collins) is currently owned by the City of St. Louis, and the property sits vacant and is fenced.
41	Page 107, section 4.2.9.2, line 2 and Figure D-16	N/A	Please label sample SLD94733 and other sample with SOR >1.0 on Figure D-16.
42	Page 107, section 4.2.9.2, paragraph 1, line 5	N/A	Should read "docks and North" not "docksNorth"
43	Page 107, section 4.2.9.2, paragraph 2, line 3	N/A	Should be Figure D-16 not D-17
44	Page 107, section 4.2.9.2, paragraph 3	N/A	Please mark and label samples taken around DT-18 on Figure D-16.
45	Page 113, section 4.2.11.2, paragraph 4	N/A	States that only two samples collected had SOR > 1.0. However, there are three samples on Figure D-18 with SOR > 1.0. Sample SLD101278 is not mentioned in the narrative. Please address this discrepancy.
46	Page 119, section 4.3.3, second paragraph	N/A	Sample IDs listed in the text should be identified on the corresponding figures.

47	Page 120, section 4.4, last paragraph, last line	N/A	D-11 should be DT-11
48	Page 122, section 4.4.2, last paragraph, line 5	N/A	Space needed between "was" and "defined"
49	Page 128, section 4.4.3.2.5, last paragraph, line 3	N/A	Replace comma with period
50	Page 128, section 4.4.3.2.5, last paragraph, last line	N/A	Explain "initial vertical boundary" or refer to SAG. Will there be additional vertical sampling if contamination is encountered at the 6-foot interval? The Department recommends additional sampling if either the lab results or field screening tools indicate contamination exists at the bottom of the borehole and further drilling will be required. The goal is to bound the extent of contamination.
51	Page 129, section 4.4.3.2.6, paragraph 1, line 3	N/A	Should be "At" not "A"
52	Page 129, section 4.4.3.2.6, paragraph 1, last sentence, Figure D-25	N/A	DT-7 should be mentioned with regard to Angelrodt Street due to the remediation that occurred adjacent to the street.
53	Page 129, section 4.4.3.2.7	N/A	Please discuss the remediation of a unpaved section of Buchanan Street along DT-4S and DT-7 that was previously done when DT-4S was remediated.
54	Page 134, section 4.5.1.3, paragraph 2, line 4	N/A	Add period at end of sentence
55	Page 135, section 4.5.1.5	N/A	The Department suggests creating a separate figure for Plant 4/10 because it's difficult to refer to Figure E-1.
56	Page 138, section 4.5.3.1, first line	N/A	Should be "DPL055, DPL057"
57	Page 138, section 4.5.3.1, paragraph 4	N/A	There is no sample labeled DP100 on Figure E-4 on the northeast corner of Plant 6W. There is a sample labeled DPL100 located on the northeast corner of Plant 6EH. Please reconcile this discrepancy.

58	Page 139, section 4.5.3.4, paragraph 1, line 5	N/A	Figure E-4 has sample GM-2/MH-13 with a SOR > 1.0 symbol (red triangle). Please reconcile this inconsistency.
59	Page 139, section 4.5.3.5	N/A	Figure E-5 is labeled Plant 7N and section is titled Plant 7. Is the existing data evaluated for all of Plant 7 or only Plant 7N?
60	Page 139, section 4.5.3.5, paragraph 2, line 4	N/A	Should be "DPL102" not "DP102"
61	Page 139, section 4.5.3.5, paragraph 2, sentence two	N/A	Suggest writing out the seven samples mentioned in the second sentence, indicating which ones had SOR > 1.0 and < 1.0.
62	Page 139, section 4.5.3.5	N/A	MH-20 is identified as having a SOR > 1.0 on Figure E-10. Since MH-20 is identified on the figure please explain in the narrative the reason MH-20 is not proposed for sampling.
63	Page 139, section 4.5.3.6, paragraph 4, line 2 Figure E-6	N/A	The text uses the label MH-02 while the figure is labeled MH-2. Please make labeling consistent.
64	Page 139, section 4.5.3.6, paragraph 4, line 5	N/A	Please indicate the IDs of the other two samples in the text.
Section 5.0: Field Investigation Sampling and Analysis Plan			
65	Page 147, section 5.3.2, bullet 7	N/A	Please explain where the free water will be drained?
66	Page 149, section 5.4.1 bullet 5	N/A	Spacing between bullets is not consistent.
67	Page 150 to 158. Table 5-1 Proposed Inaccessible Soil Sampling Locations	N/A	Sample depths should be revised based on findings from nearby remedies. See Comment #8 regarding section 3.4.1.1 for more information.

68	Table 5.2, Proposed Building Survey Locations	N/A	Please provide a caveat stating that the actual scoping survey location along with related work plans have yet to be prepared and submitted to regulators, landowners, and tenants for review. We do have numerous questions regarding the proposed survey locations that would best be answered on a building-by-building basis. For example various buildings that existed during MED/AEC operations have exterior rooftop and exterior surveys proposed. Some of these should likely have their interiors surveyed because of potential dust entering the buildings through the ventilation systems. On the other hand, some of the buildings that were adjacent to soil remediation areas are listed as needing exterior and interior surveys conducted. But, rooftops are omitted. We would like to more information regarding the rationalization for this.
Section 6.0: Remedial Investigation Tasks			
69	Page 173, section 6.0, third paragraph, sentence 4	N/A	Remove "evaluate"

Figures and Appendices			
70	Figure 2-1, Inaccessible Areas at the St. Louis Downtown Site	N/A	Either the title is a misnomer or there are some details missing from the drawing. No demarcation is given of areas deemed likely to be inaccessible other than shading given to the buildings. Of these, all the buildings are shaded no matter whether they are within SLDS or not.

71	Figure 2-1, Inaccessible Areas at the St. Louis Downtown Site	N/A	The blue dashed line used to depict ore processing areas, omits plants 1, 10, and 7E. These need to be added according to section 2 of the Record of Decision.
72	Page A-7, section A-3.0, second and third paragraphs	*Therefore, arsenic and cadmium are considered soil PCOCs for the ISOU when investigating inaccessible areas at Plants 2, 6, and 7 and at DT-10.* *Because drain/sewer lines may contain residual materials not previously characterized for metals, these specific metals will be included as PCOCs in the ISOU RI for drains and sewer lines at Plants 2, 6, and 7, and VP DT-10, and the sewer lines downstream of these areas.*	Per section 2.0 of the ROD, include Plant 1 and Plant 4(10). DT-8 (PSC Metals) needs to be included as well due to non-radiological PCOCs being present at this property as reported by the USACE on numerous occasions during conference calls.
73	Figure D-1 and F-1	N/A	The inaccessible area shaded in red south of building X is different than what is in the Plant 1 PRAR. Please reconcile or explain this discrepancy.
74	Figure D-1 and F-1	N/A	Remediation took place around tank 116 located south of building X. Tank 116 is not shown in the figures. Please explain the reason why tank 116 is not included in the Plant 1 narrative, figures and why a scoping survey is not necessary for the exterior of the tank.
75	Figure D-6 and F-6	N/A	Sample DE1380N1130 is written twice on the figure. Additionally, the thick black line indicating the security gate area does not surround the entire property.
76	Figure D-13	N/A	Suggest adding the name of the property after DT-15 to keep consistent with other figures.

77	Figure D-22	N/A	Suggest labeling the figure with "DT-12 (Burlington Northern RR)" to keep consistent with the other figures
78	Figure D-23	N/A	Suggest labeling the figure with "DT-12 (Burlington Northern RR)" to keep consistent with the other figures
79	Figure D-25 and F-25	N/A	Please show the inaccessible areas on DT-4N, DT-4S and DT-7. All the remediated areas at Plant 6 are not depicted on these figures. These two figures show extensive remediation of Plant 7W. If extensive remediation has occurred at Plant 7W, then why is it excluded from this document? Please refer to comment number 3.
80	Figure D-25 and F-25	N/A	Please show the remediated areas on DT-4N, DT-4S, DT-7 and Buchanan Street.
81	Figure E-3, E-8 and G-2	N/A	The figure states that the section of the 12-inch sewer located south of building 509 is in "fair condition several leaking pipe joints." Is the sewer in fair condition or does it have leaking pipe joints?
82	Figure E-5 and E-10, legend	N/A	The sample IDs in comment 1 from the figure should be SDT1899 and SDT2100. Additionally, indicate on figure the location of these samples.
83	Figure E-5, E-10 and G-4	N/A	Identify the Hazardous Materials Storage Building located on Plant 7N. The FUSRAP water treatment plant is no longer located on Plant 7N but was relocated to Plant 7S. Suggest identifying the water treatment plant as "FUSRAP Water Treatment Plant."
84	Figure E-6	N/A	Please label Destrehan Street on figure since it's mentioned in the text.
85	Figure E-6, E-11 and G-5	N/A	Correct "PCS" with "PSC"
86	Figure E-9	N/A	The unlikely impacted sewer located on the far eastern portion of the property should have dashed lines on the yellow line.
87	Figure F-5	N/A	Change "Lots" to "Lot"

88	Figure F-11	N/A	Building D needs to indicate a scoping survey since it is located next to a remediated area.
89	Figure F-12	N/A	The storage structure and saw/metal storage buildings should be in blue indicating that they will receive scoping surveys.
90	Figure F-22	*DT-9 Terminal RR Assoc:ation*	Change to "DT-12 Burlington Northern RR"
91	Figure F-23	*DT-9 Terminal RR Assoc:ation*	Change to "DT-12 Burlington Northern RR"
92	Figure G-4	N/A	Building 700 is written as 701
93	Figure G-6	N/A	The note pertaining to Plant 6 and 7 exterior yards included in this figure does not appear to be necessary.

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