

**Addendum to the Third Five-Year Review Report for Fort Riley, Kansas,  
dated 27 September 2012**

A Five-Year Review addendum is generally completed for remedies where the protectiveness determination is deferred until further information is obtained. When deferring protectiveness in the Five-Year Review report, EPA typically provides a timeframe for when the information will be obtained and a protectiveness statement can be made. This document provides progress since the Five-Year Review and protectiveness determinations for the remedies where the statement was deferred in the 27 September 2012 Five-Year Review.

The Five-Year Review report (Report) for Fort Riley in Geary, Clay and Riley Counties near Junction City, Kansas, was signed by Herbert J. Abel, Chief, Environmental Division, Directorate of Public Works, US Army, Fort Riley on 20 September 2012, and by Cecilia Tapia, Director, Superfund Division, US Environmental Protection Agency on 27 September 2012. The protectiveness statements outlined in the Report were as follows:

OU 001, Southwest Funston Landfill Protectiveness Statement: The remedy at the SFL (controlling future land use and site access through institutional controls; stabilizing the Kansas River bank along the southern perimeter of the landfill; repairing and improving the existing native vegetation and soil cover; prohibiting the future use of site groundwater; and implementing a long-term groundwater monitoring program) is currently protective of human health and the environment and will continue to be protective during long-term management and care. There are no complete soil or groundwater exposure pathways that presently result in unacceptable risks at the site.

OU 003, Dry Cleaning Facilities Area Protectiveness Statement: The remedy at the DCFA Site (OU 003), Monitored Natural Attenuation with institutional controls, is currently protective of human health and the environment, and will continue to be protective long-term. Monitoring of natural attenuation is showing that COCs in groundwater are decreasing. Institutional controls, as documented in the RPMP and RD/RA Plan are blocking exposure pathways that could potentially result in unacceptable risks.

OU 005, 354 Area Solvent Detections Protectiveness Statement: The protectiveness determination of the remedy at the 354 Site (OU 005), Monitored Natural Attenuation with institutional controls, is deferred pending additional assessment. MNA and ICs associated with groundwater are effectively controlling groundwater exposure pathways. However it is not certain whether the vapor intrusion exposure pathway that could potentially result in unacceptable long-term risks at Building 367 is complete, or if so, whether it is adequately controlled. The installation is pursuing a strategy to mitigate the potential pathway. Within one year a Technical Memorandum will be prepared by the Army and coordinated with EPA to identify site conditions and site management procedures necessary to ensure long term protectiveness with respect to the vapor intrusion pathway.

This addendum addresses the Protectiveness Statement for OU 005 only.

**Progress Since the Five-Year Review Completion Date**

OU 005, 354 Area Solvent Detections Issues and Recommendations Identified in the Five-Year Review:

**Issue 1:** Comparison of soil vapor data at OU 005 to current screening values in accordance with the most recent guidance (EPA 2002) for vapor intrusion suggests that there is a potential risk from vapor intrusion at

Building 367. This conflicts with the findings of the RI for OU 005, which concluded there was no unacceptable vapor intrusion risk. A 2004 source removal, the leaky nature of the structure, and the use pattern of the building suggest that potential risk is likely much less than the conservative screening indicates.

**Recommendation 1:** The installation has determined that direct mitigation of the potential risk is a cost-effective approach to the issue as opposed to further investigations. Several mitigating factors are already in place as they are inherent in the condition and use of the building. The Army should prepare a Technical Memorandum for EPA review and approval to specify all site conditions and procedures that must be in place to mitigate potential vapor intrusion exposure. The document should include all site history, investigation data, and site use information necessary to support the effectiveness of mitigation.

**Issue 2:** Institutional controls (IC) related to vapor intrusion at OU 005 are described in a letter to the USEPA; however, these ICs are not currently included in the Land Use Control Plan (LUCP).

**Recommendation 2:** If it is confirmed that ICs are required, update the LUCP to include the IC requirements contained in the letter to the USEPA, and ensure that the ICs are modified, implemented and updated as appropriate.

**Resolution:** A Technical Memorandum (attached) was developed to address the concern that there may be a potential vapor intrusion issue that is affiliated with Building 367 within the 354 Area Solvent Detections Operable Unit 005 (OU 005) (354) at Fort Riley, Kansas. The Technical Memorandum concluded with the following Summary and Recommendations:

“The concern was raised that the site and its circumstances might necessitate a vapor intrusion study based on two values obtained in a 2004 soil-gas study. The data presented in the preceding discussion section are indicative of a lack of a reasonable potential for a vapor intrusion issue to exist for the building.

The potential source was removed in a remedial action and the area backfilled with clean soil and re-paved, the ground-water concentrations in nearby monitoring wells are continuing to decrease, and the building’s lack of a long-term or continuous human presence supports the contention that no evidence supports the existence of a pathway that would dictate the need to conduct any further studies.

The decrease in the level of toxicity of PCE, the building’s many penetrations that do not permit accumulation of vapors, and the lack of potential that the building will be used to house office spaces or other enclosed sensitive functions are further substantiation that there is no supportable reason to be concerned about vapor intrusion or build up.

Based on the data that are presented in the technical memorandum, the physical criteria at the site with regard to the building, its structure and conditions, the 8-inch thick pavement, soil characteristics, and the removal of the contaminated soils, a vapor intrusion pathway cannot be demonstrated to be a viable consideration. The installation does not find it an acceptable approach to expend funds for a study that will fail to demonstrate any potential for vapor accumulation or intrusion from the site contaminants.

Based upon the available information discussed in this memorandum, vapor intrusion exposures in this building do not present a potentially significant threat to human health. The building has signs posted to advise that there is a potential for vapor intrusion and provides the directions by which the potential exposure can be avoided. The Real Property Master Plan will be updated to include a statement that there is a limited potential for vapor intrusion and should be re-assessed if the building use, conditions, and/or tenants are changed.

Therefore, the protectiveness as defined in the Record of Decision for the 354 Area Solvent Detections (Operable Unit 005) is still effective and should not be considered deferred based on the potential for vapor intrusion.”

**New Issues and Recommendations**

Issue 1 above has been resolved with the production of the Technical Memorandum. Issue 2 will be resolved upon completion of the next revision to the Real Property Master Plan (RPMP). The recommendation is revised as below.

<b>OU(s): OU 005 354 Area Solvent Detections</b>	<b>Issue Category: Institutional Controls</b>			
	<b>Issue:</b> Institutional controls (IC) related to vapor intrusion at OU 005 are described in a letter to the USEPA; however, these ICs are not currently included in the Real Property Master Plan.			
	<b>Recommendation:</b> The Real Property Master Plan will be updated in its next revision to include a statement that there is a limited potential for vapor intrusion and should be re-assessed if the building use, conditions, and/or tenants are changed, in which case the US EPA recommends that sub-slab testing be accomplished.			
<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Implementing Party</b>	<b>Oversight Party</b>	<b>Milestone Date</b>
No	Yes	Federal Facility	EPA/State	September 2016

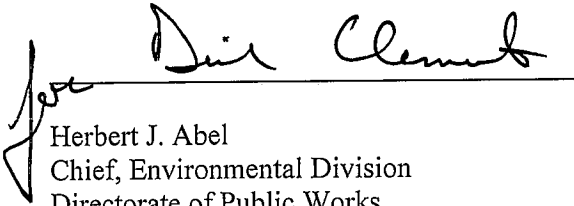
**Protectiveness Statements**

Based on new information and/or actions taken since the Five-Year Review completion date, the protectiveness statement for OU 005 is being revised as follows:

OU 005, 354 Area Solvent Detections Protectiveness Statement: The remedy at the 354 Site (OU 005), Monitored Natural Attenuation with institutional controls, is currently protective of human health and the environment. For the remedy to remain protective in the long-term, the Real Property Master Plan will be updated to include a statement that there is a limited potential for vapor intrusion and should be re-assessed if the building use, conditions, and/or tenants are changed, in which case the US EPA recommends that sub-slab testing be accomplished.

**Next Five-Year Review**

The next five-year review will be completed on September 30, 2017, five years after the due date of the last five-year review report.

A handwritten signature in black ink, appearing to read "Herb J. Abel", is written over a horizontal line.

Date 23 Sept 2013

Herbert J. Abel  
Chief, Environmental Division  
Directorate of Public Works  
US Army, Fort Riley

Attachment:

Vapor Intrusion Technical Memorandum  
Addendum to the 3rd Five-Year Review Report for Fort Riley, Kansas  
June 2013