

FUSRAP

FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM OVERSITE AND MONITORING COOPERATIVE AGREEMENT Third Quarter: July through September 2013 Report



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Missouri Department of Natural Resources

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Remediation of the St. Louis Airport Site Vicinity Property Ballfields Phase 2 was observed on August 22. Ballfields Phase 2 neared completion in the quarter, and Ballfields Phase 2B work began.

History of Formerly Utilized Sites Remedial Action Program Sites

The St. Louis Downtown Site (SLDS) processed uranium for the nation's early atomic energy program. In 1946, federal agencies began using the St. Louis Airport Site (SLAPS) as a storage area for radioactive wastes and processed residues, the majority of which originated at the SLDS. Methods of storage at the SLAPS included both uncovered bulk storage piles and materials containerized in drums. In 1966 the materials at the SLAPS were sold by the Atomic Energy Commission and were shipped to the facility at 9200 Latty Ave.,* where the majority of the material was dried and shipped to out-of-state processing facilities. 8,700 tons of radioactively contaminated barium sulfate processed waste were mixed with 39,000 tons of soil and disposed of at West Lake Landfill in 1973. West Lake Landfill is being addressed separately from the formerly utilized sites remedial action program, or FUSRAP.

Processing, transportation, storage and management practices during this period led to the contamination of the three major FUSRAP sites: SLDS, SLAPS and the Hazelwood Interim Storage Site, or HISS*, with the latter two sites being placed on the National Priorities List, or NPL, in 1989. In addition, approximately 78 contaminated vicinity properties have been identified as SLAPS Vicinity Properties or VPs. The total estimated volumes of contaminated soils, sediments and debris were estimated to have been about 1.1 million cubic yards.

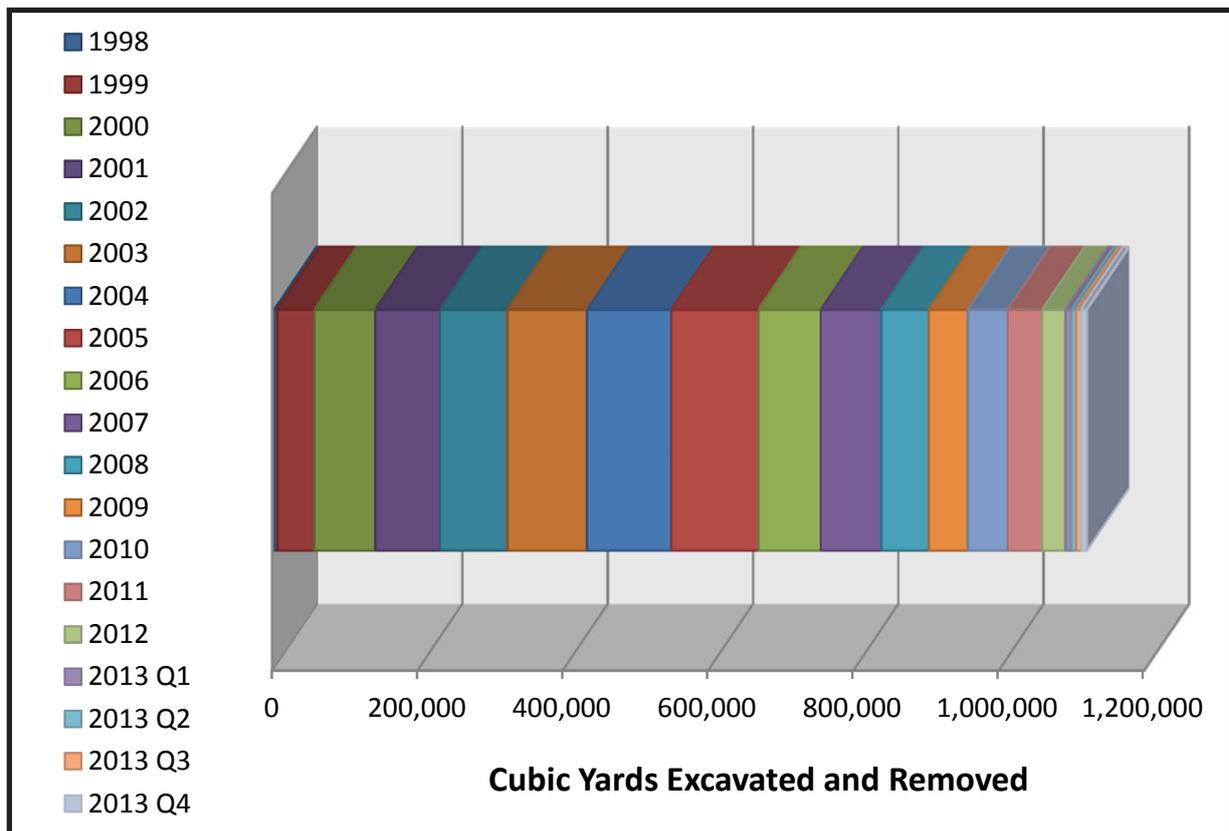
On Oct. 13, 1997, the Energy and Water Appropriations Bill transferred the responsibility for FUSRAP from the Department of Energy to the Army Corps of Engineers.

*The business and property at 9200 Latty Ave. are referred to as Futura in this and other reports. Although the company Futura no longer operates at the property, the property is listed on the NPL list under this nickname. The Hazelwood Interim Storage Site (HISS) is located just east of Futura. The two adjacent properties are referred to collectively as HISS/Futura.

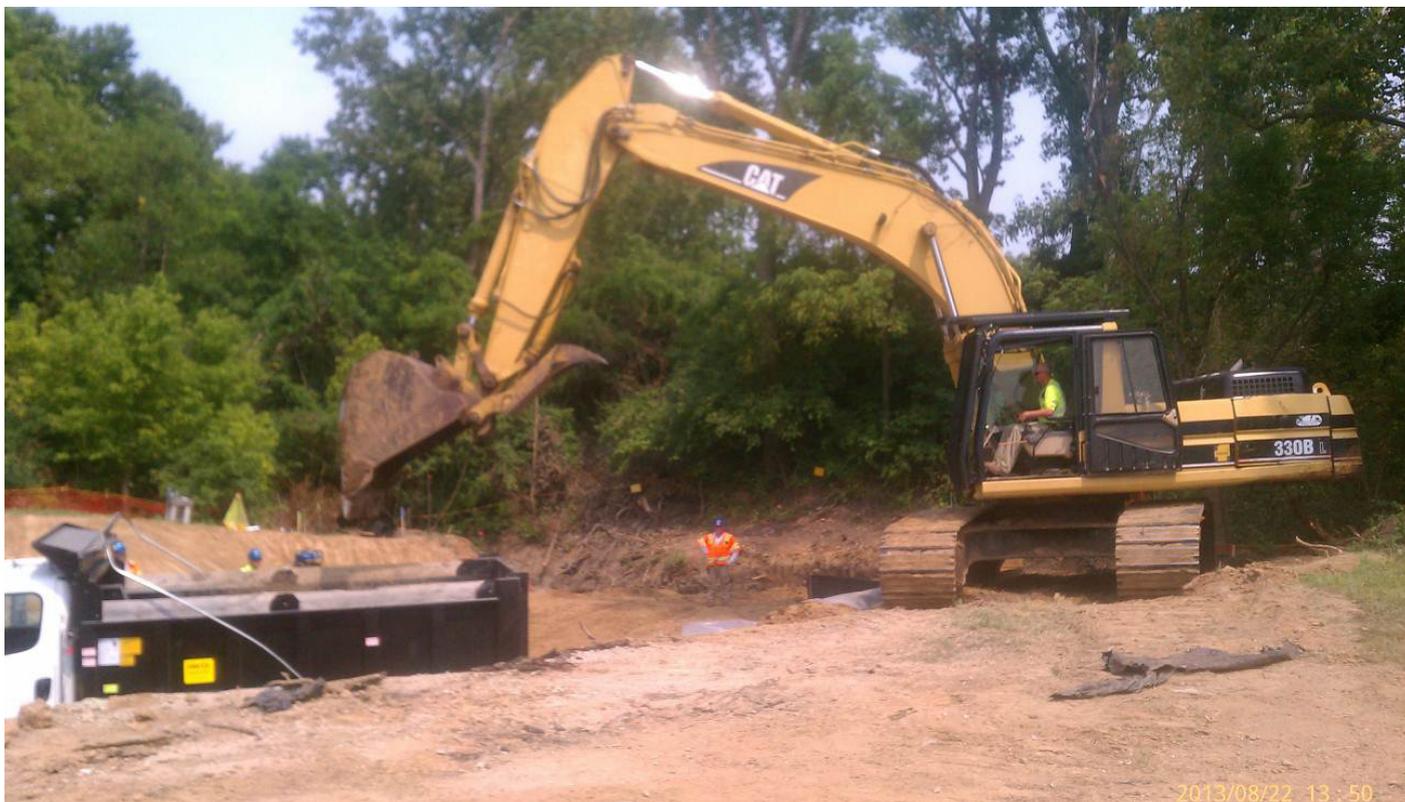
Work Completed This Quarter

	SPECIFIC SITE	WORK DESCRIPTION
North County, or NC	SLAPS Vicinity Properties	Ballfields Phase 2 excavation work continued during the quarter North of McDonnell Blvd. between Eva Road and Coldwater Creek and neared completion. Ballfields Phase 2B began. The volume of soil removed from the vicinity properties this quarter was about 748 cubic yards.
	HISS/Futura and Latty Ave. Vicinity Properties	Remediation of the Latty Avenue Vicinity Property VP-01(L) interior was completed during the quarter. The volume of debris from this work removed from the HISS/ Futura and Latty Ave. vicinity properties in this quarter was about 83 cubic yards.
SLDS	Downtown Vicinity Properties and SLDS	Building 101 excavation at Plant 6 West Half continued during the quarter. Remedial activities at DT-2 (City Property) east of the levee were on hold during the quarter. High water levels continue to hamper remediation efforts near the river. Remediation of the Kiesel Hall Street Property continued during the quarter. The volume of soil removed from St. Louis Downtown Sites in this quarter was about 7,197 cubic yards.
NON-SITE SPECIFIC		Four utility support operations were undertaken by the the Corps during the quarter. The total volume of soil or debris removed this quarter for the entire St. Louis FUSRAP project was about 8,028 cubic yards. (For reference, during Federal Fiscal Year 2012 about 32,095 cubic yards of material was removed from all St. Louis FUSRAP project sites.)

St. Louis FUSRAP Project Soil and Debris Removal 1998-Present



Years and quarters on this chart are based on the federal fiscal year, which is from Oct. 1 to Sept. 30.



Another view of the Ballfields Phase 2 excavation work as it proceeded on Aug. 22 is shown. The Corps excavated soil in the area until final status survey criteria were met.

Work Performed by Department Personnel

Document Reviews

The Federal Facilities Section provides technical review for major decision documents, work plans, pre-design investigation reports, remedial designs, and post remedial action reports. Comments are submitted to the Corps for response and become part of the public record. Listed below are documents reviewed by the department during this quarter and documents previously reviewed for which some resolution of comments occurred or is pending.

1. Pre-Design Investigation Summary Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Property 60, 61 and 62 - Revision B, dated May 24, 2013

The department requested correction of typographical errors and figure boundaries. The department also requested clarification and correction regarding reported data values; Missouri Department of Health and Senior Services (MDHSS) requested additional information regarding soil data and figure extents. MDHSS also questioned exposure assumptions and radon exposure in risk modeling. The department transmitted these comments in a letter dated July 1.

2. Pre-Design Investigation Summary Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Property 40A (Partial) - Revision B, dated May 31, 2013.

The department requested correction of a figure reference and MDHSS requested clarifications regarding sampling locations by letter dated July 3.

3. Proposed Plan for No Further Action for the Inaccessible Soils Operable Unit Associated with Selected Properties at the St. Louis Downtown Sites - Revision B, dated Aug. 2, 2013.

The department and the MDHSS commented by letter Aug. 16 that due to short review times they were still in the process of verifying that the remedial investigation supports that the selected properties meet a standard of release for unlimited use and unrestricted exposure and we reserved the potential to comment further either before or during the public comment period. The department also recommended a fact sheet be issued to the public for this document. The department made recommendations for clarification of the text regarding the work performed; and also recommended clarifying text be added to the glossary and Figures 1, 3 and 4.

4. Post Remedial Action Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Properties 10, 11 and 12 - Revision B dated July 22, 2013.

The department and MDHSS responded to this draft document on Aug. 27. The department commented regarding a typographical error in the remediation goal value for Th-230 and recommended changes regarding rounding of calculation results. MDHSS had no comments on this draft document.

5. Post-Remedial Action Report and Final Status Survey Evaluation for the Accessible Soils within the St. Louis Downtown Site Vicinity Property Terminal Railroad Association Soil Spoils Area - Revision B dated July 31, 2013.

The department and MDHSS responded to this draft document on Aug. 27; the department had no comments.

6. Post Remedial Action Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Properties 9C, 10C and the Road Right-of-Way (Partial) - Revision B, dated Aug. 7, 2013.

The department requested correction of the Design Concentration Guideline calculations and the Design Concentration Guideline reported in our letter on Sept. 6. MDHSS made technical comments regarding the risk and dose calculations and also requested clarification regarding the exposure scenario used to evaluate them.

7. Post Remedial Action Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Property 31A - Revision B dated Aug. 5, 2013.

The department and MDHSS commented on this draft document by letter on Sept. 9. The department requested the Corps fix some typographical errors in the report. The department also requested clarification regarding contradictory reported calculation results. MDHSS made technical comments focused on the risk model input parameters, especially the soil thickness of the contaminated zone.

8. Pre-Design Investigation Report and Final Status Evaluation for the Accessible Soils within the St. Louis Downtown Site Vicinity Property Lange Stegmann DT-37 - Revision B, dated Aug. 9, 2013.

The department and MDHSS commented on this draft document by letter on Sept. 13. The department also requested clarifications be made to the text in several locations.

9. Post-Remedial Action Report and Final Status Survey Evaluation for the Accessible Soils within the St. Louis Downtown Site Vicinity Property Norfolk Southern Railroad DT-3 - Revision B dated Aug. 7, 2013.

The department and MDHSS commented on this draft document by letter on Sept. 9. The department requested the Corps fix some typographical errors in the report. The department also requested clarification regarding contradictory reported calculation results. MDHSS made technical comments focused on the risk model input parameters, especially the soil thickness of the contaminated zone.

10. Post Remedial Action Report and Final Status Survey Evaluation for the Latty Avenue Vicinity Property Hazelwood Interim Storage Site - Revision B dated Aug. 12, 2013.

The department and MDHSS commented on this draft document by letter on Sept. 14. The department requested clarifications be made to the text regarding release of the properties for unlimited use and unrestricted exposure and also requested correction of typographical errors in sample calculations. The department asked for clarification regarding why surface soil remediation goals did not need to be considered for this property. The department again recommended that when data appear in a report such as this one, the source of the data should be referenced. The department was unable to verify the design concentration guideline value reported by The Corps and verification of the calculation was asked for. Correction of several math errors in equations appearing in the appendices was also noted.

- 11. Post Remedial Action Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Property Investigation Area 13 Airport Authority - Revision B, dated Aug. 26, 2013.**

The department and MDHSS commented on this draft document by letter on Sept. 24. The department requested The Corps fix some typographical errors in the report. The department again recommended that when data appear in a report such as this one, the source of the data should be referenced. Changes to the text were recommended for clarity. The department recommended correction of calculations appearing in the report.
- 12. Proposed Plan for No Further Action for the Inaccessible Soils Operable Unit Associated with Group 1 Properties at the St. Louis Downtown Sites - Draft Final, dated Sept. 23, 2013.**

The department and MDHSS commented by letter Oct. 8 that the proposed plan must conclude that the selected properties meet a standard of release for unlimited use and unrestricted exposure for no further action to be required and the draft plan does not do so. The department communicated the position that unlimited use and unrestricted exposure should be verified by evaluating residential and recreational risk for all properties and cited EPA, The Corps and U.S. Department of Energy guidance and precedent regarding the department's position. MDHSS commented that a residential gardener scenario resulted in unacceptable risk for two properties in the plan. The department objected to language implying groundwater in the area will never become usable and also requested correction of two figures depicting historical processing areas. These comments are currently under consideration by The Corps.
- 13. Pre-Design Investigation Summary Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Property 40A (Partial) - Revision 0, dated Aug. 13, 2013.**

The department commented on this document in its draft form and then reviewed the final version to verify that any requested changes were completed.
- 14. Pre-Design Investigation Summary Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Property 60, 61 and 62 - Revision 0, dated July 30, 2013.**

The department commented on this document in its draft form and then reviewed the final version to verify that any requested changes were completed.
- 15. Post Remedial Action Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Properties 10, 11 and 12 - Revision 0, dated Sept. 5, 2013.**

The department commented on this document in its draft form and then reviewed the final version to verify that any requested changes were completed.
- 16. Post Remedial Action Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Property 31A - Revision 0, dated Sept. 18, 2013.**

The department commented on this document in its draft form and then reviewed the final version to verify that any requested changes were completed.
- 17. Post Remedial Action Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Properties 9C, 10C and the Road Right-of-Way (Partial) - Revision 0, dated Sept. 18, 2013.**

The department commented on this document in its draft form and then reviewed the final version to verify that any requested changes were completed.
- 18. Post Remedial Action Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Property 31A - Revision 0, dated Sept. 23, 2013.**

The department commented on this document in its draft form and then reviewed the final version to verify that any requested changes were completed.

19. Pre-Design Investigation Report and Final Status Evaluation for the Accessible Soils within the St. Louis Downtown Site Vicinity Property Lange Stegmann DT-37 - Revision 0, dated Sept. 23, 2013.

The department commented on this document in its draft form and then reviewed the final version to verify that any requested changes were completed.

20. Post-Remedial Action Report and Final Status Survey Evaluation for the Accessible Soils within the St. Louis Downtown Site Vicinity Property Norfolk Southern Railroad DT-3 - Revision 0, dated Sept. 23, 2013.

The department commented on this document in its draft form and then reviewed the final version to verify that any requested changes were completed.

21. Post Remedial Action Report and Final Status Survey Evaluation for the Latty Avenue Vicinity Property Hazelwood Interim Storage Site - Revision 0, dated Sept. 25, 2013.

The department commented on this document in its draft form and then reviewed the final version to verify that any requested changes were completed.

22. Post Remedial Action Report and Final Status Survey Evaluation for the St. Louis Airport Site Vicinity Property Investigation Area 13 Airport Authority - Revision 0, dated Sept. 27, 2013.

The department commented on this document in its draft form and then reviewed the final version to verify that any requested changes were completed.

Site Observations

Field personnel conduct site visits to observe and document the status of remedial actions, environmental monitoring, contaminant migration prevention and pre-design investigations. U.S. Army Corps of Engineers personnel are immediately notified of findings and reports are filed for public record and are available upon request.

The following site visits were conducted on these dates during this quarter:

SPECIFIC SITE	JULY	AUG.	SEPT.
NORTH COUNTY SITES (HISS/Futura, SLAPS and Vicinity properties)	July 2 July 17 July 30	Aug. 22	Oct. 3
SLDS		Aug. 28	Sept. 11

***All departmental comments and site visit reports are available upon request.**

Sampling

Samples are obtained by department personnel and shipped to a contract laboratory for analysis. The purposes of sample collection include confirmation of results from remedial actions, stormwater controls or treatment and investigating locations of potential concern.

Coldwater Creek Sampling

The department completed an additional phase of a study of Coldwater Creek in conjunction with department's Missouri Geological Survey during the previous calendar year. Samples of likely deposition area sediment and surface water were taken from Coldwater Creek between New Halls Ferry Road and the confluence of Coldwater Creek and the Missouri River in December 2012. This sampling effort was in addition to previous work done and more creek sampling work is planned in the future. The December samples were analyzed for radioactive constituents of concern; the results will be made available to the public after they have been compiled and verified.

Florissant Community Garden Sampling

The department sampled soil at the Florissant Community Garden, located near 601 Rue in St. Charles, in the previous quarter. The garden is in a flood hazard area because it is at the confluence of Fountain Creek and Coldwater Creek; however, due to the distance of the vegetable garden from Coldwater Creek, the department considers it unlikely to be contaminated. The department sampled the garden to answer community concerns about the possibility of contamination. Scanning for gamma radiation with field equipment, a Ludlum 44-10 probe attached to a Ludlum 2221 Rate Meter, showed results in the area consistent with background results for the area. Three samples in the garden area were taken and analyzed for radiological contaminants of concern; the results of the sampling were both below FUSRAP project remediation goals and were consistent with typical background levels for the area. Results are available upon request.

Private Residence Sampling

The department sampled the tap water of a private residence on Pomander Court in Florissant on May 3 in the previous quarter. The results of analysis were sent to the resident and are available to the public upon request.

The department sampled soil at a private residence on Seville Court located near Coldwater Creek on June 4 in the previous quarter. These samples were taken to answer resident concerns about the possibility of contamination. Scanning for gamma radiation with field equipment, a Ludlum 44-10 probe attached to a Ludlum

2221 Rate Meter, showed results consistent with background results for the area. Two samples were taken of soil in the area; they were analyzed for radiological contaminants of concern. The results were sent to the resident and are available to the public upon request.

gamma radiation with field equipment, a Ludlum 44-10 probe attached to a Ludlum 2221 Rate Meter, showed results consistent with background results for the area. Two samples were taken of soil in the area and were analyzed for radiological contaminants of concern. The results will be sent to the resident and made available to the public upon request.

Community Relations

Department personnel are available for questions, requests for information, or as a means of submitting comments and concerns. It is our goal to encourage community involvement and ensure the concerns of the citizens of Missouri are addressed. Special requests regarding field oversight, research and presentations are welcome. Ramona Huckstep, the Community Involvement Coordinator, is available for assistance at 573-522-1540.

Oversight Committee

The St. Louis Sites Oversight Committee last met April 25 at 7 p.m. at the James J. Egan Civic Center. The Corp's FUSRAP Project Manager, Sharon Cotner, gave an update about current remediation work and discussed the history of the sites. The Corps also encouraged residents living within the Coldwater Creek floodplain between Frost Ave. and St. Denis Bridge to sign up to allow for sampling on their property. EPA Project Manager, Matt Jefferson, discussed a recent gamma scan flyover of Coldwater Creek. Agency for Toxic Substances and Disease Control gave a presentation on cancer and the environment. DHSS staff discussed their analysis of cancer incidence data in the area. All the agencies were present to answer questions before and after the formal presentations.

The time and location of the next meeting will be announced in our next quarterly report. The meeting that was to be held Oct. 24 at the Hazelwood Civic Center had to be cancelled due to continuing uncertainty whether key federal government stakeholders such as the Corps and EPA would be able to attend.

If you wish to be added to the notification list for these meetings, contact either Sandy Delcoure at sdelcoure@sbcglobal.net, or Ramona Huckstep, Missouri Department of Natural Resources at 573-522-1540.

Regulators Coordination Meetings

Personnel from EPA, the Corps and the department periodically meet in person or by conference call to discuss site status, document schedules, landowner assistance projects and other similar issues. These coordination meetings are beneficial, as they keep the parties informed about the site status, allow for discussion of cleanup issues and provide coordination of agency activities as they relate to cleanup of the sites. The meetings were held on on July 3, July 31, Aug. 21 and Sept. 3.



Work at the SLDS Kiesel- Hall Street Location continued during the quarter.

Site Activities

North County

U.S. Army Core of Engineers Remedial Actions

- Remediation work on the interior of VP 1(L) buildings was completed during the quarter.
- Ballfields Phase 2 excavation work continued during the quarter and neared completion; Ballfields Phase 2B excavation work began.
- Characterization sampling of IA-10 was completed during the quarter.
- VPs 1, 2, 7, 13, 14, 15 and IA-11 sampling began; some GKN sampling was completed and Boeing property sampling was on hold waiting for Boeing right of entry approval during the quarter.

St. Louis Downtown Site

U.S. Army Core of Engineers Remedial Actions

- Plant 6 (Mallinckrodt), continued excavating underlying soil from the location formerly occupied by Building 101 during the quarter.
- Excavation and additional sampling at Kiesel Hall Street Property continued. The remediation grew beyond the approved bounds of the property; contamination above remediation goals will need to be removed North towards a Gunther Salt property that used to be owned by Morton Salt and east towards a property that is owned by St. Louis City. The project scope will be enlarged to address these properties.
- DT-2 (City Property) Excavation east of the levee in Area 7 remained suspended due to high river levels, but will likely resume next quarter.



The department observed work at the Ballfields Phase 2B excavation area on Oct. 3. This work is across McDonnell Blvd. North from SLAPS.

Tasks and Goals for Next Quarter

North County

- Remediation at the IA-9 Ballfields area phase 2B by the Corps will continue; sampling of Coldwater Creek from Frost Ave to St. Denis Bridge will start.
- Missouri Department of Natural Resources will continue Coldwater Creek area sampling efforts in the next quarter; the department may also finalize reports regarding prior Coldwater Creek area sampling efforts in the next quarter.

St. Louis Downtown Site

- DT-2 (City Property) remediation by the Corps may continue if river levels decrease. It is currently expected to be completed in mid-2016.
- Plant 6 - building 101 area soil excavation by the Corps will continue. It is currently expected to be completed mid-2015.
- Kiesel Hall Street remediation by the Corps will continue. This project is expected to be completed in November 2013.

DOCUMENT REVIEWS

Review of the following documents and data are anticipated during the next quarter.

NORTH COUNTY

- North County Site Wide Remedial Design and Remedial Action Work Plan
- Community Involvement Plan for all St. Louis Sites
- Coldwater Creek Frost to St. Denis Bridge Pre-Design Investigation Work Plan

ST. LOUIS DOWNTOWN SITE

- Inaccessible Soils Operable Proposed Plan and Record of Decision
- Building 101 and Destrehan Street Explanation of Significant Difference - Review only; no comments will be made on this document

Site Observations and Sampling

Our on-going role in providing site observations and sampling investigations will continue as in previous quarters.

Department Projects

Staff will continue to work on committees affiliated with long-term stewardship, groundwater and the five year review.

Long-Term Stewardship Committee

Long-term stewardship applies to sites and properties where long-term management of contaminated environmental media is necessary to protect human health and the environment. This generally includes the establishment and maintenance of physical and legal controls, implementation entities, authorities, accountability mechanisms, information and data management systems, and other resources.

The need for long-term stewardship will exist for areas of inaccessible contamination at both the North St. Louis County and the Downtown Properties located under roads, railroads, buildings and other similar structures deemed by the current owners to be vital or in-use. It also exists for portions of the downtown site where remediation goals are deemed suitable for industrial uses.

Completion of the project is expected by 2016, and will be followed by a two-year transitional period as responsibility is shifted from the Corps to the U.S. Department of Energy. The goal of the committee is to begin developing long-term stewardship mechanisms as soon as possible. The department wants these mechanisms to be identified and in place so it can begin assessing their effectiveness prior to the transition.

Training, Conferences and Meetings Attended

TRAINING, CONFERENCE OR MEETING	DATES ATTENDED	DEPARTMENTAL STAFF WHO ATTENDED
Hazardous Waste Program, Federal Facilities section meetings*	Aug. 8, Sept. 10	Daniel Carey, Rita Alexander, Tiffany Drake, Eric Gilstrap, Branden Doster, Patrick Anderson and Ramona Huckstep
Radiation Specialist Training, Kansas City	Aug. 11-16	Daniel Carey, Eric Gilstrap, Patrick Anderson*
Regulator conference calls	July 3, July 31 Aug. 21, Sept. 3	Daniel Carey, Tiffany Drake, Eric Gilstrap, Branden Doster and Ramona Huckstep
FUSRAP-SLDS Status Meeting	Sept. 11	Daniel Carey
Federal Facilities Section FUSRAP-SLDS Site Tour	April 25	Daniel Carey, Rita Alexander, Tiffany Drake, Eric Gilstrap, Branden Doster and Patrick Anderson

* U.S. Army Corps of Engineers Cooperative Agreement funds were not used for all of the staff listed as participating in this training or meeting.

Financial Reporting

The department's Hazardous Waste Program submits a financial report separate from this document. The report includes costs incurred during the reporting period with request for reimbursement forms.