

Science Applications International Corporation An Employee-Owned Company

526.20000818.00

August 18, 2000

Mr. James A. Mills, P.E. U.S. Army Corps of Engineers, St. Louis District Contracting Officer's Representative CEMVS-ED-C 1222 Spruce Street St. Louis, MO 63103

SUBJECT: Contract DAHA90-94-D-0007, Task Order 1004 Transmittal of the Final Fiscal Year 2000 Plan for the St. Louis FUSRAP North County Site

Dear Mr. Mills:

Enclosed is the final document entitled *Fiscal Year 2000 Plan for the St. Louis FUSRAP North County Site.* There were no comments received on the draft submittal that required changes to be made to the document. Additional copies of this document are being distributed to the individuals identified below.

We appreciate the opportunity to support you on this project. If you have any questions or need additional information, please call Sherry Gibson at (314) 581 7767 or the undersigned at (931) 728-2333.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Mike Fitzguald

Mike Fitzgerald Task Manager

Enclosure

cc:

T. Atchison D. Chambers S. Cotner L. Dell'orco R. Ferker G. Hempen J. Mattingly (2) D. Mueller B. Tope









FINAL

FISCAL YEAR 2000 PLAN FOR THE ST. LOUIS FUSRAP NORTH COUNTY SITE

AUGUST 2000

prepared by

U.S. Army Corps of Engineers, St. Louis District Office, Formerly Utilized Sites Remedial Action Program

with assistance from

Science Applications International Corporation under Contract No. DAHA90-94-D-0007, Delivery Order 1004

TABLE OF CONTENTS

1.0	INT	RODUCTION	1
2.0	GEN	JERAL METHODOLOGY	1
	2.1	ACCESS AGREEMENT	1
	2.2	HISTORICAL DATA REVIEW	1
	2.3	INITIAL MARSSIM CLASSIFICATION	1
•	2.4	RADIOLOGICAL WALKOVER SURVEY AND HOTSPOT SAMPLING	4
	2.5	MARSSIM CLASS 2 AND CLASS 3 SOIL SAMPLING	5
	2.6	PRE-DESIGN INVESTIGATION	5
	2.7	REMEDIAL ACTION	6
	2.8	FINAL VERIFICATION	6

LIST OF TABLES

Table 2-1.	Properties Scheduled to be Addressed in FY 2000	. 2
Table 2-2.	Typical Gamma Scan Instruments	. 5

LIST OF FIGURES

Figure 2-1.	General	Methodology for Characterization of St. Louis North County
	Site Prop	perties

1.0 INTRODUCTION

The purpose of this plan is to present the methodology pursuant to returning the St. Louis North County Site properties that are scheduled to be addressed in FY 2000 to normal use free of unacceptable risk from radiological contaminants. The full list of properties is presented in the *St. Louis FUSRAP North County Property Characterization Plan.* The properties scheduled to be addressed in FY 2000 are presented in Table 2-1. However, progress on individual properties within the scope of this plan may be affected by funding changes, discovery of previously unknown area of significant contamination, or changes in priority based on other factors.

2.0 GENERAL METHODOLOGY

The steps listed below represent the progression of activities that is anticipated for properties within the scope of this plan. This sequential process is presented graphically as Figure 2-1. Evaluation and verification activities will be performed in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) and are further described in the FUSRAP Final Status Survey Plan for the St. Louis North County Vicinity Properties.

2.1 ACCESS AGREEMENT

Before activities can begin at a property, an agreement must be made with the property owner to allow evaluation personnel access to the property. Access agreements will be coordinated through USACE Real Estate personnel. If access agreements for specific properties cannot be obtained within a reasonable time frame, progress at those properties would likely be delayed until an agreement can be reached.

2.2 HISTORICAL DATA REVIEW

Previous removal actions and associated reports will be reviewed to perform an initial assessment of each property. Historical photographs will be examined to establish construction dates of existing buildings as well as areas covered with asphalt or concrete. Those areas that were beneath such cover during the time frame when contamination most likely occurred will be excluded from the assessment unless evidence exists that suggests contaminant migration into these areas. Chemical contamination is assumed to be incidental and co-located with the radiological soil contamination for the scheduled properties.

2.3 INITIAL MARSSIM CLASSIFICATION

Based upon review of information such as historical soil data, contaminated material haul routes, and exposed areas at the time of hauling, each property will be preliminarily classified in accordance with the MARSSIM guidelines. This initial classification will result in designation of MARSSIM Class 1, Class 2, and/or Class 3 areas within each property. Based upon the results of the radiological walkover survey and soil samples (as described in Section 2.4),

Properties at which previous DOE removal actions occurred ^(a)	Properties Scheduled for Start of Implementation with no Expected Removal Volumes ^(b)	Properties Scheduled for Start of Implementation Remediation Expected ^(c)	Properties Scheduled for Remediation ^(d)
VP-3L	VP-1	VP-9	VP-38"
VP-4L	VP-2	VP-10	HISS Supplemental Pile
VP-5L	VP-3	VP-11	
VP-6L	VP-4	VP-12	
VP-19	VP-5	Ballfield & IA-10 Hotspots	
VP-20	VP-6	VP-56	
VP-21	VP-8	VP-57	
VP-22	VP-14	VP-58	
VP-23	VP-16	VP-59	
VP-24	VP-17	VP-1C	
VP-26	VP-18	VP-2L (Pad)	···· · · · · · · · · · · · · · · · · ·
VP-27	VP-20A		
VP-30			1
VP-31A			
VP-32			
VP-33			
VP-34			
VP-35			
VP-36			
VP-37	•		
VP-38			
VP-39	· · · · · · · · · · · · · · · · · · ·		
VP-40			
VP-41			
VP-42			
VP-43			
VP-44			· · · · · · · · · · · · · · · · · · ·
VP-45			
VP-47			
VP-48			
VP-53			

Table 2-1. Properties Scheduled to be Addressed in FY 2000

- (a) Properties at which previous DOE removal actions occurred These properties were previously addressed by DOE but no formal final release letter was ever issued. An evaluation of existing characterization, remediation, and verification records will be performed for these properties to determine current status. Based on these evaluations, these properties will either be formally released or will be further investigated per the methodology described in this plan to obtain additional data to support release or remedial design efforts.
- (b) <u>Properties Scheduled for Start of Implementation—No Expected Removal Volumes</u> These properties are scheduled to start implementation of this plan in FY 2000. Steps 2.1 through 2.4 of this plan are anticipated for these properties. These properties may be released or be subjected to additional investigation depending on extent of contamination discovered in previous steps.
- (c) <u>Properties Scheduled for Start of Implementation---Remediation Expected</u> -- These properties are scheduled to start implementation of this plan in FY 2000. Steps 2.1 through 2.6 of this plan are anticipated for these properties.
- (d) Properties Scheduled for Remediation These properties will follow the methodology of this plan to completion. Remediation of these properties is scheduled for FY 2000. Steps 2.1 through 2.8 of this plan are anticipated for these properties.
- * DOE removed contaminated soil from portions of VP-38, however, additional removal is necessary before the entire property can be released.

Figure 2-1. General Methodology for enaracterization of St. Louis North County Site Properties



boundaries of the initial MARSSIM classification areas may be modified. For example, an area initially classified as Class 2 may become Class 1 based on the additional data obtained from the walkover survey and associated soil sampling.

2.4 RADIOLOGICAL WALKOVER SURVEY AND HOTSPOT SAMPLING

Th-230, Ra-226 and its progeny, Th-232 and its progeny, and processed natural uranium have associated gamma radiation, which can be used to identify the presence of residual contamination and estimate the concentrations of the various individual radionuclides potentially present at the North County properties. Field survey techniques are relatively insensitive to Th-230 due to the low abundance of gamma radiation it emits. However, concentrations of mixtures of other primary radioactive contaminants can be detected by field methods. Surface scans for gross gamma radiation will be performed to identify locations of elevated external radiation, suggesting possible residual radiological contamination. Instrument response will be continuously monitored during scanning through use of the instrument audible signal. Scanning results will be recorded in counts per minute (cpm).

Screening gamma scans will, to the extent possible, be performed over 50-100% of each property. On properties where less than 100% of the accessible area is surveyed, scans should focus on areas most likely to have elevated levels of activity as determined by the survey supervisor. The surveyor will advance at a speed of approximately 2 ft/s (approximately 0.5 m/s) while passing the detector over the surface in a serpentine pattern. Audible response of the instrument will be monitored, and locations of elevated audible response will be noted. The ambient background for a survey unit will be determined at the start of the survey and a scanning response that is detectable above the background level (e.g., 2,000 cpm above background) will be set as the investigation level, indicating potential contamination. Locations exceeding the investigation level will be investigated and, if appropriate, sampled. Gamma scan data may also be recorded in real time, using position and data recording methods.

There may be locations where safety considerations or other restrictions prevent access for normal scanning activities. Reasonable efforts to scan such locations will be made. Alternative and innovative approaches (e.g., employing extension poles, mounting detectors on platforms with wheels or skids, placing detectors in protective sleeves, using excavating equipment to position and move detectors, etc.) will be considered. Table 2-2 lists radiological field survey instruments that will be used (functional and performance equivalents may be used, as determined by a Certified Health Physicist).

All instrumentation will have current calibration (within the past 12 months or more frequently if recommended by the manufacturer). Daily field performance checks will be conducted in accordance with individual instrument use procedures. These performance checks will be performed prior to and following daily field activities and at any time the instrument response appears questionable. Only data obtained using instruments that satisfy the performance requirements will be accepted for use in the evaluation.

4

Description	Application	Approximate Detection Sensitivity (pCi/g)
Ludlum Model 44-10; 2-inch × 2-inch NaI gamma scintillation detector	Gamma scans of all surfaces	Th-230(1122); Ra-226(1.2); and U-238 (19.6)
Ludlum Model 2221; Scaler/ratemeter (with earphones)	Readout instrument for gamma scintillation detector	N/A

Table 2-2. Typical Gamma Scan Instruments

Based on the results of the radiological walkover survey, soil investigation samples may be taken. These samples would be biased to represent areas identified by the walkover survey as exhibiting elevated levels of radioactivity. The number of investigation samples, if any, will be determined by the survey supervisor after review of the walkover survey findings.

2.5 MARSSIM CLASS 2 AND CLASS 3 SOIL SAMPLING

Areas designated as Class 2 and Class 3 will be sampled and evaluated in accordance with the FUSRAP Final Status Survey Plan for the St. Louis North County Vicinity Properties unless the radiological walkover survey provides evidence to suggest reclassification to a more restrictive MARSSIM class.

2.6 PRE-DESIGN INVESTIGATION

Based on historical data, radiological walkover surveys, and soil sample results, contaminated areas will be further investigated to determine the vertical and horizontal extent of contamination. This pre-design investigation (PDI) will consist of additional soil sampling in order to provide a reasonable data set on which to base the remedial design. Data requirements that need to be satisfied by this additional sampling will be described in a property-specific work description. The work description document will describe data needs for each appropriate area of design. For example, it may be necessary to collect data regarding the nature and extent of contamination, waste profiling and/or soil blending, as well as structural, geophysical, and chemical issues. Samples will be collected and analyzed for appropriate radiological constituents in accordance with the Sampling and Analysis Guide for the St. Louis Site and the SAIC Site Safety and Health Plan for St. Louis-FUSRAP Activities.

Soil samples will be taken with hand-held augers, a hand-held motorized auger, or a standard drill rig. The drill rig will be used for all depths > 9.9 feet.

Initial boreholes will be established at the perimeter of suspected contamination. Samples will be taken in each borehole to delineate depth of contamination. Each sample will be a composite of the soil from each two-foot interval (i.e., 0-2 ft., 2-4 ft., etc.). Additional locations will be sampled until the edge of the contamination has been determined on all sides or property/physical boundaries are encountered. A design for remediation of contaminated areas will be developed based on the data obtained from the pre-design investigation.

2.7 **REMEDIAL ACTION**

The selected remediation contractor will remediate the property, if necessary, in accordance with the remedial design.

2.8 FINAL VERIFICATION

After characterization or remedial activities are completed, each property will undergo final verification in accordance with the MARSSIM guidance and the FUSRAP Final Status Survey Plan for the St. Louis North County Vicinity Properties.

Catalogi Technical/Project Managers fill in C through	g Form G, K through Q. RM completes other fields}
A. Document ID Number: Assigned by database 00 - 4	77 B. Further Information Required?:
C. Operable Unit (Choose One): USACE St. Louis Sites Downtown North County Madison Sites Inaccessible Areas PRP Oversight Committee	D. Site (Optional): SLDS VPs Mallinckrodt SLAPS SLAPS VPs CWC HISS Madison
E. Area (Optional):	· · · · ·
F. Primary Document Type (Choose One): Site Management Records Removal Response Remedial Investigation Feasibility Study Record of Decision Remedial Design	dial Action
G. Secondary Document Type (see back o) form): (~)	the o tan 1 0 rogress & grout
H. Bechtel Number:	I. SAIC Number:
J. MARKS Number (Choose One): FN: 1110-1-8100e	FN: 1110-1-8100f 🗌 FN: 1110-1-8100g 🗌
K. Subject:/Tille: Sinal Fy 2000 Plan	for the Morth County Site
L. Author:	M. Author's Company: Salc
N. Recipient(s):	0. Recipient(s) Company: <u>USACE</u>
P. Version (Choose One): Draft 🗌 🛛 Final 🔀	Q. Date: 8/18/00
R. Include in the ARF? B S. Include in the AR?] T. Filed as Confidential/Privileged?
U. Document Format (Choose one): Paper 2 Photographic Electronic Audio-visual	Cartographic/Oversize
V. Filed in AR Volume Number:	
W. Physical Location (Choose One): Central Files E Micro Records Holding Area Depa	film Vendor In ARF International In ARF International In ARF International In AR

1