

License # 31-02892-06

ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

February 2, 2001

Mr. Todd Jackson
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

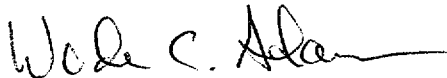
**SUBJECT: FINAL CONFIRMATORY SURVEY PLAN FOR THE ST. ALBANS VETERANS
ADMINISTRATION EXTENDED CARE FACILITY, QUEENS, NEW YORK
(DOCKET NO. 30-34751, RFTA NO. 00-012)**

Dear Mr. Jackson:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) has prepared and enclosed the final survey plan for planned survey activities at the St. Albans Veterans Administration Extended Care Facility in Queens, New York. The survey is tentatively scheduled for February 26 through 27, 2001. Attachment A provides the spending plan for the proposed activities.

If you have any questions, please direct them to me at (865) 576-0065 or Tim Vitkus at (865) 576-5073.

Sincerely,



Wade C. Adams
Project Leader/Health Physicist
Environmental Survey and
Site Assessment Program

WCA:ar

Enclosure

cc: R. Clement, NRC/NMSS/TWFN 7F27
E. Knox-Davin, NRC/NMSS/TWFN 8A23
W. Beck, ORISE/ESSAP
E. Abelquist, ORISE/ESSAP
T. Vitkus, ORISE/ESSAP
D. Condra, ORISE/ESSAP
File/771

NMSS/RGN Materials-6
Public/Non-Sensitive

**FINAL
CONFIRMATORY SURVEY PLAN
FOR THE
ST. ALBANS VETERANS ADMINISTRATION
EXTENDED CARE FACILITY
QUEENS, NEW YORK**

INTRODUCTION

The St. Albans Veterans Administration Extended Care Facility (VAECC), located in Queens, New York, currently provides services for extended care, outpatient service, and various other operational and maintenance services. The Department of Veterans Affairs Medical Center in Brooklyn, which operates the VAECC, is in the process of decommissioning facilities formerly utilized for nuclear medicine activities by the U.S. Navy. The VAECC originally served as a U.S. Naval hospital prior to acquisition by the VA. During the period from 1956 through 1973, the U.S. Atomic Energy Commission (AEC), predecessor agency to the Nuclear Regulatory Commission (NRC), granted the Navy authority, under various licenses, to use radioactive materials for nuclear medicine purposes. Strontium-90 and H-3 were identified as the principle radionuclides used in the former nuclear medicine facilities at St. Albans. The Navy's license was terminated in 1973 (Weston 1999a).

A later review of formerly licensed facilities identified St. Albans as a site where residual contamination in excess of current standards may have been present. In 1993, the U.S. Army Corps of Engineers (USACE) was tasked with stabilizing the site, isolating the sewer lines, and sealing affected rooms. Subsequent characterization surveys of the nuclear medicine facilities were conducted by the Navy and the USACE, and in 1998, the NRC granted a licence to the VA for the purpose of decontaminating and decommissioning (D&D) the facility. The USACE is facilitating the process to ultimately achieve a termination of the license.

Prepared by the Environmental Survey and Site Assessment Program, Radiological Safety, Assessments and Training, Oak Ridge Institute for Science and Education, under interagency agreement (NRC FIN No. A-9093) between the U.S. Nuclear Regulatory Commission and the U.S. Department of Energy.

The St. Albans facility consists of 15 buildings. Of these buildings, three were associated with the nuclear medicine activities. The facilities were Building 64, a boiler plant that houses an inactive incinerator; Building 90, where the primary nuclear medicine operations occurred; and, Building 91 (basement level only).

Surveys of the facilities have identified radioactive contamination in excess of the NRC release criteria. A historical assessment of operations in the nuclear medicine laboratory revealed the possibility of a spill of liquid Sr-90 in late 1962. Surveys identified elevated activity in other laboratory areas, the ejector pit, and within laboratory drain systems. Additional characterization surveys, to supplement the 1998 characterization, were conducted from January to March 1999 in preparation for D&D activities. Some of the contamination was associated with piping that has been removed from the facility.

The NRC's Region I Office has requested that the Oak Ridge Institute for Science and Education's (ORISE), Environmental Survey and Site Assessment Program (ESSAP) perform a confirmatory survey on various portions (survey units) at the St. Albans VAECC in Queens, New York.

SITE DESCRIPTION

The St. Albans facility is situated on 55 acres at the intersection of 179th Street and Linden Boulevard in Queens, New York (Figures 1 and 2). The majority of the nuclear medicine activities occurred in Building 90 with Buildings 64 and 91 being support buildings. Building 91 connects via a connecting hall to the Administration building and Building 90 is located between Building 91 and the Administration Building (Figure 3).

Building 90 consists of a main floor that houses the former nuclear medicine laboratory, ejector pit, and bathrooms and a basement that had, until recently, been used for file storage. The basements of Building 91 and Building 90 are linked via a corridor. Building 91 houses audiometry, speech pathology, maintenance facilities, and personnel offices. The facility boiler plant for the VAECC is in Building 64 and it houses an inactive incinerator.

OBJECTIVES

The objectives of the confirmatory survey are to provide independent reviews and radiological data for use by the NRC in evaluating the adequacy and accuracy of the licensee's procedures and final status survey results, relative to the established derived concentration guideline level (DCGL) screening value for Sr-90.

RESPONSIBILITY

Work described in this survey plan will be performed under the direction of William L. (Jack) Beck, Program Director; Timothy Vitkus, Survey Projects Manager; and Wade Adams, Project Leader of ESSAP. The cognizant ESSAP site supervisor has the authority to make appropriate changes to the survey procedures as deemed necessary. After consultation with the NRC site representative, the scope of this survey plan may be altered. Deviations to the survey plan or procedures will be documented in the site logbook.

DOCUMENT REVIEW

ESSAP has reviewed the background documentation, radiological data, and other relevant information forwarded to ESSAP by the NRC. ESSAP reviewed the characterization, decommissioning and sampling work plans (S&W 1998, 2000a and b), the characterization and final status survey reports (Weston 1999a and b), the final decommissioning plan (Weston 2000a), and the draft justification for the Sr-90 DCGL (Weston 2000b). The review included the historical operation of the St. Albans facility to identify contamination potential. The review also encompassed a portion or all of the elements that the licensee implemented during decommissioning of the facility including: identification of the contaminants, DCGLs, classification of survey units (SU), survey and instrument calibration procedures, analytical procedures, and QA/QC data management. A comment letter documenting this review was submitted to the NRC (ORISE 2000a).

Information was evaluated to assure that areas identified as exceeding the site release criteria had undergone decontamination and that residual activity levels satisfied the established radiological release criteria.

PROCEDURES

A survey team from ESSAP will visit the St. Albans facility to perform visual inspections and independent measurements and sampling. The confirmatory survey activities will be conducted in accordance with the ORISE/ESSAP Survey Procedures and Quality Assurance Manuals (ORISE 2000b and 2000c). ESSAP will perform confirmatory surveys in a minimum of 50% of the SUs for which Weston has provided data—these SUs will be selected based on Weston's final status data. The percentage of confirmatory surveys conducted for each classification of SU may increase or decrease based on findings as the confirmatory survey activities progress. The specific survey procedures applicable to this survey are listed on pages 8 and 9 of this survey plan. The ESSAP survey team will perform a visual inspection of the site as well as collect independent measurements and samples. ESSAP will use the following radiological survey procedures to conduct confirmatory surveys.

REFERENCE SYSTEM

The reference grid systems established by Weston will be used where possible. Measurement and sampling locations on ungridded surfaces will be referenced to prominent building features or the existing grid. All measurement and sampling locations will be referenced on figures prepared by ESSAP.

SURFACE SCANS

Beta radiation surface scan coverage will depend on the SU classification. Weston has classified the areas according to the potential for radioactive contamination as either Class 1, 2, or 3. A description of each is as follows:

Class 1: Areas that have a significant potential for radioactive contamination (based on site operating history) or known contamination (based on previous radiological surveys).

Class 2: Areas contiguous to Class 1 that have a potential for radioactive contamination or known contamination, but are expected to be at contamination levels below DCGL.

Class 3: Any areas that are not expected to contain any residual contamination based on site operating history or previous radiological surveys.

Table 1: Survey Unit Classification

Survey Unit Number	Level of Decontamination Effort	Survey Unit Classification
001-Nuclear Medicine Lab	Major	Class 1
002 - Ejector Pit	Moderate	Class 1
004 - Men's Toilet	Moderate	Class 1
005 - Basement Level, Building 90	Minimal	Class 1
008 - Main Level, Building 90	None	Class 3

Scan coverage in SUs selected for confirmation will be as follows: up to 100% in Class 1 SUs, up to 25% of the structural surfaces in Class 2 SUs, and up to 5% of the structural surfaces in Class 3 areas—however, there are no Class 2 SUs listed in Table 1. Limited beta scans will be performed on exposed soil surfaces within the facility where drain lines have been removed or subfloor soils otherwise exposed. A cursory gamma scan will also be performed at various locations within the facility. Particular attention will be given to cracks and joints where material may have accumulated. Scans will be performed using gas proportional, GM, and NaI scintillation detectors coupled to ratemeters or ratemeter-scalers with audible indicators. Any locations of elevated direct radiation detected by surface scans will be marked for further investigation—to include additional surface scans, as deemed necessary to delineate contamination boundaries.

EXTERIOR AREA SCAN SURVEY

Scans for beta radiation will be performed along door entrances and available asphalt or concrete surfaces. cursory scans for gamma radiation will also be performed on contiguous ground surfaces around the St. Albans facility. Particular attention will be given to egress locations, piping

penetrations, and equipment access areas. Scans will be performed using gas proportional, GM, and NaI scintillation detectors coupled to ratemeters with audible indicators.

SURFACE ACTIVITY MEASUREMENTS

Construction material-specific backgrounds, performed in areas of similar construction but without a history of radioactive material use, will be used to correct gross surface activity measurements. Beta surface activity will be performed at up to 10 random locations in each SU selected for confirmatory evaluation with a minimum of 30 total measurement locations within the facility. Direct measurements for beta surface activity, will also be performed at any locations of elevated direct radiation identified by surface scans.

The majority of the direct measurements will be performed using gas proportional detectors—GM detectors will be used in areas that are inaccessible to the gas proportional detectors. All detectors will be coupled to ratemeter-scalers. Smear samples, for determining removable gross beta activity levels, will be collected from each direct measurement location. Although not considered a contaminant of concern, separate smear samples for removable H-3 contamination may be collected at up to 50% of the direct measurement locations and/or at suspect or randomly selected locations, at the discretion of the NRC site representative, as the sensitivity of the field instrumentation is not adequate to detect the low-energy beta emissions of H-3.

Any areas of residual activity, in excess of the site criteria, will be brought to the immediate attention of the licensee and the NRC site representatives. If additional remediation is performed during the ESSAP survey, follow-up measurements will be performed.

SOIL SAMPLING

Where subfloor soil have been exposed, surface soil samples will be collected from the initial 15 cm of soil, at up to 10 random or judgmental locations. An additional sample (from 15 to 30 cm) may be collected if the level of radioactivity increases after the initial surface sample is collected. Locations of elevated direct radiation identified by surface scans also will be sampled, including any locations identified around the exterior of the facility.

MISCELLANEOUS MEASUREMENTS AND SAMPLING

At the discretion of the NRC site representative, samples of miscellaneous material such as concrete, paint, sediment, drain, and dust residues may be collected from random locations that are not accessible for direct survey, or from locations of elevated direct radiation detected by surface scans. Measurements and sampling of remaining piping at the time of the confirmatory survey, may be performed to indicate whether residual contamination is present.

SAMPLE ANALYSIS AND DATA INTERPRETATION

Samples and data will be returned to ORISE's ESSAP laboratory in Oak Ridge, Tennessee for analysis and interpretation. Sample analyses will be performed in accordance with the ORISE/ESSAP Laboratory Procedures Manual (ORISE 2000d). Smears will be analyzed for gross beta activity using a low-background gas proportional counter—if additional smears are collected for H-3, those smears will be analyzed using a liquid scintillation counter. Direct measurement data and smear data will be converted to units of disintegrations per minute per 100 square centimeters (dpm/100 cm²). Soil and miscellaneous solid samples will be analyzed by wet chemistry analytical techniques for Sr-90 and the results reported in units of picocuries per gram (pCi/g).

The data generated will be compared with the release criteria established for the site. Additionally, SU data will be compared with the SU population mean generated by Weston. Results will be presented in a draft report and provided to the NRC for review and comment. Data and samples collected, as part of this survey, will be archived by ESSAP.

SITE RELEASE CRITERIA

Weston employed the alternate method described in MARSSIM Section 2.6.1; a direct comparison of each measurement result to the DCGL_w, to demonstrate compliance (NRC 1997). A degree of conservatism is built into this method, given that an elevated measurement criterion (DCGL_{EMC}) was not utilized. The NRC's Sr-90 screening derived concentration guideline levels (DCGLs) for structural surfaces of 8,700 dpm/100 cm²—will be used for data comparison (Weston 2000a).

Weston also submitted to the NRC a justification for a Sr-90 soil DCGL of 11 pCi/g which was approved by the NRC (Weston 2000b).

LIST OF CURRENT PROCEDURES

Applicable Sections of the ORISE/ESSAP Survey Procedures Manual (Revision 11, November 28, 2000) include:

Section 4.0 Quality Insurance and Quality Control

- 4.1 General Information
- 4.2 Training and Certification
- 4.3 Records and Reports
- 4.4 Equipment and Instrumentation
- 4.5 Sample Handling

Section 5.0 Instrument Calibration and Operational Check-Out

- 5.1 General Information
- 5.2 Electronic Calibration of Ratemeters
- 5.3 Gamma Scintillation Detector Check-Out and Cross-Calibration
- 5.5 GM Detector Calibration and Check-Out
- 5.6 Proportional Detector Calibration and Check-Out
- 5.11 Floor Monitor Check-out
- 5.13 Field Measuring Tape Calibration

Section 6.0 Site Preparation

- 6.2 Reference Grid System

Section 7.0 Scanning and Measurement Techniques

- 7.1 Surface Scanning
- 7.4 Beta Radiation Measurement

Section 8.0 Sampling Procedures

- 8.7 Determination of Removable Activity
- 8.8 Miscellaneous Sampling
- 8.15 Sample Identification and Labeling
- 8.16 Sample Chain-of-Custody

- Section 9.0 Integrated Survey Procedures
 - 9.1 Background Measurements and Sampling
 - 9.2 General Survey Approaches and Strategies
- Section 10.0 Safety and Contamination Control

Applicable procedures from the ORISE/ESSAP Quality Assurance Manual (Revision 10; March 10, 2000c) include:

- Section 1 ESSAP Quality Assurance Responsibilities
- Section 3 Training and Certification
- Section 4 Instrument Quality Control
- Section 7 Sample Chain-of-Custody
- Section 8 Data Quality Control
- Section 11 Critical Record Handling and Storage

TENTATIVE SCHEDULE

Measurement and Sampling	February 26 and 27, 2001
Sample Analysis	March 2001
Draft Report	April 2001

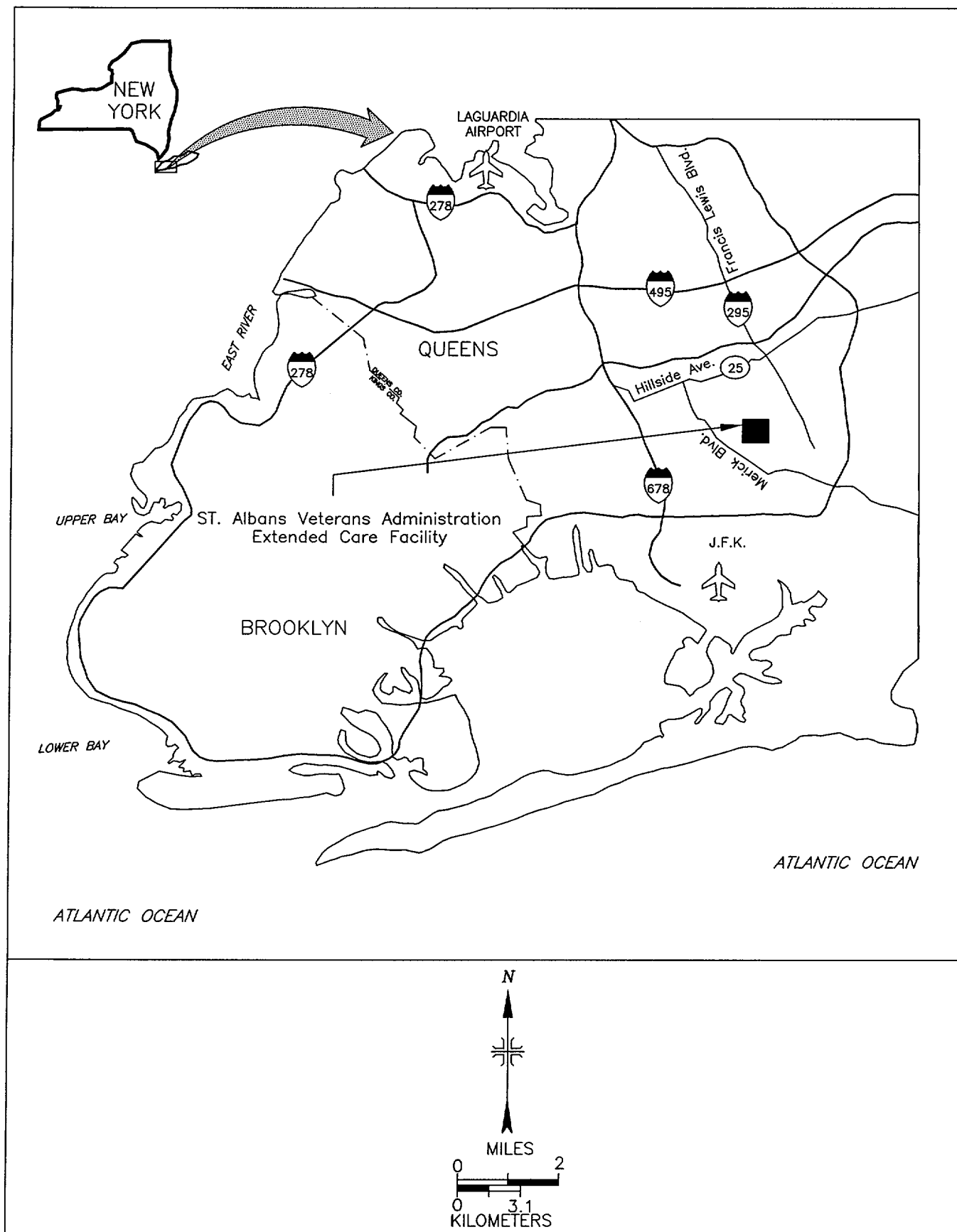


FIGURE 1: Queens County – Location of the St. Albans Veterans Administration Extended Care Facility

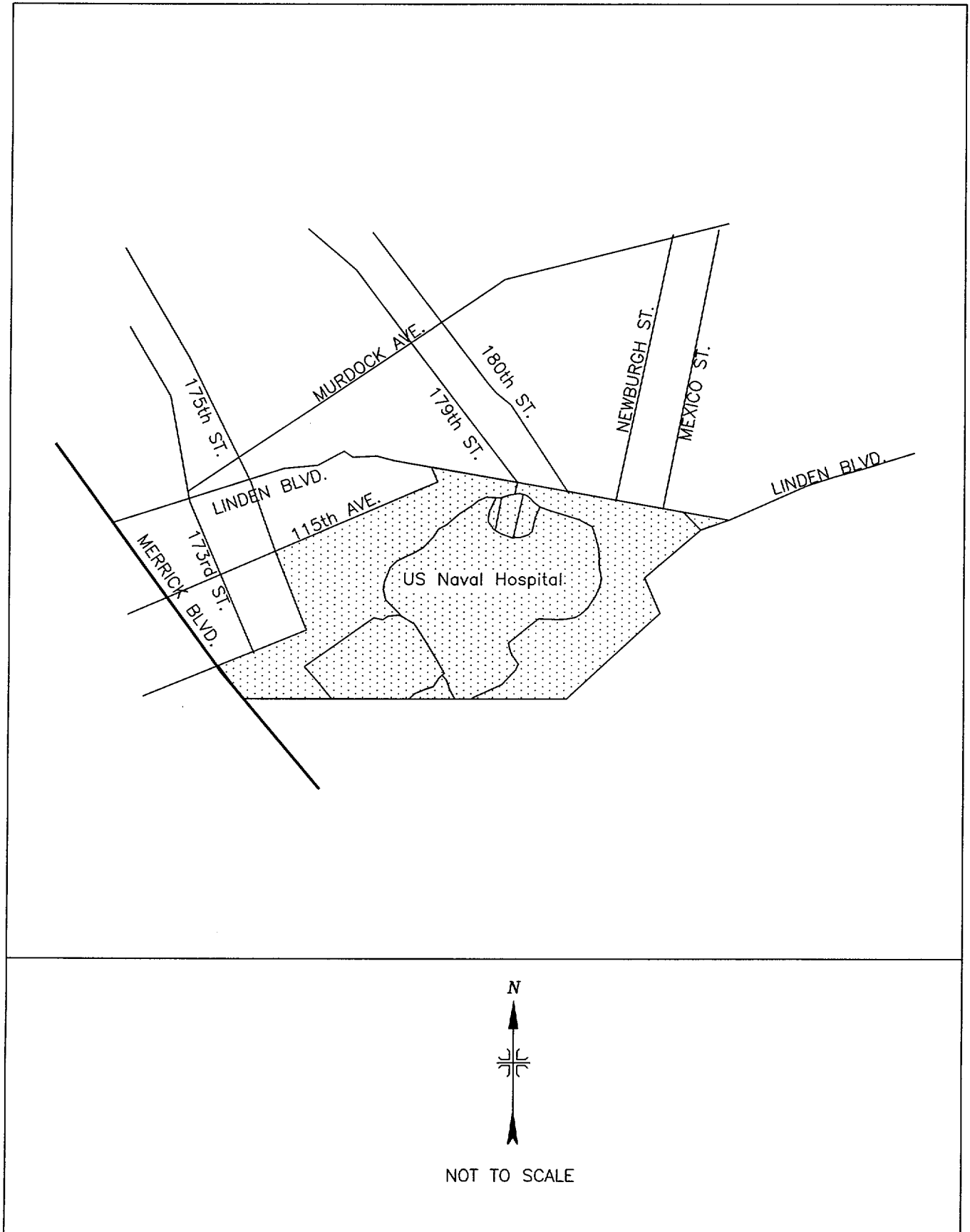


FIGURE 2: Street Plot — St. Albans Veterans Administration Extended Care Facility

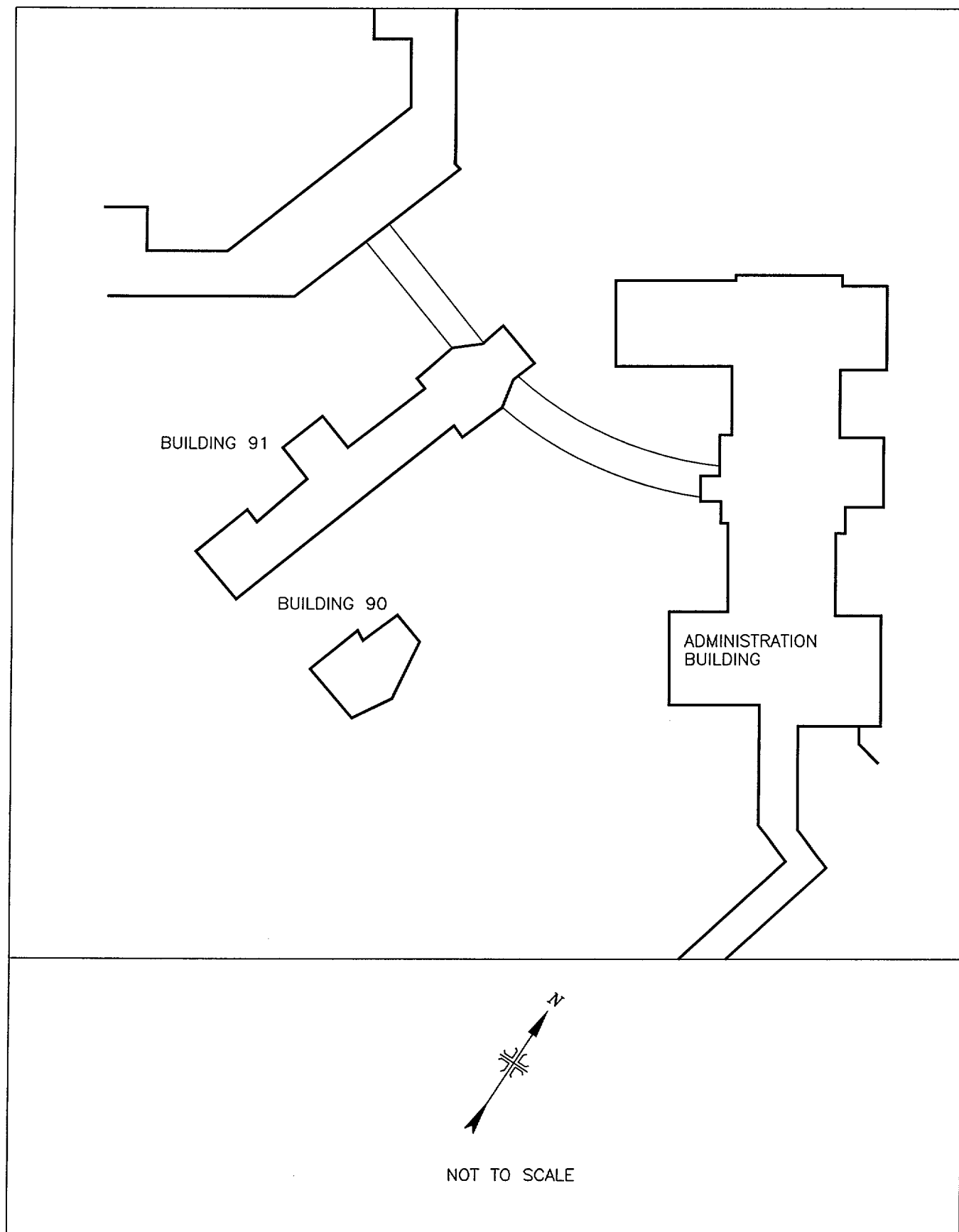


FIGURE 3: St. Albans Veterans Administration Extended Care Facility – Plot Plan

REFERENCES

- Oak Ridge Institute for Science and Education (ORISE). Document Review—Decommissioning Plan for the St. Albans Veterans Administration Extended Care Facility (Docket No. 30-34751, RFTA no. 00-012). Oak Ridge, Tennessee, October 26, 2000a.
- Oak Ridge Institute for Science and Education. Survey Procedures Manual for the Environmental Survey and Site Assessment Program, Revision 11. Oak Ridge, Tennessee, September 28, 2000b.
- Oak Ridge Institute for Science and Education. Quality Assurance Manual for the Environmental Survey and Site Assessment Program, Revision 10. Oak Ridge, Tennessee; March 10, 2000c.
- Oak Ridge Institute for Science and Education. Laboratory Procedures Manual for the Environmental Survey and Site Assessment Program, Revision 15. Oak Ridge, Tennessee; May 10, 2000d.
- Roy F. Weston, Inc. (Weston). Radiological Characterization Survey Report, St. Albans Veterans Administration Extended Care Center, Queens, New York. Contract No. DACA31-96-D-0006. Volumes I and II, Carle Place, New York; April 27, 1999a.
- Roy F. Weston, Inc. Draft Final Status Survey Report. Technical Support Services, St. Albans Veterans Administration Extended Care Center, Queens, New York. Contract No. DACA31-D-0006. Carle Place, New York; December 30, 1999b.
- Roy F. Weston, Inc. Final Decommissioning Plan, St. Albans Veterans Administration Extended Care Center, Queens, New York. Contract No. DACA31-D-0006. Carle Place, New York; July 6, 2000a.
- Roy F. Weston, Inc. Draft Version 4, Justification for Strontium-90 Soil DCGL, St. Albans Veterans Administration Extended Care Center, Queens, New York. Carle Place, New York; June 7, 2000b.
- Stone & Webster (S&W). Draft Work Plan - Volumes I and II for Radiological Characterization Survey, St. Albans Veterans Extended Care Facility, Queens, New York. Contract No. DACW33-94-D-0007. Boston, Massachusetts; July 23, 1998.
- Stone & Webster. Work Plan for Decontamination and Decommissioning, St. Albans Veterans Extended Care Facility, Queens, New York. Contract No. DACW33-97-D-0002. Boston, Massachusetts; August 2000a.
- Stone & Webster. Sampling and Analysis Plan for Decontamination and Decommissioning, St. Albans Veterans Extended Care Facility, Queens, New York. Contract No. DACW33-97-D-0002. Boston, Massachusetts; October 2000b.
- U.S. Nuclear Regulatory Commission (NRC). NUREG-1575, Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), Washington, DC: NRC; December 1997.

Attachment A

FY 2001 SPENDING PLAN		PERFORMANCE PERIOD		
		From	To	
Name of Laboratory: Oak Ridge Institute for Science and Education		Dec-00	Sep-01	
Title of Project: St. Albans		ORISE Number 400115.0771	Est. Project Cost \$34,260.00	
COST ELEMENTS	Oct-00	Nov-00	Dec-00	Jan-01
Direct Costs	\$0.00	\$0.00	\$2,595.00	\$0.00
Indirect Costs- (G&A)	\$0.00	\$0.00	\$831.00	\$0.00
Total Estimate Costs	\$0.00	\$0.00	\$3,426.00	\$0.00
Project Completion	0.00%	0.00%	10.00%	10.00%
COST ELEMENTS	Feb-01	Mar-01	Apr-01	May-01
Direct Costs	\$18,168.00	\$3,893.00	\$1,298.00	\$0.00
Indirect Costs- (G&A)	\$5,814.00	\$1,246.00	\$415.00	\$0.00
Total Estimate Costs	\$23,982.00	\$5,139.00	\$1,713.00	\$0.00
Project Completion	80.00%	95.00%	100.00%	100.00%
COST ELEMENTS	Jun-01	Jul-01	Aug-01	Sep-01
Direct Costs	\$0.00	\$0.00	\$0.00	\$0.00
Indirect Costs- (G&A)	\$0.00	\$0.00	\$0.00	\$0.00
Total Estimate Costs	\$0.00	\$0.00	\$0.00	\$0.00
Project Completion	100.00%	100.00%	100.00%	100.00%
ACTIVITY INFORMATION	Hours	Estimated Cost ^a	Comments:	
Site Visit	0.00	\$0.00	^a Estimated hourly costs are based on individual program personnel rates. Common costs are anticipated to provide project support.	
Document Review	19.00	\$2,580.00		
Presurvey	32.00	\$3,890.00		
Travel- Labor	22.00	\$2,620.00	^b Common costs are estimates of expected distributed general NR contract support costs for project management, administrative support, laboratory support, equipment maintenance and related costs that are not associated with a specific	
Travel- Other Expenses	0.00	\$3,620.00		
Survey Activities	38.00	\$4,320.00		
Report Preparation	43.00	\$5,360.00		
Sample Analysis	48.10	\$4,800.00		
Sample Disposal	0.00	\$0.00		
Other (Includes Common Cost)	0.00	\$7,070.00		
Total	202.10	\$34,260.00		

Submitted by: Environmental Survey and Site Assessment Program

Radiological Safety, Assessments, and Training Unit

Oak Ridge Associated Universities, Inc.

Attention: Tim Vitkus, 865-576-5073; email vitkust@orau.gov; Fax