

**U.S. Army Corps of Engineers
Baltimore District**

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**Remedial Design for Interim Removal Actions
Operable Units 1 and 2
Former Lake Ontario Ordnance Works
Lewiston and Porter
Niagara County, New York**

**Draft Long-Term Monitoring Plan
Component Two (Somerset Property)**

60% Design Submittal

Contract Number DACA31-96-D-0006
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September 1997

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
Baltimore District
10 South Howard Street
Baltimore, Maryland 21201

97P-2361

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**60% REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS
OPERABLE UNITS 1 AND 2
FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER
NIAGARA COUNTY, NEW YORK**

**LONG-TERM MONITORING PLAN
COMPONENT 2 – SOMERSET PROPERTY**

Prepared for

**U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT
10 South Howard Street
Baltimore, Maryland 21201**

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LIST OF ACRONYMS

ACM	asbestos-containing materials
CENAB	U.S. Army Corps of Engineers, Baltimore District
Chem-Trol	Chem-Trol Pollution Services, Inc.
CWM	Chemical Waste Management
DAR	Design Analysis Report
DOD	Department of Defense
DOE	Department of Energy
EE/CA	Engineering Evaluation/Cost Analysis
HTRW	Hazardous, Toxic and Radioactive Waste
LOOW	Lake Ontario Ordnance Works
LTM Plan	Long-Term Monitoring Plan
PRDI	Preliminary Remedial Design Investigation
QA/QC	quality assurance/quality control
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
SAP	Sampling and Analysis Plan
SCA	SCA Chemical Services, Inc.
Somerset	Somerset Group
SOW	scope of work
SSHPP	Site Safety and Health Plan
TSD	treatment, storage, and disposal
USACE	U.S. Army Corps of Engineers
WESTON®	Roy F. Weston, Inc.

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The U.S. Army Corps of Engineers, Baltimore District (CENAB) has retained Roy F. Weston, Inc. (WESTON®) to develop the remedial design for interim removal actions for Operable Unit No. 1 and 2 (OU No. 1 and OU No. 2) at the former Lake Ontario Ordnance Works (LOOW) located in Niagara County, New York. The remedial design is being performed in two phases in accordance with the CENAB scope of work (SOW) dated 23 May 1996. Phase 1 is the predesign phase, and consists of the preparation of the planning documents and the completion of the Preliminary Remedial Design Investigation (PRDI) and PRDI Report; this phase has been completed.

A summary of the results of the previous investigations is provided in Section 2 of the Remedial Design Work Plan (prepared by WESTON for CENAB) dated October 1996. The results of the PRDI are presented in the PRDI Report (prepared by WESTON for CENAB) dated May 1997.

Phase 2 is the design phase, and includes the development of the Remedial Design plans and specifications. The remedial action design will be completed in the following stages: 30%, 60%, 90%, and 100% designs. The 30% design was presented in the Preliminary Design Analysis Report (prepared by WESTON for CENAB) dated April 1997.

This document presents the Draft Long-Term Monitoring Plan - Component 2, Somerset Group (Somerset) Property, which is part of the 60% intermediate Design Analysis Report (DAR) submittal.

Under the 60% intermediate design task, the agreed-upon responses to 30% review comments are to be incorporated, and the following deliverables are to be prepared:

- Intermediate DAR.
- Preliminary Contract Plans.

- Preliminary performance-based contract specifications.
- Code B Cost Estimate (M-CACES Gold Software).
- Draft Environmental Compliance Checklist and Draft Permit Application Report, which summarizes environmental compliance issues and assembles application forms, procedures, supporting data, and calculations for identified permit applications.
- Draft Long-Term Monitoring Plan.

1.2 OBJECTIVE AND SCOPE

The purpose of the Long-Term Monitoring Plan (LTM Plan) is to ensure that there are no long-term adverse affects to the environment following the implementation of the remedial action.

The scope of the LTM Plan consists of the following activities:

- Biannual post remediation inspection of asbestos-containing materials (ACM) abatement areas, chemical lift station, and former chemical waste sewer line. Maintenance activities will be performed, as necessary, based on the results of the inspections.
- Review of results of the current groundwater monitoring program at the LOOW.

1.3 GENERAL SITE BACKGROUND AND AREAS OF CONCERN

1.3.1 General Background

The former LOOW site is located within the Towns of Lewiston and Porter in Niagara County, New York (Figure 1-1). The site is located approximately 10 miles north of the City of Niagara Falls, NY.

The original site encompassed approximately 7,500 acres with actual Department of Defense (DOD) site activities having occurred on 2,500 acres. During the early 1940s, the LOOW site was used as a manufacturing plant producing TNT for use in World War II. Once completed, the complex contained a power plant, hospital, fire department, a water supply system adequate for a

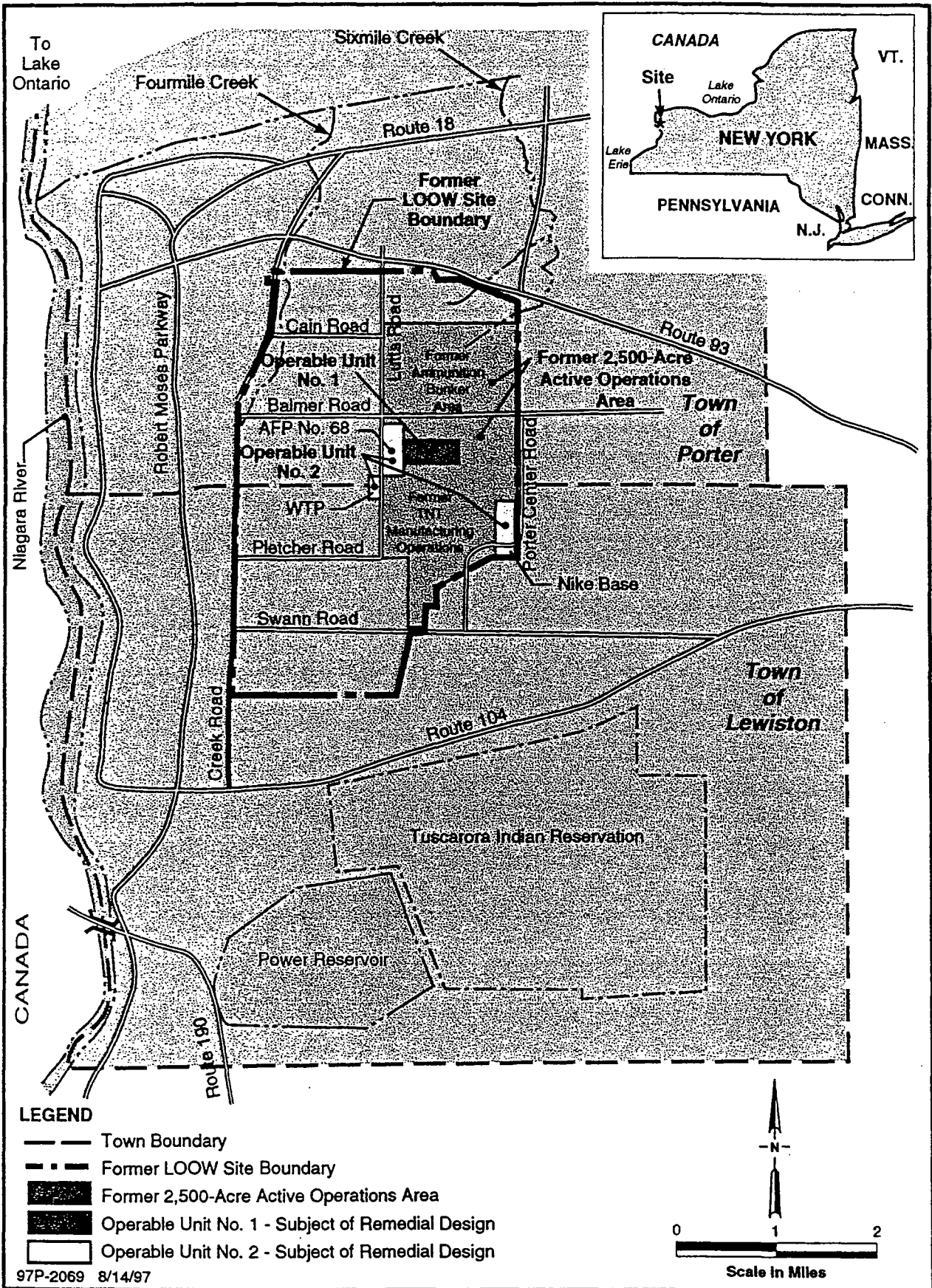


FIGURE 1-1 LOOW LOCATION MAP

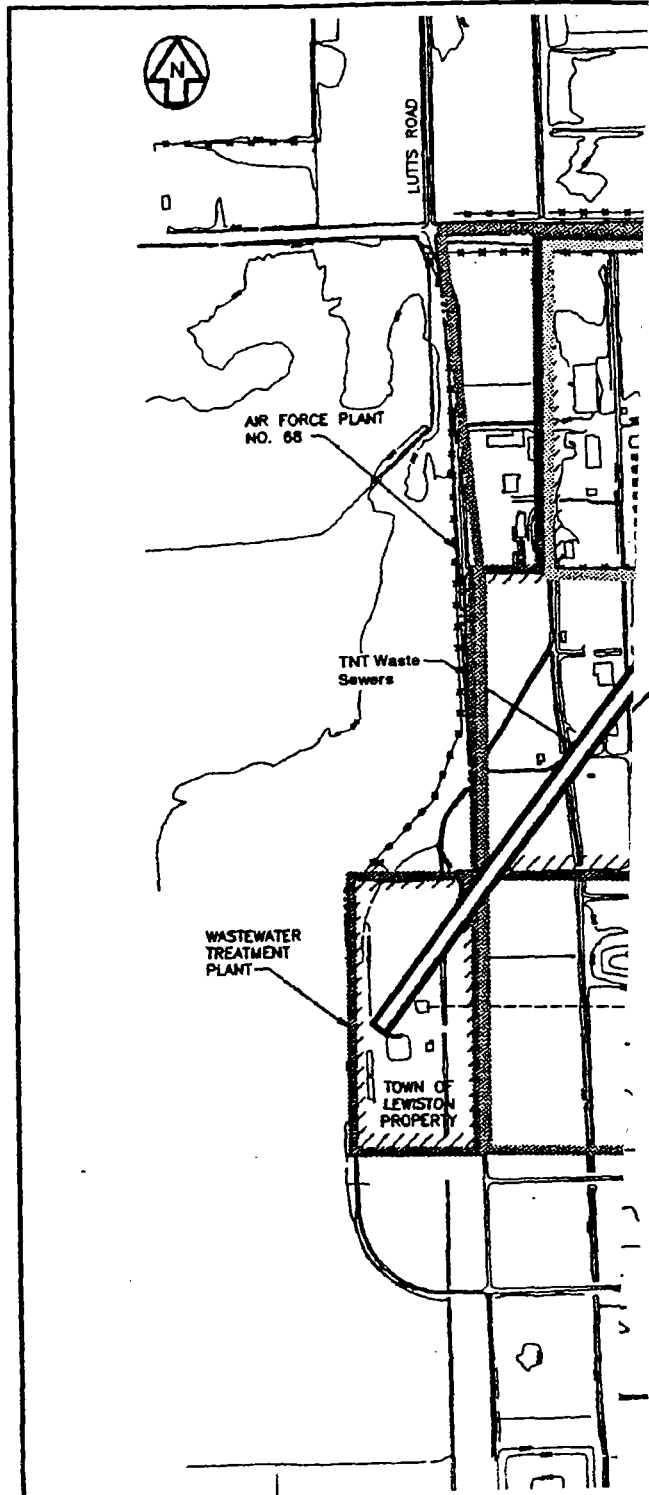
population of 100,000, and water supply and wastewater treatment system of underground water, sewage, acid, and TNT pipelines.

Wastewater from the TNT manufacturing operation, as well as stormwater and sanitary sewage, was transferred through an underground sewer network to a wastewater treatment plant located in the western portion of the TNT plant. The TNT pipelines ran as one pair of east-west trending lines across the TNT production area before being routed south to the wastewater treatment plant at the west end of the production line. Following the decommissioning of the TNT plant in July 1943, the majority of the LOOW facility was sold to private citizens with the government retaining the former active 2,500-acre portion of the site.

Portions of the LOOW site have since been used by several branches of DOD and the Department of Energy (DOE) for various manufacturing and storage activities, including the pilot production of high-energy fuels. In 1955, the Navy and Air Force acquired 360 and 200 acres, respectively, of the former TNT plant.

In 1972, Chem-Trol Pollution Services, Inc. (Chem-Trol) acquired portions of the LOOW for the development of a hazardous waste treatment, storage, and disposal (TSD) facility. Chem-Trol was acquired by SCA Chemical Services, Inc. (SCA) in 1973, and was subsequently acquired by Chemical Waste Management (CWM) in the early 1980s. In 1969, the Somerset Group (Somerset) obtained an approximate 100-acre section of the former LOOW property that contained AFP-68. Around 1979, the southern half of the former AFP-68 (about 50 acres) was sold to SCA. This section is currently owned by CWM. The portions of the former TNT and AFP-68 site specifically addressed by the PRDI are situated on property currently owned by CWM and the Town of Lewiston. CWM operates the site as a Resource Conservation and Recovery Act (RCRA) TSD facility. The portion of the site owned by the Town of Lewiston is currently unused.

The focus of the PRDI was the sampling of the TNT pipelines (Figure 1-2) and two chemical lift stations (Area 22 and Area 24) of the former chemical waste sewer line, which are all located

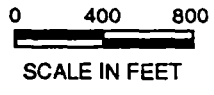


LEGEND

- LOOW RI/FS OPERABLE UNIT NO. 1
- LOOW RI/FS OPERABLE UNIT NO. 2
- CWM PROPERTY
- SOMERSET PROPERTY
- TNT WASTE PIPELINE
- CHEMICAL WASTE SEWER SYSTEM AND LIFT STATIONS

NOTE:

1. ALL LOCATIONS ARE APPROXIMATE



LAKE ONTARIO ORDNANCE WORKS

97P-2070 8/14/97

FIGURE 1-2 LOOW STUDY AREA LOCATION MAP

within the CWM property. A portion of the former chemical waste sewer line and one lift station are located on the Somerset Property. A portion of the TNT pipelines located within the former wastewater treatment plant is owned by the Town of Lewiston.

1.3.2 Areas of Concern

The Remedial Investigation/Feasibility Study (RI/FS), Engineering Evaluation/Cost Analysis (EE/CA), PRDI Report, and Preliminary DAR for the LOOW site identified areas for non-time critical removal actions within operable units, OU No. 1 and OU No. 2 (Figures 1-1 and 1-2); only the Component 2, Somerset Property, items are listed below:

- OU No. 2
 - AFP-68 consisting of the following:
 - ♦ Chemical waste sewer system sewage and sludges; portion on Somerset Property.
 - ♦ Loose ACM located within and around several of the former facility buildings.
 - ♦ Miscellaneous containers of hazardous liquids and oils.

The removal actions related to the miscellaneous containers of hazardous liquids and oils do not require long-term monitoring activities since the materials of concern will be permanently removed from LOOW, and there are no activities that require post-remediation inspection (i.e., the ground will not be disturbed, etc.).

1.4 PROJECT SCHEDULE

Long-term monitoring activities will be conducted on a biannual basis (i.e., 2 times per year). A summary report of activities conducted, which will include data and other findings, will be submitted to CENAB one time per year, no later than 3 months after the second monitoring event for that year.

1.5 DOCUMENT OUTLINE

This document has been organized as follows:

- Section 1—Introduction
- Section 2—Post Remediation Monitoring Procedures
- Section 3—Sampling and Analysis Plan
- Section 4—Site Safety and Health Plan

2. POST REMEDIATION MONITORING PROCEDURES

2.1 BASIS FOR PROPOSED MONITORING ACTIVITIES

This subsection presents a brief summary of the removal actions to be performed for Component 2 at LOOW to provide a basis for the long-term monitoring activities.

2.1.1 Chemical Waste Sewer System and Lift Station

The portions of the chemical waste sewer system located on the Somerset property, consisting of the chemical waste lift station in Area 31 and associated interconnecting sewer lines, are designated for removal actions.

Accumulated water and sludges will be removed from the chemical lift stations. The chemical lift station and chemical sewer lines will be cleaned by high-pressure water jets to remove any solids collected in the lift station/pipelines. When power washing and removal operations have been completed, the system will be sealed (at ground surface) to prevent unauthorized access into the lift station.

For sewer lines/lift station left in-place, there is little need for long-term monitoring since contaminants will be removed by washing and access to the lift stations will be sealed; however, evaluation of ongoing groundwater monitoring at LOOW will be conducted to ensure that there are no post-remediation impacts to groundwater due to the in-place closures. In addition, inspections and maintenance, if necessary, will be conducted to ensure that any new vegetation in the disturbed areas remains intact and no erosion or ponding occurs, and to ensure that sealed access points are maintained.

2.1.2 Loose ACM

Loose ACM identified on the Somerset Property is to be removed by a licensed asbestos contractor and transferred to one of several nearby permitted 6NYCRR Part 360 landfills. Other asbestos abatement activities may be conducted as part implementation of the remedial design.

2.2 MONITORING ACTIVITIES

There are several activities that will be maintained throughout the post-remediation period. These activities are discussed in the following subsections and consist of:

- Review of results of the current groundwater monitoring program at the LOOW.
- Post-remediation inspection of ACM abatement areas, chemical lift station, and former chemical waste sewer line, to be conducted two (2) times per year. Maintenance activities will be performed, as necessary, based on the results of the inspections.

2.2.1 Water Quality Monitoring and Review of Data from Current Groundwater Monitoring

The data from results of ongoing groundwater monitoring at LOOW (not part of this plan) will be evaluated; the results of the ongoing monitoring will be provided by CENAB. The results will be compared to current New York regulations and guidance, consisting of the following or other criteria approved by CENAB: Table 1 of 6NYCRR Part 703.5 (Surface Water and Groundwater Quality Standards and Groundwater Effluent Standards); and NYS TOGs (Ambient Water Quality Standards and Guidance Values). A report consisting of a summary of the evaluation/review of ongoing monitoring data will be prepared in a letter report format and will be submitted to CENAB in accordance with Subsection 1.4 of this LTM Plan.

2.2.2 Post-Remediation Inspections

Post-remediation inspections will be conducted for the purpose of monitoring site conditions and determining the need for maintenance activities at the site. A site inspection report will be completed after each inspection and will be maintained on file. The report will note the condition of the site and will identify areas of the site that may require additional maintenance work. The reports will be submitted with the groundwater monitoring report as described in Subsection 2.2.1 of this LTM Plan. *Note: An example site inspection form will be provided in the 90% design.*

Post-remediation inspections will include, at a minimum, the following:

- Note condition of new vegetation in the remediated areas (damaged, stressed, sparse areas, intact, etc.).
- Note any soil settlement, erosion, or ponding.
- Note any changes to ACM abatement areas.
- Note any weathering or damage to reconstructed roads/gravel areas.
- Note condition of fences, signs, gates, and locks, as applicable.
- Note condition of sealed lift station and other pipeline access areas (including weathering or other physical damage or stress such as vandalism).

Maintenance activities (such as regrading, revegetation, or repairing areas disturbed by erosion, weathering, or vandalism), if deemed necessary, will be recommended in the inspection reports and will be conducted following approval by CENAB.

3. SAMPLING AND ANALYSIS PLAN

The long-term monitoring activities for Component 2 will be conducted in accordance with the procedures in this LTM Plan, as well as those presented in the Sampling and Analysis Plan (SAP). The SAP provides the sampling protocols, sample handling, analytical methods, and related quality assurance/quality control (QA/QC) requirements, data reporting, and presentation associated with the above field activities. The SAP will be prepared by the Contractor who will be performing the long-term monitoring and will be submitted to CENAB for approval. The SAP for Component 2 may be combined with the SAP for Component 1, if the same Contractor is to perform work for both Component 1 and Component 2. The SAP will be prepared in accordance with: *Chemical Data Quality Management for Hazardous Waste Remedial Activities*, U.S. Army Corps of Engineers (USACE), ER 1110-1-263, October 1990 (or most current edition) and *Hazardous, Toxic and Radioactive Waste (HTRW) Guidance for Civil Works Projects*, USACE, ER 1165-2-132, June 1992, or other document(s) as approved by CENAB.

The SAP will include, as a minimum, the following to cover all long-term monitoring activities, including work by subcontractors:

- A description of the quality control organization, including a chart showing lines of authority.
- The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a project QA/QC function.
- Procedures for scheduling, reviewing, and managing documentation and submittals.
- Control, verification, and acceptance testing/laboratory procedures for each specific test/analysis (where applicable) to include the name and description of analysis, test frequency, and person responsible for each test. (Laboratory facilities will be approved by CENAB.)
- Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

- Procedures for tracking deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.
- Reporting procedures, including proposed reporting formats.
- A description of work to be done.

As an alternative to preparing a SAP, if approved by CENAB, the following document may be used with appropriate modifications or addendum to reflect the new scope of work: *Preliminary Remedial Design Investigation Former Lake Ontario Ordnance Works, Lewiston and Porter, Niagara County, New York, Sampling and Analysis Plan*, prepared by WESTON for CENAB, October 1996.

4. SITE SAFETY AND HEALTH PLAN

The long-term monitoring activities for Component 2 will be conducted in accordance with the procedures and protocols in the Site Safety and Health Plan (SSHP). The SSHP will be prepared by the Contractor who will be performing the long-term monitoring and will be submitted to CENAB for approval. The SSHP may be combined for Components 1 and 2 provided that the same Contractor is to perform work for both Component 1 and Component 2. The SSHP must comply with the following: *Safety and Occupational Health Document Requirements for Hazardous Toxic and Radioactive Waste (HTRW) Activities*, U.S. Army Corps of Engineers, Department of the Army, ER 385-1-92, December 1991 (or most current edition), or other document(s) as approved by CENAB; and applicable federal, state, and local safety and occupational health laws and regulations (including, but not limited to, Occupational Safety and Health Administration [OSHA] Standards, 29 CFR 1910, especially Section .120, *Hazardous Waste Site Operations and Emergency Response* and 29 CFR 1926, especially Section .65, *Hazardous Waste Site Operations and Emergency Response*).

The SSHP will cover on-site work to be performed by the Contractor and all subcontractors. The Contractor's Safety and Health Manager will be responsible for the development, implementation, and oversight of the SSHP. The SSHP will establish, in detail, the protocols necessary for the anticipation, recognition, evaluation, and control of hazards associated with each task performed as part of the long-term monitoring activities. The SSHP will address site-specific safety and health requirements and procedures based on site-specific conditions. The level of detail provided in the SSHP will be tailored to the type of work, complexity of operations to be performed, and hazards anticipated.

As an alternative to preparing a SSHP, the following document may be used: *Preliminary Remedial Design Investigation Former Lake Ontario Ordnance Works, Lewiston and Porter, Niagara County, New York, Site Safety and Health Plan*, prepared by WESTON for CENAB, October 1996. If this existing SSHP is used, an addendum must be prepared to cover the project-

specific tasks (e.g., monitor well sampling and site inspections) in accordance with the protocols discussed in this section.