DEPARTMENT OF THE AIR FORCE
AIR FORCE BASE CONVERSION AGENCY

November 6, 1998

MEMORANDUM FOR NYS DEPARTMENT OF ENVMTL CONSERVATION
ATTN: MR. JAMES QUINN
Bureau of Eastern Remedial Action
50 Wolf Road
Albany NY 12233-7010

FROM: AFBCA/DA Plattsburgh
426 US Oval Suite 2200
Plattsburgh NY 12903

SUBJECT: Work Plans for Remove Oil/Water Separators and Solvent Pipelines, Contract No. F41622-97-M-6003

Attached for your information and files are the final versions of the work plans for the subject contract. All plans have been revised in accordance with your comments, and the responses to the comments are attached as well.

The contractor intends to mobilize on site for this project during the week of November 30, 1998, with on-site work commencing immediately thereafter. Project completion is scheduled for December 25, 1998. We will keep your office informed of any changes to this schedule.

As stated in our May 28, 1998 letter, it is the intent of this project to remove the Nose Dock 8 sump to allow for sampling underneath, and accomplishment of this project does not exclude the possibility of future regulatory requirements should significant contamination be discovered.

You can direct any questions or comments to Steve Gagnier at (518) 563-2871.

MICHAEL D. SOREL, PE
BRAC Environmental Coordinator

Attachments:
1. Sampling and Analysis Plan, Sump Equip Removal (incl Response to Comments) (3 cys)
2. Work Plan, Remove Oil Water Separators and Solvent Pipelines (3 cys)
3. Field Sampling Plan (3 cys)
4. Response to Comments, Work Plan & Field Sampling Plan (3 cys)

cc:
USEPA (Mr. Bob Morse)

WORK PLAN

PROJECT TITLE: Remove Oil Water Separators and Solvent Pipelines, Plattsburgh, New York

Contract No.: F41622-97-M-6943

Project No.: THWA 97-6003

CONTRACTOR: J&D Enterprises of Duluth, Inc.
5197 Lavaque Road
Duluth, MN 55803

Version 5.2

29 October 1998

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LIST OF APPENDIXES

LIST OF ACRONYMS AND ABBREVIATIONS

ARAR	Applicable Or Relevant And Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensative, and Liability Act
COR	Contracting Officer's Representative
DEQPPM	Defense Environmental Quality Program Policy Memorandum
DoD	Department of Defense
EPA	Environmental Protection Agency
FSP	Field Sampling Plan
IRP	Installation Restoration Program
NCP	National Contingency Plan
OWS	Oil/Water Separator
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
SARA	Superfund Amendments and Reauthorization Act
SOW	Statement of Work
WP	Work Plan

Work Plan
8 April 1998
Plattsburgh AFB, NY
Remove Oil/Water Separators and Solvent Pipelines
Contract/Purchase Order #: F41622-97-M-6943
Version 5.2
29 October 1998

1.0 INTRODUCTION

J&D Enterprises of Duluth, Inc. (J&D) will be removing solvent pipelines and oil/water separators from Plattsburgh Air Force Base in Plattsburgh, New York. Adirondack Environmental Associates, Inc. (AEA) of Plattsburgh will be the onsite environmental consultant during project work, providing soil screening, soil and waste sampling, and ambient air monitoring during removal activities to quantify impact to subsurface soils, document the presence of hazardous waste, and help maintain a safe working environment during the completion of project objectives, as per contract plans and specifications.

All work in this project is to be performed at the following locations on the base: Nose Dock 8 (SS-016)(Building 2890); solvent piping runs leading to Building 2890 from the former Aircraft Washrack (Facility 2891) and the Industrial Pretreatment Plant (Building 2887); and the former location of Building 2626. The Nose Dock 8 site is an EPA designated National Priorities List (NPL) or CERCLA site.

The project work outlined in this work plan is not intended to provide site closure. The possibility of additional regulatory requirements exist, dependent on soil analytical results obtained during the removal activities.

1.1 PROJECT ORGANIZATION

J&D Enterprises of Duluth, Inc:	Rick Toland, Project Manager Mark McKinnon, Site Foreman	(218) 729-9105
Adirondack Environmental Associates, Inc:	Guy B. Fenwick	(518) 563-5726
Contracting Officer's Representative:	Alfred N. M. Horner	(518) 563-2871 (Ext. 426)

2.0 SUMMARY OF EXISTING INFORMATION

Site maps and analytical results from previous sampling activity in the vicinity of Building 2890 are presented in Appendix A. Additional site maps may be obtained under separate cover.

2.1 SITE-SPECIFIC ENVIRONMENTAL SETTING

Nose Dock 8 (Building 2890): The oil/water separator sump located in Building 2890 is an EPA-designated National Priorities List (NPL) or CERCLA site. The oil/water separator sump collected solvent waste from Building 2890 and other nearby buildings through a system of piping runs (see following paragraph). The sump has been filled with concrete, but approximately 6 inches of liquid product were observed in the sump bottom during a recent attempt to drill through the concrete to sample underlying soil. The sump and contents, and adjacent connected piping, are to be removed and disposed.

Other sites included in project: The Aircraft Washrack Facility (Building 2891) and the Industrial Pretreatment Plant (Building 2887) are connected to the oil/water separator sump in Building 2890 through a system of underground piping runs. These piping runs are to be excavated, removed and disposed of in conjunction with sump removal.

Former Building 2626, located approximately 5400 feet southeast of Building 2890, contains a sump and grease trap used for food processing activities within the building. The sump and grease trap are to be removed and disposed.

3.0 PROJECT TASKS-SITE SPECIFIC

3.1 NOSE DOCK 8 (BUILDING 2890)

J&D will perform the following set of tasks at this location:

* removal, storage, manifesting and documentation, handling and disposal of the remainder of the liquid located within the oil/water separator sump;

* demolition and disposal of the concrete floor slab surrounding the oil/water separator sump;

* removal and analytical sampling of concrete fill material from the oil/water separator sump, temporary storage of debris on site pending receipt of analytical results;

* removal, demolition and disposal of the sump (if separate from concrete fill material);

* excavation, removal and cleaning of cast iron piping associated with the oil/water separator sump within the dimensions of the removed floor slab;

* collection and analytical sampling of sump/piping wash and rinse effluent, temporary storage of effluent on site pending receipt of analytical results;

* field screening of soils during excavation activity, and segregation and stockpiling of excavated soils based on field screening results;

  (note: collection of analytical samples of in-situ and stockpiled soils will be performed by a separate contractor (URS Greiner)

* disposal of non-hazardous demolition debris at an approved construction and demolition (C&D) landfill;

* manifesting, documentation, handling and disposal of any generated hazardous waste, in accordance with contract specifications and federal, state, and local regulations (waste manifests will be signed by an AFBCA representative prior to removal offsite);

* installation of a horizontal soil vapor extraction (SVE) well within the sump excavation, in accordance with contract specifications;

* backfilling of the sump excavation with previously excavated native soils determined to be non-impacted by field screening, and supplemented with approved offsite fill material, in accordance with contract specifications;

* restoration of the concrete floor slab, in accordance with contract specifications.

Liquid from the bottom of oil/water separator sump and adjacent piping will be pumped out and put into drums prior to sump removal. Handling procedures for residual liquid in the sump and associated piping are described in Sections 4.4.1, 4.4.2 and 4.7 of this document.

The east side of the concrete floor will be saw-cut to facilitate concrete removal. The concrete slab in the vicinity of the oil/water separator sump will be demolished and removed within the dimensions shown on the contract drawings. Methodologies for concrete removal are described in Section 4.3 of this document.

The east side of the oil/water separator sump will be excavated to locate and remove the valve and 6" cast iron effluent pipe connecting the separator sump to the waste treatment plant. A pit will be excavated on the south side of the oil/water separator sump within the dimensions shown on the contract drawings, and the exposed section of 6" cast iron influent pipe will be removed. Concrete fill within the oil/water separator sump will be demolished with a hydraulic hammer, and the broken concrete will be cleaned out using a dedicated backhoe. Concrete fill will be removed in this manner until the weight of the sump is sufficiently reduced for the remaining portion to be lifted intact from the excavation.

A minimum of two grab chip samples of the concrete fill debris will be collected from two discrete areas within the oil/water separator sump: the lower portion, which has been in contact with residual liquid and is therefore more likely to be hazardous waste; and the upper portion, which is less likely to be hazardous waste. Debris from the upper and lower portions of the sump will be segregated based upon visual observations of staining. Chip samples will be analyzed for the characterization of hazardous waste. Concrete debris will be stored on site, pending receipt of analytical results. Methodologies for these procedures are described in Section 4.4.1 of this document.

The interior of the oil/water separator sump and removed associated piping will be washed and rinsed. Wash and rinse effluents will be collected, sampled and analyzed for the

characterization of hazardous waste, and temporarily stored on site pending receipt of laboratory results. The methodologies for these procedures are described in Section 4.4.1 of this document.

Laboratory samples for the characterization of hazardous waste have already been collected from the residual liquid present in the sump, and analytical results are presented in Appendix A. The sump residual liquid will be handled as RQ, Hazardous Waste Liquid N.O.S., 9, NA3077, III. All other materials determined by laboratory analyses to be hazardous waste will be handled according to methodologies described in Section 4.4.2 of this document.

The cleanliness of washed and rinsed piping and sump remnants will be determined by the analytical results for samples collected from the rinse effluent. Cleaned piping and sump remnants thus determined to be non-hazardous, and other non-hazardous concrete demolition debris, will be disposed of at an approved C&D landfill. Methodologies for these procedures are described in Sections 4.3 and 4.4.3 of this document.

Soils encountered during sump excavation activity will be field screened for the presence of volatile organic compounds (VOCs) with photoionization detectors (PIDs) calibrated to manufacturer's standards. Excavated soils with PID readings 5 parts per million (ppm) or greater above established background levels will be segregated from soils with readings less than 5 ppm above established background levels, and stockpiled in locations designated by the contracting officer. Field screening methodologies for excavation activity are described in Section 4.5 of this document and in the Field Sampling Plan.

In-situ soil samples for field screening will be collected from the following locations in the finished sump excavation:

* the base of the former oil/water separator sump;

* points beneath any joints in the above effluent pipe;

* any areas of visible soil staining.

Note: laboratory analytical soil sampling for sump excavation activity will be performed by a separate contractor (URS Greiner). Samples will be collected from the in-situ locations in the finished sump excavation, and from stockpiled excavated soils with PID readings 5 ppm or greater above established background levels. Sampling will be performed in accordance with URS Greiner's field sampling plan dated 25 June 1998.

Ambient air quality will be monitored in the immediate vicinity of sump removal and soil excavation activities, according to methodologies described in Section 4.8 of this document. All personnel within the job site will work in compliance with site health and safety requirements discussed in Sections 4.7 through 4.11 of this document and outlined in the Site Safety and Health Plan, according to contract specifications.

The excavation will be partly backfilled to the grade specified on contract drawings, and a horizontal soil vapor extraction (SVE) well will be installed. After well installation, the excavation will be completely backfilled and compacted to finish grade for concrete. Excavation backfilling will be performed according to methodologies described in Section 4.12 of this document. Surface restoration will be performed according to contract specifications.

This facility has an ongoing remediation treatability study underway that involves groundwater extraction and soil vapor extraction from the vicinity of the oil/water separator sump. All work will be coordinated so as to minimize interference with this study. The work will be performed in accordance with the current base fire and safety regulations, and shall be closely coordinated with the AFBCA and PARC.

3.2 AIRCRAFT WASHRACK (FACILITY 2891) AND INDUSTRIAL PRETREATMENT PLANT (BUILDING 2887)

J&D will excavate and remove all solvent supply piping running from the above buildings to the oil/water separator sump located in Nose Dock 8 (Building 2890). These specified piping runs and utility conduits are shown on the contract drawings.

J&D will perform the following set of tasks at this location:

* drainage, collection, storage and sampling of any residual liquid located in the piping runs;

* excavation, removal and cleaning of piping runs;

* collection and analytical sampling of piping wash and rinse effluent, temporary storage of effluent on site pending receipt of analytical results;

* field screening of soils during excavation activity, segregation and stockpiling of excavated soils based on field screening results, and collection of analytical

samples of in-situ and stockpiled soils;

* sale of cleaned piping to an approved scrap metal dealer, or disposal of cleaned piping at an approved C&D landfill;

* manifesting, documentation, handling and disposal of any generated hazardous waste in accordance with contract specifications and federal, state and local regulations (waste manifests will be signed by an AFBCA representative prior to removal offsite);

* backfilling of trench excavation with previously excavated native soils determined to be non-impacted by field screening, and supplemented with approved offsite fill material, in accordance with contract specifications.

Trench excavation activity for piping run and conduit removal will begin at the north wall of Building 2890. Approximately 2000 feet of trenching is anticipated for the entire project. Trenches will be constructed according to dimensions and specifications presented in the contract documents.

Solvent piping runs will be partly exposed prior to removal. Any residual liquids will be collected, sampled and analyzed for the characterization of hazardous waste, and temporarily stored on site pending receipt of laboratory results. The methodologies for these procedures are described in Sections 4.4.1 and 4.7 of this document.

All removed piping will be washed and rinsed. Wash and rinse effluents will be separately collected, sampled and analyzed for the characterization of hazardous waste, and temporarily stored on site pending receipt of laboratory results. The methodologies for these procedures are described in Section 4.4.1 of this document.

All materials characterized as hazardous waste will be handled according to methodologies described in Section 4.4.2 of this document.

The cleanliness of washed and rinsed piping will be determined by the analytical results for samples collected from the rinse effluent. Cleaned piping thus determined to be non-hazardous will be either sold to an approved scrap metal dealer or disposed of at an approved C&D landfill, as per methodologies described in Section 4.4.3 of this document.

Soils encountered during trench excavation activity will be field screened for the presence

of VOCs with PIDs calibrated to manufacturer's standards. Excavated soils with PID readings 5 ppm or greater above established background levels will be segregated from soils with readings less than 5 ppm above established background levels, and stockpiled in locations designated by the contracting officer. Field screening methodologies for excavation activity are described in Section 4.5 of this document and in the Field Sampling Plan.

In-situ soil samples for laboratory analysis will be collected from the following locations in finished trench excavations for piping run removal:

* areas of highest PID readings within excavated soil;

* areas of visible soil staining;

* points beneath any visibly corroded piping joints.

At a minimum, however, in-situ analytical soil samples will be collected from finished trench excavations at intervals of approximately 300 feet.

Laboratory analytical samples will also be collected from stockpiled excavated soils with PID readings 5 ppm or greater above established background levels. The number of analytical samples of stockpiled soils will be determined after the actual quantity of soils is known.

Analytical soil sampling methodology and soil analytical suites are described in Section 4.6 of this document and the Field Sampling Plan.

Ambient air quality will be monitored in the immediate vicinity of piping removal and soil excavation activities, according to methodologies described in Section 4.8 of this document. All personnel within the job site will work in compliance with site health and safety requirements discussed in Sections 4.7 through 4.11 of this document and outlined in the Site Safety and Health Plan, according to contract specifications.

Trench excavation backfilling will be performed according to methodologies described in Section 4.12 of this document. Surface restoration will be performed according to contract specifications.

3.3 FORMER BUILDING 2626

J&D will excavate and remove the remainder of the sump and grease trap located near former Building 2626. The location and specifications of the sump and grease trap are shown on the contract drawings.

The sump and grease trap at this location are believed to have received only sanitary sewer waste; however, no waste characterization analysis has been performed. The following text emphasizes sump and grease trap removal procedures with the assumption that the contents are hazardous waste.

Italicized text in this section refers to the simplified scope of work that would be required at the site if pre-removal laboratory analysis determines that the contents of the sump and grease trap are non-hazardous.

J&D will perform the following set of tasks at this location (as needed):

* analytical sampling of any residual liquids and solids from sump and grease trap prior to beginning site work;

* removal and storage of any liquid or solid material located within the sump and grease trap, sampling of visibly stained concrete within sump and grease trap basin for characterization of hazardous waste (if needed);

* cleaning, excavation, demolition, removal and disposal of the sump and grease trap;

* collection and analytical sampling of sump and grease trap wash and rinse effluent, temporary storage of effluent on site pending receipt of analytical results;

* field screening of soils during excavation activity, segregation and stockpiling of excavated soils based on field screening results, and collection of analytical samples of in-situ and stockpiled soils;

* disposal of non-hazardous demolition debris at an approved C&D landfill;

* manifesting, documentation, handling and disposal of any generated hazardous waste in accordance with contract specifications and federal, state and local

regulations (waste manifests will be signed by an AFBCA representative prior to removal offsite);

* backfilling of the sump and grease trap excavation with previously excavated native soils determined to be non-impacted by field screening, and supplemented with approved offsite fill material, in accordance with contract specifications;

* surface restoration, in accordance with contract specifications.

A sample of the residual liquid and/or solid contents (if present) of the sump and grease trap will be collected prior to beginning site work, and analyzed for the characterization of hazardous waste, as described in Section 4.4.1 of this document. Site work will begin after receipt of analytical results. Methodologies for handling sump and grease trap residual contents will be contingent upon analytical results.

If analytical results indicate that the contents of the sump and grease trap are hazardous waste, residual liquid (if present) will be pumped out and stored in drums,. The bulk of solid residue (if present) will also be removed and similarly stored. Removal procedures will be performed according to the methodologies described in Section 4.4.1 of this document.

If analytical results indicate that the contents of the sump and grease trap are hazardous waste, a grab chip sample of concrete basin material will be collected from any visibly stained area within the sump and/or grease trap. The chip sample will be analyzed for the characterization of hazardous waste.

If laboratory analytical results indicate that sump and grease trap residual materials are either non-hazardous but contaminated waste or non-contaminated material, the materials would be disposed of at local sanitary treatment facilities or an approved landfill, as discussed in Section 4.4.3 of this document. A grab chip sample of the sump and grease trap concrete basin material would not need to be collected in this case.

The interiors of the sump and grease trap will be washed and rinsed, if any residual liquid and solid materials were observed, sampled and subsequently characterized as hazardous waste by laboratory analysis. Wash and rinse effluents will be collected, sampled and analyzed for the characterization of hazardous waste, and temporarily stored on site pending receipt of laboratory results. The methodologies for these procedures are described in Section 4.4.1 of this document.

Washing and rinsing of the sump and grease trap would be required only if the residual materials were characterized as either hazardous waste, or non-hazardous but contaminated waste. The sump and grease trap will not need to be washed and rinsed if the residual liquids and solids are characterized as non-contaminated material.

Wash and rinse effluents generated by sump and grease trap cleaning activities and subsequently characterized by laboratory analysis as non-hazardous but contaminated waste, will be discharged to sanitary sewer utilities, pending approval from local treatment facilities. Effluent characterized by laboratory analysis as non-contaminated material will be discharged to storm sewer utilities or to the ground surface. Methodologies are described in Section 4.4.3 of this document.

The cleanliness of the washed and rinsed sump and grease trap basins will be determined by the analytical results for samples collected from the rinse effluent. Cleaned basins thus determined to be non-hazardous will be excavated, demolished, removed and disposed of at an approved C&D landfill. Visibly stained portions of concrete basin material previously characterized as hazardous waste (see above paragraphs) will be segregated during demolition and drummed. Methodologies for these procedures are described in Section 4.4.3 of this document.

All materials characterized as hazardous waste will be handled according to methodologies described in Section 4.4.2 of this document.

Soils encountered during sump and grease trap excavation activity will be field screened for the presence of VOCs with PIDs calibrated to manufacturer's standards. Excavated soils with PID readings 5 ppm or greater above established background levels will be segregated from soils with readings less than 5 ppm above established background levels, and stockpiled in locations designated by the contracting officer. Field screening methodologies for excavation activity are described in Section 4.5 of this document and in the Field Sampling Plan.

In-situ soil samples for field screening will be collected from the following locations in the finished sump and grease trap excavation:

* the base of the sump;

* the base of the grease trap;

* points beneath any joints in piping;

* any areas of visible soil staining.

Corroborative laboratory analytical samples will be collected from the above in-situ locations in the finished sump and grease trap excavation. Laboratory analytical samples will also be collected from stockpiled excavated soils with PID readings above background levels. Analytical soil sampling methodologies and soil analytical suites are described in Section 4.6 of this document and the Field Sampling Plan.

Ambient air quality will be monitored in the immediate vicinity of sump and grease trap removal and soil excavation activities, according to methodologies described in Section 4.8 of this document. All personnel within the job site will work in compliance with site health and safety requirements discussed in Sections 4.7 through 4.11 of this document and outlined in the Site Safety and Health Plan, according to contract specifications.

Soil screening, analytical soil sample collection, and ambient air monitoring activities would not need to be performed if laboratory analytical results indicate that sump and grease trap residual materials are non-contaminated material.

The finished excavation will be backfilled to near-surface grade upon receipt of analytical results. The surface topsoil will be replaced and re-seeded. Excavation backfilling will be performed according to methodologies described in Section 4.12 of this document. Surface restoration will be performed according to contract specifications.

4.0 METHODOLOGIES

4.1 PERMITS

All local and/or state permits needed for the planned work will be obtained following the approval of this plan by the site Contracting Officer's Representative (COR). No work for which permits are required will begin until permits are obtained.

4.2 UNDERGROUND UTILITY LOCATION

All onsite underground utilities will be accurately located and marked by local utility companies prior to beginning site work. Utilities believed to be in close proximity to proposed excavation areas will be exposed with hand tools as necessary to properly locate and determine depths and trends prior to excavation.

4.3 SURFACE CONCRETE AND ASPHALT REMOVAL

Excavation limits will be marked prior to removal of any materials. Any asphalt or concrete surfacing materials within the defined limits of planned excavation activity will be saw-cut, removed, loaded onto trucks and transported to an approved C&D facility for disposal.

Any concrete and asphalt surface materials with visible staining or chemical odors will be segregated from the remainder of the removed material and temporarily stored on site. A grab chip sample will be collected for laboratory analysis from each discrete potential spill location, as needed. Obtained chip samples will be characterized for hazardous waste according to methodologies discussed in Section 4.4.1 of this document. Any concrete/asphalt material thus characterized as hazardous waste will be placed in overpacked drums, and manifested, handled and disposed of in accordance with contract specifications and federal, state, and local regulations. Waste manifests will be signed by an AFBCA representative prior to removal offsite. Waste manifests and other documentation of disposal will be provided at project completion, as discussed in Section 5.0 of this document.

Non-hazardous concrete/asphalt material will be transported to an approved C&D landfill for disposal.

4.4 SUMPS AND ASSOCIATED PIPING - REMOVAL, DEMOLITION, WASTE HANDLING AND DISPOSAL

4.4.1 INITIAL PROCEDURES AND HAZARDOUS WASTE DETERMINATION

J&D will begin onsite work after all the pre-removal tasks have been completed and underground utilities have been marked. Sufficient staff will be available to perform project tasks concurrently when possible, in order to minimize overall time requirements. Common sense practices such as rapid removal of excavated soils and other housekeeping measures will also be used to minimize disruptions.

Representative samples of residual liquid and solid material from sumps and grease traps will be collected for laboratory determination of hazardous waste prior to beginning onsite removal activities, if such analytical results do not already exist (see Sections 3.1 and 3.3 of this document).

Residual liquids will be pumped out of sump and grease trap bottoms after receipt of laboratory analytical results for hazardous waste determination. This will include any liquid from proximal piping runs that drain into sumps and grease traps during pump-out activities. Any residual solids will be removed with dedicated tools. Removed residual liquids and solids from sump and grease trap bottoms will be put into overpacked drums and handled in a manner consistent with their analytical results for hazardous waste determination (see Sections 4.4.2 and 4.4.3 of this document).

Distal piping runs connecting to sumps and grease traps will be drained, and the collected residual liquid will be placed in overpacked drums and sampled for laboratory determination of hazardous waste. Open connections will be capped upon collection of residual liquid.

Solid material (concrete fill, grease, sediment etc.) removed from sumps will be collected and stored on site, in drums or on 30-mil polyethylene sheeting covered with 6 mil polyethylene sheeting, as appropriate of material consistency. Representative samples of each material will be collected for laboratory analysis.

Grab chip samples will be collected for laboratory analysis from concrete sump fill materials, and concrete sump/grease trap basin materials with visible staining. Samples will be collected prior to basin removals where practical. Laboratory analyses will be

performed for characterization of hazardous waste.

Any grab chip samples collected from visibly stained concrete and/or asphalt surface materials removed to prepare excavation areas (see Section 4.3 of this document) will also be analyzed for characterization of hazardous waste.

Hazardous waste characterization for samples collected from the above referenced media will consist of laboratory analysis for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) according to the Toxicity Characteristic Leaching Procedure (TCLP). Additional information regarding sample handling and analytical requirements is presented in the Field Sampling Plan.

The empty interiors of removed sumps and all removed associated piping will be twice washed with a solution of hot water and industrial strength detergent, then rinsed with fresh hot water. The sumps will be washed and rinsed in place where practical, to minimize the physical handling of contaminated sump debris. Water use will be controlled during washing activities to minimize the creation of additional potential hazardous liquid waste. Wash and rinse effluents will be collected and stored in portable 500- or 1000-gallon storage tanks, separated according to the following criteria:

type:

* first wash effluent
* second wash effluent
* rinse effluent

location:

* Building 2890 sump and vicinity
* piping runs from Facility 2891 and Building 2887 to Building 2890
* sump and grease trap from Building 2626 (if needed)

Representative samples of each type of effluent will be collected for laboratory determination of hazardous waste. Samples will be analyzed for VOCs and SVOCs

according to the TCLP. Additional information regarding sample handling and analytical requirements is presented in the Field Sampling Plan.

The cleanliness of washed and rinsed sump and grease trap materials and associated piping will be determined by the analytical results for samples collected from the rinse effluent. Materials will be considered clean if the rinse effluent is non-hazardous.

All collected potentially hazardous waste will remain on site pending receipt of laboratory analytical results. Analytical results will be reviewed, and hazardous waste determinations will be made, by an AEA environmental consultant.

4.4.2 HAZARDOUS MATERIALS

Solid materials characterized as hazardous waste by laboratory analysis will be placed in overpacked drums, manifested, handled and disposed of in accordance with contract specifications and federal, state and local regulations. Waste manifests will be signed by an AFBCA representative prior to removal offsite. Waste manifests and other documentation of disposal will be provided at project completion, as discussed in Section 5.0 of this document.

Residual liquids characterized as hazardous waste by laboratory analysis will be placed in overpacked drums, manifested, handled and disposed of in accordance with contract specifications and federal, state and local regulations. Waste manifests will be signed by an AFBCA representative prior to removal offsite. Waste manifests and other documentation of disposal will be provided at project completion, as discussed in Section 5.0 of this document.

Wash and rinse effluents characterized as hazardous waste by laboratory analysis will be containerized in portable 500- or 1000-gallon storage tanks (see Section 4.4.1 of this document), manifested, handled and disposed of in accordance with contract specifications and federal, state and local regulations. Waste manifests will be signed by an AFBCA representative prior to removal offsite. Waste manifests and other documentation of disposal will be provided at project completion, as discussed in Section 5.0 of this document.

The labeling of liquid hazardous waste will reflect the following:

type:

* sump/grease trap and/or piping residual liquid
* first wash effluent
* second wash effluent
* rinse effluent

location:

* Building 2890 sump and vicinity
* piping runs from Facility 2891 and Building 2887 to Building 2890
* sump and grease trap from Building 2626 (if needed)

Stored solid hazardous waste will be similarly labeled as to type (concrete fill, concrete basin material, grease, sediment, etc.) and location (as above).

Concrete basin material from sumps and grease traps characterized as hazardous waste (see Section 4.4.1 of this document) will be segregated from non-hazardous concrete basin material during sump and grease trap demolition, placed in overpacked drums, and manifested, handled and disposed of in accordance with contract specifications and federal, state, and local regulations. Waste manifests will be signed by an AFBCA representative prior to removal offsite. Waste manifests and other documentation of disposal will be provided at project completion, as discussed in Section 5.0 of this document.

4.4.3 NON-HAZARDOUS MATERIALS

Materials quantified as non-hazardous but contaminated waste will be disposed of at local sanitary treatment facilities or an approved C&D landfill as appropriate of material consistency.

Wash and rinse effluents characterized as non-hazardous but contaminated waste will be discharged to sanitary sewer utilities, pending approval from local treatment facilities.

Effluent characterized as non-contaminated material will be discharged to storm sewer utilities or to the ground surface.

The cleaned sump and grease trap basins and associated piping (as determined by analytical results for samples of final rinse effluents) will be excavated, demolished and removed. Piping will be saw-cut into 20-feet lengths. Any other steel and metallic portions will be saw-cut into manageable pieces. Non-hazardous concrete basin materials will be segregated from hazardous basin materials (see Section 4.4.2 of this document) and broken into manageable pieces. Non-hazardous metal scrap and other non-hazardous salvageable items will be disposed of by sale to an approved scrap metal dealer, if possible. Any non-marketable, non-hazardous solid material will be disposed of at an approved C&D landfill.

4.5 SOIL EXCAVATION ACTIVITIES - FIELD SCREENING

Soils removed during all excavation activity will be field screened for the presence of VOCs with PIDs calibrated to manufacturer's standards, using jar or bag headspace procedures. Representative portions of each sample will be placed in a clean container (jar or bag) and sealed. The time of sampling will be recorded and the container will be placed in an environment of no less than 50 degrees Fahrenheit (10 degrees Celsius). A headspace vapor will be allowed to develop within the sealed container for a period of at least 10 minutes. The container seal will then be perforated with the probe of the PID, and several measurements will be taken. The highest PID reading will be recorded for each sample collected.

Soil samples will be collected for field screening during excavation activity at a frequency of one sample per cubic yard of excavated soil. A reading of 5 ppm above established background levels will be used to segregate excavated soil. Excavated soils with PID readings 5 ppm or greater above established background levels will be stockpiled in areas designated by the COR, and placed on 30 mil polyethylene sheeting. The stockpiles will be covered with 6 mil polyethylene sheeting each day before workers depart from the site. These soils will be further subdivided according to date of removal, separated with polyethylene sheeting, and labeled according to date of removal and sampling stations.

Excavated soils with PID readings less than 5 ppm above established background levels will remain in the vicinity of the active excavations, and be used as needed to create temporary berms for diversion of surface water runoff. The berms will be constructed using methods which will minimize soil loss during precipitation events. These soils will

eventually be used in backfilling finished excavations upon completion of removal activity, collection of analytical samples, and surveying of analytical sample locations. Processed aggregate will be transported from offsite to supplement native soils in the backfilling of excavations.

In-situ soil samples will be collected from finished sump and grease trap excavations for field screening. The locations of these in-situ soil samples are based upon site-specific characteristics, and are discussed in Sections 3.1 and 3.3.

4.6 SOIL EXCAVATION ACTIVITIES - ANALYTICAL SAMPLE COLLECTION

Note: analytical soil sample collection for the sump removal at Building 2890 (see Section 3.1 of this document) will be performed by another contractor (URS Greiner). The following methodology section refers to sample collection at the remaining two sites (see Sections 3.2 and 3.3 of this document).

Corroborative laboratory analytical grab samples will be collected from the stockpiles of excavated soil with PID readings 5 ppm or greater above established background levels. The sampling frequency will be determined once the quantity of removed soils is known.

In-situ soil samples will be collected from finished excavations for laboratory analysis. The locations of these in-situ soil samples are based upon site-specific characteristics, and is discussed in Sections 3.1, 3.2 and 3.3.

Analytical sample locations will be surveyed with a transit prior to closing excavations.

Labeling schemes of analytical soil samples will reflect the following:

type:

* stockpile
* in-situ

location:

* Building 2890 sump excavation
  Note: sampling to be performed by URS Greiner

* trench excavation for piping runs from Facility 2891 and Building 2887 to Building 2890

* sump and grease trap from Building 2626 (as needed)

Sample locations will be presented on detailed site maps.

All laboratory samples of stockpiled and in-situ soil will be analyzed for the Target Compound List (TCL) of VOCs presented in Appendix B. Additional details are provided in the Field Sampling Plan.

4.7 SITE SAFETY AND HEALTH

AEA's onsite project manager shall also serve as the Site Safety and Health Officer (SSHO). The SSHO will ensure that all site safety and health requirements outlined in the contract specifications and detailed in the Site Health and Safety Plan are enforced.

All personnel at this site will have received 40 hours of HAZWOPER training as per 29 CFR 1910.120. Workers will receive additional site-specific safety training and first aid training. Written certification of all training will be provided for all site personnel. Results of medical exams will be provided for all site personnel.

At least one employee at active work sites will possess current certification for completion of an American Red Cross Standard First Aid course. This person will be immediately available to provide first aid as needed. Appropriate first aid supplies will be readily accessible, as described in the contract specifications.

All personnel involved in the removal of residual liquids from the sump in Building 2890 and solvent piping runs among Building 2890, Buildings 2887 and Facility 2891 will be working at Level C personal protection as defined in the contract specifications. Personnel will be working at Level D-Modified personal protection during all other onsite activities as defined in the contract specifications, unless ambient air quality monitoring indicates VOC exposure limits in excess of those stipulated in Section 4.8 of this document, and the

SSHO declares that personal protection requirements at the site be upgraded to Level C.

Additional site health and safety issues are discussed in Sections 4.8 through 4.11 of this document. Specific site safety and health procedures are outlined in the Site Safety and Health Plan, as per contract specifications.

4.8 AMBIENT AIR MONITORING - EXCAVATION AND REMOVAL ACTIVITIES

Ambient air quality will be monitored in the immediate vicinity of active work sites to allow the SSHO to determine if Level D-Modified personal protection requirements should be raised to Level C as defined in the contract specifications.

Previous analytical results indicate the presence of nine VOCs in subsurface soils and sump liquid residue associated within the vicinity of Nose Dock 8. These analytical results are presented in Appendix A. Ambient air quality at each work site will be monitored with dedicated PIDs to determine if permissible exposure levels (PELs) enforced by the Occupational Health and Safety Administration (OSHA) are being exceeded for any of these nine VOCs during onsite work activities. The monitoring scheme is designed to detect the possible presence of any of these nine VOCs.

The ionization potentials of these nine detected VOCs range from 8.44 to 11.42 electron volts (eV). Two dedicated PIDs will be used concurrently to monitor the ambient air of the work site vicinity. One PID will ionize compounds with potentials of 10.6 eV or lower, and the other PID will ionize compounds with potentials of 11.7 eV or lower. Colorimetric tubes will be used to further differentiate detected VOCs, as needed.

Personal protection requirements will be raised to Level C if any of the following occurs:

* ambient air readings from the 10.6 eV PID exceed the PEL for carbon disulfide (20 ppm), confirmed with colorimetric tube analysis, for more than 15 minutes;

* ambient air readings from the 10.6 eV PID exceed 100 ppm (the PEL for ethylbenzene, xylenes, trichloroethene, and tetrachloroethene) for more than 15 minutes;

* ambient air readings from the 11.7 eV PID exceed the PEL for methylene chloride (25 ppm), confirmed with colorimetric tube analysis, for more than 15 minutes;

* ambient air readings from the 11.7 eV PID exceed 50 ppm (the PEL for chloroform) for more than 15 minutes.

4.9 DUST CONTROL

This portion of this plan is intended to address methods and equipment used to minimize dust and dirt generated during site activities.

SITUATION: Fugitive dust generated by construction activities.

METHODS: Fugitive dust control may include the use of the best practical method such as watering, chemical stabilization, or other controls approved by the Contract Officer/Contract Officer Representative.

The contractor may not clear more area than can be controlled by these methods.

Dust/dirt on paved roads, parking lots, or other paved surfaces may be swept prior to or in conjunction with watering at the determination of the Contract Officer/Contract Officer Representative.

If the SSHO makes the decision that the amount of fugitive dust is excessive or that the dust is a physical or health hazard, we will use one of a combination of water, chemical stabilization, or other controls as decided by the SSHO.

4.10 SECURITY/TRAFFIC CONTROL

The work site will be prepared as follows to ensure security/traffic control to the site:

* Barricades will be placed around the active work sites and warning signs will be placed around the barricades. Excavations will remain open until removal activities are completed, analytical samples are collected, and sample locations are surveyed. Caution lighting and caution flagging will be used to mark these open completed excavations.

* Sources of ignitions that are not necessary for the carrying out of the project will not be allowed on the work sites. There will be certain items that could be considered "sources of ignition" that will be on the work sites as necessary to

complete the work. Prudent use of these in areas declared dangerous by the SSHO will keep the possibility of ignition to minimum. Appropriate fire suppression equipment will be readily accessible, as described in the contract specifications.

4.11 SPILL PREVENTION AND CONTROL

This section details measures that will be followed to properly store regulated substances, and reduce the likelihood of an accidental discharge during construction activities. This Spill Plan also sets forth procedures that will be followed in the event of a spill to contain and clean up the substance, and notify the proper authorities. J&D's onsite project supervisor will also serve as the onsite spill coordinator.

4.11.1 SPILL PREVENTION PROGRAM

Potential sources of spills include leakage, machinery and equipment failure, and spillage during transfer operations. To prevent a spill from occurring, the SSHO will incorporate preventive measures and procedures including, but not limited to the following:

* All personnel at this site will have received 40 hours of HAZWOPER training per 29 CFR 1910.120.

* All employees who handle regulated substances will also be documented as Emergency Spill Response workers. Documentation certificates for this type of training will be provided.

* The SSHO shall inspect all hoses, pipes and valves for leaks and deterioration each working day.

* The SSHO will prohibit the fueling or lubricating of wheeled or track-driven vehicles or equipment within 100 feet of a wetland or other surface water body.

4.11.2 SPILL CONTROL PREPARATION

Spill containment requires proper equipment, effective materials, and an immediate response from trained personnel. To properly contain a spill, the SSHO will incorporate preparatory measures which include, but are not limited to the following:

* The provision of documented trained employees who handle regulated substances to quickly and effectively contain and clean up spills.

* The onsite storage of a sufficient quantity of absorbent materials, including, but not limited to, absorbent pads, straw bales, absorbent clay, sawdust and floor-drying agents. Devices must also be available to stop the flow of leaking pipes, such as plugs of various sizes, a hammer, assorted sizes of metal screws with rubber washers, screwdrivers and plastic tape.

* Accessible locations of spill control equipment and materials in site vicinities, allowing for rapid accessibility during construction activity.

4.11.3 SPILL CONTROL PROCEDURE

In the event of a spill, the Contractor must abide by all applicable rules and regulations with respect to reporting and cleaning up the spill. The Contractor must also follow any additional procedures required by federal, state or local agencies. Clean-up and response to spill-related activities completed by the Contractor will include, but may not be limited to the following:

* The spill site shall be evacuated as necessary to safeguard human health. Evacuation parameters shall include considerations for the potential of fire, explosion, and hazardous gases.

* The cause of the spill must be stopped as soon as practical. If the spill is flowing, an attempt to contain it before it reaches surface waters or wetlands will be prioritized. Absorbent material(s) shall be placed over the substance to minimize spreading and to reduce its penetration into the soil.

* The Contractor will report all leaks and spills to the contracting officer. For spills into or near surface waters and/or wetlands, the National Response Center will be notified (1-800-424-8802). This is in accordance with the Clean Water Act (Title 40 CFR, Part 110.10). For large spills on land, pooled material will be pumped into tank trucks and contaminated soil shall be excavated. The extent of the soil excavation will be determined by the onsite environmental consultant through visual observation and field screening.

* The spilled material and the contaminated soil will be treated and/or disposed of

in accordance with the various federal, state and local agency requirements. Smaller spills on land shall be cleaned up with absorbent materials. The Contractor will collect, treat and/or dispose of these materials in accordance with the various federal, state, and local agency requirements.

4.11.4 SPILL NOTIFICATION

Spills will be reported to the appropriate federal, state and local agencies as soon as possible. These may include, but are not limited to the following:

* National Response Center, Washington, D.C. (800) 424-8802 (24 hours).

* Other local/state agencies, to include New York State Department of Environmental Conservation (NYSDEC) Spill Response Office, Route 86, Ray Brook, New York 12977 (518) 897-1200.

The Contractor or their representative will contact these agencies to determine what other agencies should be contacted.

Spill notification should include the following information:

* A legal description of the spill location and specific directions from the nearest community;

* The time and date of the spill and the time and date the spill was discovered;

* The type and volume of spilled material and the manufacturer's name;

* The medium in which the spill exists (soil, water, etc.);

* The topography and surface conditions of the spill site;

* Proximity of threatened surface waters;

* Weather conditions and any other pertinent information;

* Name, company, address and telephone number of responsible party;

* The cause of the spill;

* Immediate containment and/or clean-up actions taken;

* Name, company, address and telephone number of person who reported the spill.

In addition, a written report containing the information listed above may be requested. All subsequent findings and laboratory analysis with respect to the spill may also be requested.

This plan is intended to be used as a guide in the event a response to a spill is necessary. On-site storage of large volumes of fuel or other petroleum products by the Contractor is not anticipated.

4.12 EXCAVATION BACKFILLING

Excavations will be backfilled upon completion of removal activity, collection of analytical samples, and surveying of analytical sample locations. Initial backfilling will utilize the site-specific excavated soils with PID readings less than 5 ppm above established background levels. Additional fill material will be brought in as needed from off-site to complete the backfilling operations to sub-grade. Offsite-derived fill materials will meet the requirements outlined in the contract specifications. The fill materials will be mechanically or manually compacted in accordance with contract specifications.

4.13 SITE RESTORATION

Once all soils, sumps and associated piping, and drummed residual and effluent liquids have been quantified by laboratory analyses and transported from the excavation vicinities, the site will be cleaned of any remaining surface debris and prepared for site restoration.

The excavations will be closed as required by the Contracting Officer. Fill materials originating from offsite will meet the requirements outlined in the contract specifications. The soil will be compacted to at least 95 percent of maximum density. Re-landscaping will be completed as required. The site will be cleared of all debris upon completion of work.

In areas where concrete/asphalt pavement has been removed for excavation of underlying soils, the margins of the existing concrete/asphalt will be saw-cut to provide a neat appearance. Native soil or imported soil which has been placed into the excavations for

backfill will be mechanically compacted to the required standard Proctor density. Coarse base aggregate will then be placed on top of the backfill, compacted and brought up to the elevation necessary for placement of concrete/asphalt pavement. Concrete/asphalt will then be poured/placed over the base aggregate and finished even with the existing concrete/asphalt pavement in accordance with the contract specifications.

5.0 DATA ASSESSMENT, RECORDS, AND REPORTING REQUIREMENTS

Documentation of all site activities performed or coordinated by J&D will be compiled and presented in a Site Confirmation Report, as per contract specifications. The Site Confirmation Report will include:

* regional and site-specific geology and hydrogeology;
* detailed site maps showing excavation dimensions and sample locations;
* analytical sampling records and chains-of-custody;
* soil field screening results;
* soil analytical results;
* hazardous waste analytical results;
* hazardous waste manifests and documentation of non-hazardous waste disposition;
* ambient air monitoring records;
* discussions of site observations and results of removal operations;
* recommendations for further work or site closure, as appropriate.

Photocopies of all the pertinent records will be kept on file at J&D offices in Duluth, Minnesota for five years after project completion and acceptance. Specific procedures for analytical record keeping are outlined in the Field Sampling Plan.

6.0 PROJECT SCHEDULE

Period of Work: pending regulatory review and approval

APPENDIX A

Previous Site Maps and Analytical Information

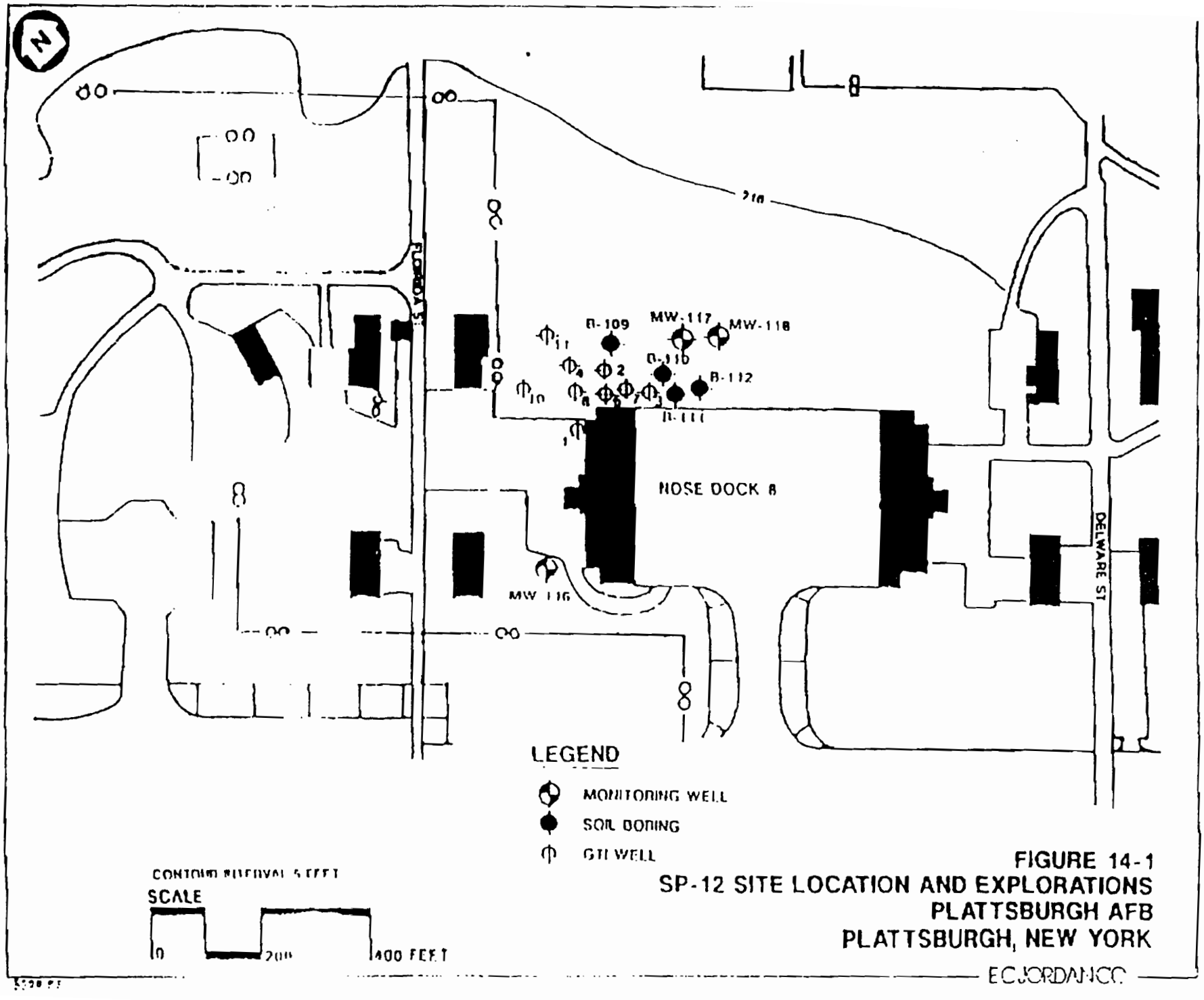


FIGURE 14-1
SP-12 SITE LOCATION AND EXPLORATIONS
PLATTSBURGH AFB
PLATTSBURGH, NEW YORK

E.C. JORDAN CO.

APPENDIX

TABLE A-1

NOSE DOCK 8 (SS-016) - SITE INSPECTION INVESTIGATION
DETECTED ANALYTES IN SUBSURFACE SOIL SAMPLES

SAMPLE LOCATION	B-16-003	B-16-003	B-16-003	B-16-004	B-16-004	B-16-004	B-16-004	MW-16-002	MW-16-002	MW-16-002	MW-16-002
SAMPLE ID	SP12TB1113	SP12TB1114	SP12TB1115	SP12TB1121	SP12TB1122	SP12TB1123	SP12TB1124	S12MW11703	S12MW11710	S12MW11712	S12MW11714
DATE SAMPLED	11/05/87	11/05/87	11/05/87	11/05/87	11/05/87	11/05/87	11/05/87	11/09/87	11/09/87	11/09/87	11/09/87
DEPTH (Ft.)	3	4	5	1	2	3	4	3	10	12	14
MEDIUM	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
ANALYTE											
Methylene Chloride	7 B	25 J	9.7 B	13 B	7.8 B	14 B	18 B	18 B	NR	NR	NR
Acetone	6.4 JB	14 B	8.7 JB	7.4 JB	34	14 B	23 B	21 B	NR	NR	NR
Chloroform	1.5 J	4.6 J	1.7 J	2.1 J	—	—	—	—	NR	NR	NR
4-Methyl-2-pentanone	—	—	—	—	—	—	11	—	NR	NR	NR
Tetrachloroethene	—	—	—	—	—	—	29	—	NR	NR	NR
Aluminum (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Arsenic (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Barium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Beryllium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Calcium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chromium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cobalt (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Copper (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Iron (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lead (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Magnesium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Manganese (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sodium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vanadium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Zinc (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Petroleum Hydrocarbons (mg/kg)	—	36	—	NR	84	140	110	NR	—	24	—

Results reported in µg/kg unless otherwise specified.

- Indicates the analyte was analyzed for but not detected.

NR - Analysis not requested.

B - Indicates the analyte was detected in both the sample and associated method blank.

J - Indicates an estimated value because value is below CRDL or quality assurances criteria were not met during analysis.

Source: E.C.Jordan, 1989.

APPENDIX

TABLE A-1.1

NOSE DOCK 8 (SS-016) - SITE INSPECTION INVESTIGATION
DETECTED ANALYTES IN SUBSURFACE SOIL SAMPLES

SAMPLE LOCATION	B-16-001	B-16-001	B-16-001	B-16-002	B-16-002	B-16-002	B-16-002	B-16-002	B-16-002	B-16-003	B-16-003
SAMPLE ID	SP12TB1091	SP12TB1092	SP12TB1093	SP12TB1101	SP12TB1102	SP12TB1103	SP12TB1104	SP12TB1105	SP12TB1106	SP12TB1111	SP12TB1112
DATE SAMPLED	11/05/87	11/05/87	11/05/87	11/05/87	11/05/87	11/05/87	11/05/87	11/05/87	11/05/87	11/05/87	11/05/87
DEPTH (Ft.)	1	2	3	1	2	3	4	5	6	1	2
MEDIUM	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
ANALYTE											
Methylene Chloride	25 B	8.5 B	16 B	32 B	8.2 B	11 B	5.5 B	15 B	11 B	10 B	16 B
Acetone	15 B	40	24 B	22	14 B	30 B	20 B	34	29 B	12 B	28 B
Chloroform	4.1 J	—	4.8 J	—	1.5 J	2.2 J	2 J	—	5.7 J	1.9 JB	1.3 J
4-Methyl-2-pentanone	—	—	—	—	—	—	—	—	—	—	—
Tetrachloroethene	—	—	—	—	—	—	—	—	—	—	—
Aluminum (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	1,140	NR	2,180
Arsenic (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	0.43 [ ]	NR	0.59 [ ]
Barium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	7.5 [ ]	NR	5.8 [ ]
Beryllium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	—	NR	0.23 [ ]
Calcium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	233 [ ]E	NR	188 [ ]E
Chromium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	1 [ ]	NR	2.4
Cobalt (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	—	NR	1.1 [ ]
Copper (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	—	NR	2.8 [ ]
Iron (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	1,870	NR	3,820
Lead (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	—	NR	0.5
Magnesium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	395 [ ]	NR	610 [ ]
Manganese (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	34 E	NR	32 E
Sodium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	—	NR	246 [ ]
Vanadium (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	0.58 [ ]E	NR	3.5 E
Zinc (mg/kg)	NR	NR	NR	NR	NR	NR	NR	NR	8.1 E	NR	9.8 E
Petroleum Hydrocarbons (mg/kg)	—	—	—	42	50	260	68	69	NR	25	NR

Results reported in µg/kg unless otherwise specified.

— - Indicates the analyte was analyzed for but not detected.

NR - Analysis not requested.

B - Indicates the analyte was detected in both the sample and associated method blank.

J - Indicates an estimated value because value is below CRDL or quality assurances criteria were not met during analysis.

E - Indicates the analyte exceeded linear range range of calibration.

[ ] - Sample results is < quantitation limit but >= to instrument detection limit.

Source: E.C.Jordan, 1989.

APPENDIX

TABLE A-2

NOSE DOCK 8 (SS-016) - REMEDIAL INVESTIGATION
DETECTED ANALYTES IN SUBSURFACE SOIL SAMPLES

A) Initial Sampling

ANALYTE	*TBC VALUE	FREQUENCY OF DETECTION	DETECTED MINIMUM CONCENTRATION	DETECTED MAXIMUM CONCENTRATION	AVERAGE OF DETECTIONS	SAMPLE I.D.
Acetone	200	1/9	22	22	22	MWPH16-07-3
Carbon Disulfide	2,700	1/9	3	3	3	MWPH16-07-3
Trichloroethene	700	1/9	2	2	2	SBMWPH-05-7
Tetrachloroethene	1,400	1/9	3	3	3	SBMWPH-05-7
Toluene	1,500	1/9	7	7	7	SBMWPH-05-7
Xylene	1,200	1/9	2	2	2	SB16-02-3
Pyrene	50,000	1/9	20	20	20	SB16-02-3
Benzo(b)fluoranthene	1,100	1/9	20	20	20	SB16-02-3
bis(2-Ethylhexyl)phthalate	50,000	1/9	810	810	810	SBMWPH-05-7
Arsenic (mg/kg)	7.5	5/5	0.43	1	0.67	MWPH16-07-3
Barium (mg/kg)	300	5/5	5.2	11.3	7.7	MWPH16-07-3
Cadmium (mg/kg)	1.3	2/5	0.73	0.88	0.81	MWPH16-07-3
Chromium (mg/kg)	19.5	5/5	2.8	8.8	5.5	MWPH16-07-3
Lead (mg/kg)	79.4 (SB)	5/5	0.3	5.4	2.9	MWPH16-07-3
Selenium (mg/kg)	2	1/5	0.21	0.21	0.21	SBMWPH-05-7

B) Supplemental Sampling

ANALYTE	*TBC VALUE	FREQUENCY OF DETECTION	DETECTED MINIMUM CONCENTRATION	DETECTED MAXIMUM CONCENTRATION	AVERAGE OF DETECTIONS	SAMPLE I.D.
Methylene chloride	100	1/3	25	25	25	SB16-06: 15-17'
Acetone	200	1/3	32	32	32	SB16-06: 11-13'
Trichloroethene	700	2/3	160	8,100	4,130	SB16-09: 15-17'
Tetrachloroethene	1,400	1/3	130	130	130	SB16-06: 11-13'
Toluene	1,500	3/3	35	1,100	532	SB16-09: 15-17'
Ethylbenzene	5,500	2/3	160	2,700	1,430	SB16-09: 15-17'
Xylene	1,200	2/3	2,000	2,000	2,000	SB16-06: 11-13'
Naphthalene	13,000	2/2	9,200	38,000	23,600	SB16-09: 15-17'
2-methylnaphthalene	36,400	2/2	1,200	51,000	26,100	SB16-09: 15-17'
Dibenzofuran	6,200	1/2	1,600	1,600	1,600	SB16-09: 15-17'
Fluorene	50,000	1/2	2,000	2,000	2,000	SB16-09: 15-17'
Phenanthrene	50,000	1/2	1,200	1,200	1,200	SB16-09: 15-17'
bis(2-Ethylhexyl)phthalate	50,000	1/2	1,900	1,900	1,900	SB16-06: 11-13'

Results reported in µg/kg unless otherwise noted.

TBC - "To Be Considered" criteria that are not legally binding.

*TBC value from Table 4-1.

[ ] - Exceeds TBCs.

APPENDIX

TABLE A-3

ANALYTICAL RESULTS - SUMP CONTENTS
PLATTSBURGH AIR FORCE BASE SITE SS-016
SEMIVOLATILES
September 1995

Sample ID		LH-16-UST
Sample Type		Waste
Date Sampled		11-Sep-95
Parameter	*ARAR	
2,4-Dinitrophenol	1	
4-Nitrophenol	1	
Dibenzofuran	50	
2,4-Dinitrotoluene	5	
Diethylphthalate	50	
4-Chlorophenyl-phenylether	50	
Fluorene	50	
4-Nitroaniline	5	
4,6-Dinitro-2-methylphenol	1	
N-Nitrosodiphenylamine	50	9
4-Bromophenyl-phenylether	50	
Hexachlorobenzene	0.35	
Pentachlorophenol	1	
Phenanthrene	50	
Anthracene	50	
Carbazole	50	
Di-n-butylphthalate	50	
Fluoranthene	50	
Pyrene	50	
Butylbenzylphthalate	50	
3,3'-Dichlorobenzidine	5	
Benzo(a)anthracene	0.002	
Chrysene	0.002	
bis(2-Ethylhexyl)phthalate	50	2
Di-n-octylphthalate	50	
Benzo(b)fluoranthene	0.002	
Benzo(k)fluoranthene	0.002	
Benzo(a)pyrene	ND	
Indeno(1,2,3-cd)pyrene	0.002	
Dibenz(a,h)anthracene	50	
Benzo(g,h,i)perylene	50	

All results reported in µg/l. ARAR - "Applicable or Relevant and Appropriate Requirements".
Only detected results reported.
* - ARAR Value from Table 4-1.

APPENDIX

TABLE A-3

ANALYTICAL RESULTS - SUMP CONTENTS
PLATTSBURGH AIR FORCE BASE SITE SS-016
VOLATILES
September 1995

Sample ID		LH-16-UST
Sample Type		Waste
Date Sampled		11-Sep-95
Parameter	*ARAR	
Chloromethane	5	
Bromomethane	5	
Vinyl Chloride	2	
Chloroethane	5	
Methylene Chloride	5	160000
Acetone	50	14000
Carbon Disulfide	50	
1,1-Dichloroethene	5	
1,1-Dichloroethane	5	
1,2-Dichloroethene (total)	5	
Chloroform	7	
1,2-Dichloroethane	5	
2-Butanone	50	
1,1,1-Trichloroethane	5	
Carbon Tetrachloride	5	
Bromodichloromethane	50	
1,2-Dichloropropane	5	
cis-1,3-Dichloropropene	5	
Trichloroethene	5	
Dibromochloromethane	50	
1,1,2-Trichloroethane	5	
Benzene	0.7	
trans-1,3-Dichloropropene	5	
Bromoform	50	
4-Methyl-2-pentanone	50	
2-Hexanone	50	
Tetrachloroethene	5	
1,1,2,2-Tetrachloroethane	5	
Toluene	5	3300
Chlorobenzene	5	
Ethylbenzene	5	
Styrene	5	
Xylene (total)	5	

All results reported in µg/l. - Exceeds ARARs.
Only detected results reported. ARAR - "Applicable or Relevant and Appropriate Requirements".
* - ARAR Value from Table 4-1.

APPENDIX

TABLE A-3

ANALYTICAL RESULTS - SUMP CONTENTS
PLATTSBURGH AIR FORCE BASE SITE SS-016
SEMIVOLATILES
September 1995

Sample ID		LH-16-UST
Sample Type		Waste
Date Sampled		11-Sep-95
Parameter	*ARAR	
Phenol	1	6100
bis(2-Chloroethyl)ether	1	
2-Chlorophenol	1	
1,3-Dichlorobenzene	5	
1,4-Dichlorobenzene	4.7	
1,2-Dichlorobenzene	4.7	
2-Methylphenol	1	15000
2,2'-oxybis(1-Chloropropane)	50	
4-Methylphenol	1	3500
N-Nitroso-di-n-propylamine	50	
Hexachloroethane	5	
Nitrobenzene	5	
Isophorone	50	
2-Nitrophenol	1	
2,4-Dimethylphenol	1	290
bis(2-Chloroethoxy)methane	5	
2,4-Dichlorophenol	1	
1,2,4-Trichlorobenzene	5	
Naphthalene	10	
4-Chloroaniline	5	
Hexachlorobutadiene	5	
4-Chloro-3-methylphenol	1	
2-Methylnaphthalene	50	
Hexachlorocyclopentadiene	5	
2,4,6-Trichlorophenol	1	
2,4,5-Trichlorophenol	1	
2-Chloronaphthalene	10	
2-Nitroaniline	5	
Dimethylphthalate	50	
Acenaphthylene	50	
2,6-Dinitrotoluene	5	
3-Nitroaniline	5	
Acenaphthene	20	

All results reported in µg/l. - Exceeds ARARs.

Only detected results reported. ARAR - "Applicable or Relevant and Appropriate Requirements".

* - ARAR Value from Table 4-1.

APPENDIX B

Target Compound List

Dock 8 : aw

TARGET COMPOUND LIST

COMMON NAME[1]	CAS RN[2]	COMMON NAME[1]	CAS RN[2]
		VOLATILE COMPOUNDS	
Chloromethane	74-87-3	Trichloroethene	79-01-6
Bromomethane	74-83-9	Dibromochloromethane	124-48-1
Vinyl chloride	75-01-4	1,1,2-Trichloroethane	79-00-5
Chloroethane	75-00-3	Benzene	71-43-2
Methylene chloride	75-09-2	trans-1,3- Dichloropropene	10061-02-6
Acetone	67-64-1	Bromoform	75-25-2
Carbon Disulfide	75-15-0	4 Methyl-2-pentanone	108-10-1
1,1-Dichloroethene	75-35-4	2-Hexanone	591-78-6
1,1-Dichloroethane	75-34-3	Tetrachloroethene	127-18-4
1,2-Dichloroethene	540-59-0	Toluene	108-88-3
Chloroform	67-66-3	1,1,2,2-Tetrachloroethane	79-34-5
1,2-Dichloroethane	107-0602	Chlorobenzene	108-90-7
2-Butanone	78-93-3	Ethyl benzene	100-41-4
1,1,1-Trichloroethane	71-55-6	Styrene	100-42-5
Carbon tetrachloride	56-23-5	Xylene (Total)	1330-20-7
Vinyl acetate	108-05-4		
Bromodichloromethane	75-27-4		
1,2-Dichloropropane	78-87-5		
cis-1,3-Dichloro propene	10061-01-5		

FIELD SAMPLING PLAN

Prepared for:

Removal Oil Water Separators
& Solvent Pipelines
Plattsburgh Air Force Base, New York

Prepared by:

Adirondack Environmental Associates
9 Kastner Road
Plattsburgh, NY 12901

Contract No. F41622-97-M-6943
Project No. THWA 97-6003

Revision 1.6 October 1998

1.0 INTRODUCTION

The Field Sampling Plan (FSP) presents, in specific terms, the requirements and procedures for conducting field operations and investigations. This project specific FSP has been prepared to ensure (1) the data quality objectives specified for this project are met, (2) the field sampling protocols are documented and reviewed in a consistent manner, and (3) the data collected are scientifically valid and defensible

Guidelines followed in the preparation of this plan are set out in the: *Data Quality Objectives Process for Superfund, Interim Final Guidance* (U.S. Environmental Protection Agency [EPA], 1993).

This FSP is required reading for all staff participating in the work effort. The FSP shall be in the possession of the field teams collecting the samples. All contractors and subcontractors shall be required to comply with the procedures documented in this FSP in order to maintain comparability and representativeness of the collected and generated data.

J& D Inc. shall implement controlled distribution of the FSP to ensure the current approved version is being used. A sequential numbering system shall be used to identify controlled copies of the FSP. Controlled copies shall be provided to applicable Air Force managers, regulatory agencies, remedial project managers, project managers, and quality assurance (QA) coordinators. Whenever Air Force revisions are made or addenda added to the FSP, a document control system shall be put into place to assure (1) all parties holding a controlled copy of the FSP shall receive the revisions/addenda and (2) outdated material is removed from circulation. The document control system does not preclude making and using copies of the FSP; however, the holders of controlled copies are responsible for distributing additional material to update any copies within their organizations. J & D Inc. shall maintain the distribution list for controlled copies

2.0 PROJECT BACKGROUND

2.1 THE U.S. AIR FORCE INSTALLATION RESTORATION PROGRAM

Although this project is not considered a CERCLA Removal Action, this section has been included for information only since the work is within a CERCLA site.

The objective of the U.S. Air Force Installation Restoration Project (IRP) is to assess past hazardous waste disposal and spill sites at U.S. Air Force installations and to develop remedial actions consistent with the NCP for sites that pose a threat to human health and welfare or the environment. This section presents information on the program origins, objectives, and organization.

The 1976 Resource Conservation Recovery Act (RCRA) is one of the primary federal laws governing the disposal of hazardous wastes. Sections 6001 and 6003 of RCRA require federal agencies to comply with local

and state environmental regulations and provide information to the EPA concerning past disposal practices at federal sites. RCRA Section 3012 requires state agencies to inventory past hazardous waste disposal sites and provide information to the EPA concerning those sites.

In 1980, Congress enacted CERCLA (Superfund). CERCLA outlines the responsibility for identifying and remediating contaminated sites in the United States and its possessions. The CERCLA legislation identifies the EPA as the primary policy and enforcement agency regarding contaminated sites.

The 1986 Superfund Amendments and Reauthorization Act (SARA) extends the requirements of CERCLA and modifies CERCLA with respect to goals for remediation and the steps that lead to the selection of a remedial process. Under SARA, technologies that provide permanent removal or destruction of a contaminant are preferable to action that only contains or isolates the contaminant. SARA also provides for greater interaction with public and state agencies and extends the EPA's role in evaluating health risks associated with contamination. Under SARA, early determination of Applicable or Relevant and Appropriate Requirements (ARARs) is required, and the consideration of potential remediation alternatives is recommended at the initiation of an RI/FS. SARA is the primary legislation governing remedial action at past hazardous waste disposal sites.

Executive Order 12580, adopted in 1987, gave various federal agencies, including the Department of Defense (DOD), the responsibility to act as lead agencies for conducting investigations and implementing remediation efforts when they are the sole or co-contributor to contamination on or off their properties.

To ensure compliance with CERCLA, its regulations, and Executive Order 12580, the DOD developed the IRP, under the Defense Environmental Restoration Program, to identify potentially contaminated sites, investigate these sites, and evaluate and select remedial actions for potentially contaminated facilities. The DOD issued the Defense Environmental Quality Program Policy Memorandum (DEQPPM) 80-6 regarding the IRP program in June 1980, and implemented the policies outlined in this memorandum in December 1980. EPA issued the NCP in 1980 to provide guidance on a process by which (1) contaminant release could be reported, (2) contamination could be identified and quantified, and (3) remedial actions could be selected. The NCP describes the responsibility of federal and state governments and those responsible for contaminant releases.

The DOD formally revised and expanded the existing IRP directives and amplified all previous directives and memoranda concerning the IRP through DEQPPM 81-5, dated 11 December 1981. An U.S. Air Force message dated 21 January 1982 implemented the memorandum.

The IRP is the DOD's primary mechanism for response actions on U.S. Air Force installations affected by the provisions of SARA. In November 1986, in response to SARA and other EPA interim guidance, the U.S. Air Force modified the IRP to provide for an RI/FS program. The IRP was modified so that RI/FS studies could be conducted as parallel activities rather than serial activities. The program now includes ARAR determinations, identification and screening of technologies, and development of alternatives. The IRP may include multiple field activities and pilot studies prior to a detailed final analysis of alternatives. Over the years, requirements of the

IRP have been developed and modified to ensure that DOD compliance with federal laws, such as RCRA, NCP, CERCLA, and SARA, can be met.

2.2 PROJECT PURPOSE AND SCOPE

J & D Enterprises of Duluth, Inc. will be removing solvent pipelines and oil/water separators from Plattsburgh AFB. The purpose of this project is to remove the existing concrete plug in the Nose Dock 8 sump allowing sampling of the soils beneath to better characterize environmental conditions at SS-016 and to remove associated underground hardware that has been long since abandoned. Excavated soil will field screened for the presence of VOC's with a PID meter. A PID reading of 5 ppm above established background levels will be used to segregate excavated soils. Removed piping will be cleaned and disposed. Concrete from the separator will be cleaned and tested to determine if it is hazardous waste and disposed of appropriately. During this project Adirondack Environmental Associates, Inc. of Plattsburgh, will be monitoring air and soil samples to maintain a safe environment and successfully complete the project, per the plans and specifications of this project

2.3 PROJECT SITE DESCRIPTION

Location: All work in this project is to be performed at Nose Dock 8 (Building 2890/ SS-016), the former Aircraft Washrack (Facility 2891), the Industrial Pretreatment Plant (Building 2887), and the former Building 2626 location, Plattsburgh AFB, NY. The Nose Dock 8-work site is and EPA designated National Priorities List (NPL) or CERCLA site. Refer to Project Drawings, sheets 2 and 6 of 6.

2.4 PROJECT SITE CONTAMINATION HISTORY

See information located in Appendix A of the Work Plans.

3.0 PROJECT SCOPE AND OBJECTIVES

3.1 OBJECTIVES

J & D Enterprises of Duluth, Inc. will be removing solvent pipelines and oil/water separators from Plattsburgh AFB. The purpose of this project is to remove the existing concrete plug in the Nose Dock 8 sump allowing sampling of the soils beneath to better characterize environmental conditions at SS-016 and to remove associated underground hardware that has been long since abandoned. Excavated soil will field screened for the presence of VOC's with a PID meter. A PID reading of 5 ppm above established background levels will be used to segregate excavated soils. Removed piping will be cleaned and disposed. Concrete from the separator will be cleaned and tested to determine if it is hazardous waste and disposed of appropriately. During this project Adirondack Environmental Associates, Inc. of Plattsburgh, will be monitoring air and soil samples to maintain a safe

environment and successfully complete the project, per the plans and specifications of this project. Analytical data will be validated and a final confirmation report will be issued.

3.2 SAMPLE ANALYSIS SUMMARY

Samples of undisturbed soil will be collected as excavation progresses. Samples will be collected in areas of obvious contamination, as evidenced by discoloration, odor, elevated PID/Hnu readings, or any other criteria deemed applicable by the on-site supervisor. The minimum number of trench samples will be seven (7) as per page 23, paragraph 3.2 of the Contract Document. Additional sampling may be deemed necessary. Chip samples of the sump concrete will be tested to determine whether they are hazardous. Removed piping will be twice washed and rinsed. Each discrete wash and rinse water will be segregated. This will allow separate tests to be conducted on each to assess the contaminant levels.

One grab sample of the liquid remaining in the sump at Bldg. 2626 will be collected.

URS Grenier will be collecting samples of the soil pile(s) and in-situ sample from beneath the separator, at Nose Dock 8 only.

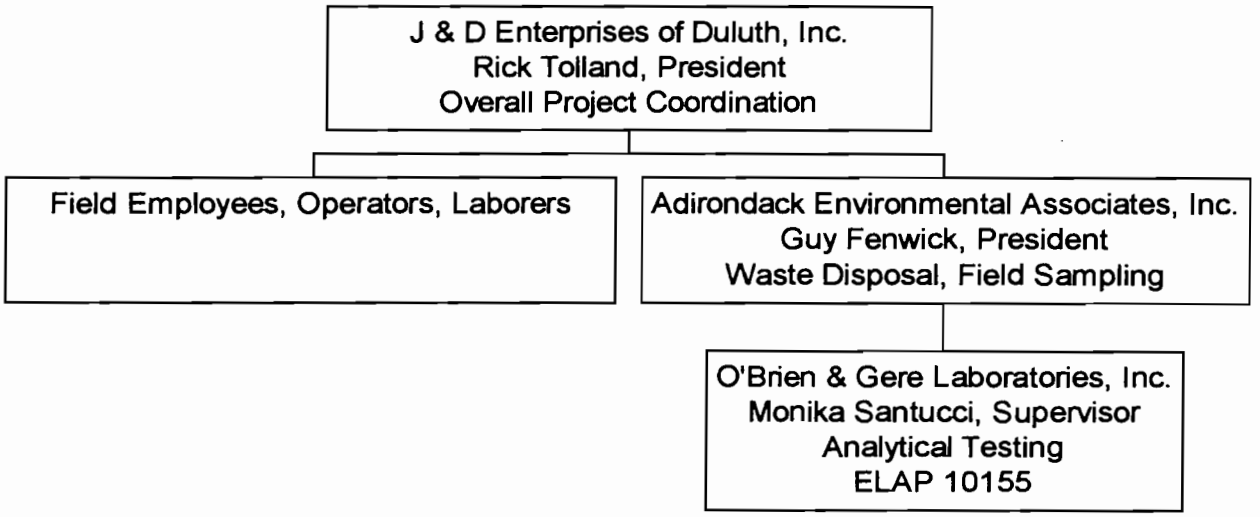
Table 3-1
Sample Analysis Summary

Site	Method	Matrix	# Samples	# Equip. Blanks	# Ambient Blanks	# Trip Blanks	# Field Duplicates	Total # Samples
Trench	Grab	Soil	7	1	1	1	1	11
Concrete	Grab	Solid	3			1	1	4
Soil Pile	Grab	Soil	TBD					
1st Wash Eff	Grab	Liquid	1 per vessel			1		2
2nd Wash Eff	Grab	Liquid	1 per vessel			1		2
Rinse	Grab	Liquid	1 per vessel			1		2
Sump 2626	Grab	Liquid	1			1		2
*2626 Soil	Grab	Soil	1			1		2
Waste Drum	Grab	Liquid	1		1	1	1	4

Note 1:
Sample number based on 1 Sample per 300 lineal ft of trench, and 1 each at the beginning and end of trench. Trenching has been estimated at 2000 lineal feet. Sample number may change based on actual feet of trench and field conditions encountered. Wash and rinse samples are subject to change based upon actual number of collection vessels generated. All samples with the exception of the *in-situ* trench and soil pile samples will be tested for TCLP Volatiles Method 1311/8240. Trench and soil pile samples will be tested for TCL Volatiles Method 8260. Results shall be Level III validated, and the results shall be summarized showing detection's above NYS TAGM HRW-9446.
* Required only if 2626 sump contents are hazardous

4.0 PROJECT ORGANIZATION AND RESPONSIBILITY

J & D Enterprises of Duluth, Inc. is the prime contractor on this project, Rick Toland; is responsible for overall project performance.



4.1 SUBCONTRACTORS

Adirondack Environmental Associates, Inc. of Plattsburgh, (hereafter AEA), Guy Fenwick, President. Dick Mitchell of AEA will be the onsite Health & Safety officer. AEA will conduct field sampling and monitoring. OBG LABS - Environmental Div, Syracuse NY, will perform all required analytical testing and data validation.

Company	**Telephone**	**Contact**
J & D Enterprises, Inc.	(218) 729-9105	Rick Toland
Adirondack Environmental Assoc.	(518) 563-5726	Guy Fenwick
OBG-Labs	(315) 437- 0200	Monika Santucci

5.0 WASTE HANDLING

5.1 General Waste Handling Procedures

Waste handling shall be dealt with on a site-by-site basis. Waste may be classified as noninvestigative waste or investigative waste

Noninvestigative waste, such as litter and household garbage, shall be collected on an as-needed basis to maintain each site in a clean and orderly manner. This waste shall be containerized and transported to the designated sanitary landfill or collection bin. Acceptable containers shall be sealed boxes or plastic garbage bags.

Investigation derived waste shall be properly containerized and temporarily stored at each site, prior to transportation. Depending on the constituents of concern, fencing or other special marking may be required. The number of containers shall be estimated on an as-needed basis. Acceptable containers shall be sealed U.S. Department of Transportation (DOT) -approved steel 55-gallon drums or small dumping bins with lids, or other containers approved by the Contracting Officer taking into account the volume of wash and rinse water which will be generated. The containers shall be transported in such a manner to prevent spillage or particulate loss to the atmosphere. To facilitate handling, the containers shall be no more than half full when moved.

The investigative derived waste shall be segregated at the site according to matrix (solid or liquid) and as to how it was derived (digging, draining, decontamination fluids). Liquid waste (from pipe draining and sump contents) shall be placed in 55-gallon drums as appropriate. Larger collection vessels will be required for the wash/rinse water generated during the cleaning of the removed piping. Soil excavated to facilitate piping removal shall be stockpiled onsite. Each container shall be properly labeled with site identification, sampling point, depth, matrix, constituents of concern, and other pertinent information for handling.

5.2 DECONTAMINATION OF FIELD EQUIPMENT

Field equipment will be twice washed with a solution of hot water and industrial strength detergent, then rinsed with fresh hot water. Wash and rinse water will be collected, segregated and tested to determine whether it is hazardous. Sampling equipment (trowels, shovels, etc.) will be additionally rinsed with ASTM Type II water prior to use. Decontamination will be accomplished by wash/rinsing equipment into a small mobile container (children's wading pool or similar), then transferring the liquid via pump to the larger collection vessels.

6.0 ENVIRONMENTAL SAMPLING

6.1 SAMPLING PROCEDURES

The construction material of the sampling devices (e.g., plastic, PVC, metal) discussed below shall be appropriate for the contaminant of concern and shall not interfere with the chemical analyses being performed.

6.1.1 Soil Sampling

Soil samples shall be collected from the trench bottom, or any location with indication of contamination (discoloration, odor, etc.).

Stainless steel scoops or trowels, glass jars with Teflon® lids or equivalent equipment compatible with the chemical analyses proposed shall be used to collect and store samples. Exclude above ground plant parts and debris from the sample.

In addition to records outlined in Section 8.0, record unusual surface conditions that may affect the chemical analyses, such as the following: (1) asphalt chunks that may have been shattered by mowers, thus spreading small fragments of asphalt over the sampling area, (2) distance to roadways, aircraft runways, or taxiways, (3) obvious, deposition of contaminated or clean soil at the site, (4) evidence of dumping or spillage of chemicals, (5) soil discoloration, and/or (6) stressed vegetation, etc.

Grab soil samples to be tested for TCL Volatiles shall be collected and placed in 8 oz. glass jars with tight fitting Teflon lined caps. Soil is to be well packed in sample jar to avoid loss of volatile compounds. Preservation shall be accomplished by cooling the sample to 4°C, as per Table 6.2.2-1.

6.1.2 Liquid Sampling

Collect samples so as not to cause cross-contamination.

Liquid samples shall be collected from the sump located at B-2626. Liquid samples will also be collected from the wash and rinse water collection vessels.

Liquid samples will be collected in 40 mL VOA vials with Teflon® lined septa.

6.2 SAMPLE HANDLING

6.2.1 Sample Containers

Sample containers are purchased precleaned and treated according to EPA specifications for the methods. Containers are stored in clean areas to prevent exposure to fuels, solvents, and other contaminants.

6.2.2 Sample Volumes, Container Types, and Preservation Requirements

Sample holding time tracking begins with the collection of samples and continues until the analysis is complete. Holding times for methods required are specified in Table 6.2.2-1. **Samples not preserved or analyzed in accordance with these requirements shall be resampled and analyzed, at no additional cost to the Government.**

Table 6.2.2-1. Requirements for Containers, Preservation Techniques,

Sample Volumes, and Holding Times

Name	Analytical Methods	Container[a]	Preservation[b,c]	Minimum Sample Volume or Weight	Maximum Holding Time
TCL Volatiles Water	SW8240B	G, Teflon Septum	Cool, 4°C HCl to pH <2	3-40 mL vials	14 Days
TCL Volatiles Soil	SW8240B	G, Teflon Lined Cap	Cool, 4°C	8 ounces 3-40 mL vials	14 Days
TCLP Volatiles	SW1311 SW8260A SW8240	G, Teflon lined cap	Cool, 4°C	1 liter or 8 ounces	14 Days to TCLP extraction and 14 days after extraction (volatiles);

a. Glass (G).
b. No pH adjustment for soil.
c. Preservation with 0.008 percent $Na_2S_2O_3$ is only required when residual chlorine is present.

6.2.3 Sample Identification

Field ID's will be based on the distance from Nose Dock 8 in lineal feet, combined with the depth and location in the trench. Sample locations will be surveyed for the Final Confirmation Report. Samples shall be identified upon arrival at the laboratory with a Laboratory ID# generated by the computerized LIM system.

6.3 SAMPLE CUSTODY

Procedures to ensure the custody and integrity of the samples begin at the time of sampling and continue through transport, sample receipt, preparation, analysis and storage, data generation and reporting, and sample disposal. Records concerning the custody and condition of the samples are maintained in field and laboratory records.

AEA shall maintain chain-of-custody records for all field and field QC samples. A sample is defined as being under a person's custody if any of the following conditions exist: (1) it is in their possession, (2) it is in their view,

after being in their possession, (3) it was in their possession and they locked it up or, (4) it is in a designated secure area.

All sample containers shall be sealed in a manner that shall prevent or detect tampering if it occurs. In no case shall tape be used to seal sample containers. Samples shall not be packaged with activated carbon unless prior approval is obtained from the C.O.

The following minimum information concerning the sample shall be documented on the chain of custody (COC) form:

- Unique Sample Identification
- Date and time of sample collection
- Source of sample (including name, location, and sample type)
- Designation of matrix spike/matrix spike duplicate (MS/MSD)
- Preservative used
- Analyses required
- Name of collector(s)
- Pertinent field data (pH, temperature, etc.)
- Serial numbers of custody seals and transportation cases (if used)
- Custody transfer signatures and dates and times of sample transfer from the field to transporters and to the laboratory or laboratories
- Bill of lading or transporter tracking number (if applicable)

All samples shall be uniquely identified, labeled, and documented in the field at the time of collection IAW Section 6.2.3 of the FSP.

Samples collected in the field shall be transported to the laboratory or field-testing site as expeditiously as possible. When a 4°C requirement for preserving the sample is indicated, the samples shall be packed in ice or chemical refrigerant to keep them cool during collection and transportation. During transit, it is not always possible to rigorously control the temperature of the samples. As a general rule, storage at low temperature is the best way to preserve most samples. A temperature blank (a volatile organics compounds sampling vial filled with water) shall be included in every cooler and used to determine the internal temperature of the cooler upon receipt of the cooler at the laboratory.

6.4 FIELD QUALITY CONTROL SAMPLES

6.4.1 Ambient Blank

The ambient blank consists of ASTM Type II reagent grade water poured into a volatile organic compound (VOC) sample vial at the sampling site. It is handled like an environmental sample and transported to the laboratory for analysis. Ambient blanks are prepared only when VOC samples are taken and are analyzed only for VOC analytes.

Ambient blanks are used to assess the potential introduction of contaminants from ambient sources (e.g., active runways, engine test cells, gasoline motors in operation, etc.) to the samples during sample collection. Ambient blanks shall be collected downwind of possible VOC sources. The frequency of collection for ambient blanks is specified in Section 3.2.

6.4.1 Equipment Blank

An equipment blank is a sample of ASTM Type II reagent grade water poured into or over or pumped through the sampling device, collected in a sample container, and transported to the laboratory for analysis. Equipment blanks are used to assess the effectiveness of equipment decontamination procedures. The frequency of collection for equipment blanks is specified in Section 3.2. Equipment blanks shall be collected immediately after the equipment has been decontaminated. The blank shall be analyzed for all laboratory analyses requested for the environmental samples collected at the site.

6.4.2 Trip Blank

The trip blank consists of a VOC sample vial filled in the laboratory with ASTM Type II reagent grade water, transported to the sampling site, handled like an environmental sample and returned to the laboratory for analysis. Trip blanks are not opened in the field. Trip blanks are prepared only when VOC samples are taken and are analyzed only for VOC analytes. Trip blanks are used to assess the potential introduction of contaminants from sample containers or during the transportation and storage procedures. One trip blank shall accompany each cooler of samples sent to the laboratory for analysis of VOC's.

6.4.3 Field Duplicates

A field duplicate sample is a second sample collected at the same location as the original sample. Duplicate samples are collected simultaneously or in immediate succession, using identical recovery techniques, and treated in an identical manner during storage, transportation, and analysis. The sample containers are assigned an identification number in the field such that they cannot be identified (blind duplicate) as duplicate samples by

laboratory personnel performing the analysis. Specific locations are designated for collection of field duplicate samples prior to the beginning of sample collection.

Duplicate sample results are used to assess precision of the sample collection process. Precision of soil samples to be analyzed for VOCs is assessed from collocated samples because the compositing process required to obtain uniform samples could result in loss of the compounds of interest. The frequency of collection for field duplicates is specified in Section 3.2.

7.0 FIELD MEASUREMENTS

7.1 PARAMETERS

Soils encountered during sump excavation activity will be field screened for the presence of volatile organic compounds (VOC's) with a photoionization detector (PID) calibrated to manufacturer's standards. Excavated soils with PID readings 5 parts per million (ppm) or greater above established background levels will be segregated from soils with readings less than 5 ppm above established background levels, and stockpiled in locations designated by the contracting officer. Samples will be collected at a rate of one (1) per cubic yard of excavated soil. Samples will be placed in a clean bag and sealed. Time of sampling will be recorded and samples will be placed in an environment of not less than 50 degree Fahrenheit. A headspace vapor will be allowed to develop with in the sealed bag for a period of not less than 10 minutes. The container will then be perforated with the probe of the PID and several readings will be taken. The highest PID reading will be recorded for each sample collected.

7.2 EQUIPMENT CALIBRATION AND QUALITY CONTROL

The PID meters shall be calibrated and maintained in accordance with manufactures instructions, using NIST traceable material. Daily calibration and instrument performance checks will be performed per manufactures recommendations. Performance checks PID readings must agree within 20% of the instrument performance check standard,

7.3 EQUIPMENT MAINTENANCE AND DECONTAMINATION

The PID meter shall be maintained in accordance with manufacturer's recommendations

All field measurement equipment shall be decontaminated according to the specifications in Section 5.1.2 prior to any measurement activities and shall be protected from contamination until ready for use.

8.0 RECORD KEEPING

AEA shall maintain field records sufficient to recreate all sampling and measurement activities and to meet all requirements. The requirements listed in this section apply to all measuring and sampling activities. Requirements specific to individual activities are listed in the section that addresses each activity. The information shall be recorded with indelible ink in a permanently bound notebook with sequentially numbered pages. These records shall be archived in an easily accessible form and made available to the Air Force upon request.

The following information shall be recorded for all field activities: (1) location, (2) date and time, (3) identity of people performing activity and (4) weather conditions. For field measurements: (1) the numerical value and units of each measurement, and (2) the identity of and calibration results for each field instrument, shall also be recorded.

The following additional information shall be recorded for all sampling activities: (1) sample type and sampling method, (2) the identity of each sample and depth(s), where applicable, from which it was collected, (3) the amount of each sample, (4) sample description (e.g., color, odor, clarity), (5) identification of sampling devices, and (6) identification of conditions that might affect the representativeness of a sample (e.g., refueling operations, damaged casing).

Sampling and Analysis Plan
Sump Equipment Removal
SS-016 Nose Dock 8
(Revised 25 June 98)

I. Introduction

The equipment removal at Nose Dock 8 will consist of excavating and removing the 5' x 5' x 9' sump from the northeast corner of the Nose Dock. An estimated 20 cubic yards of soil will need to be removed from the excavation to enable removal of the sump. As the soil is removed, it will be screened by the excavation contractor with a photoionization detector to determine if it is potentially contaminated (greater than 5 ppm) or non-contaminated (5 ppm or less). The potentially contaminated soil will be stockpiled and the non-contaminated soil and process aggregate stone will be backfilled into the excavation. Sampling personnel will be present during the excavation activities to determine appropriate sampling locations.

Soil samples will be taken to measure the level of contamination in the soil remaining in the sidewalls and floor of the excavation. Because no samples have been taken beneath the sump since its 1987 rupture, sampling will provide data relevant to ongoing site SS-016 IRP investigations and remedial actions. Contaminants of concern associated with the 1987 spill at the sump and with suspected leaking piping includes ketones (i.e. acetone), chlorinated hydrocarbons (i.e. trichloroethene), fuel related compounds (i.e. xylenes and naphthalene), and phenols (i.e. 4-methylphenol).

A composite sample of the stockpiled excavated soil will also be taken to determine its disposition. This sample will be analyzed for total volatile organics, semivolatile organics, and RCRA metals. The results will be converted (divided by 20) and compared to RCRA waste disposal criteria.

II. Sampling Procedure

Two soil samples will be taken from the excavation following removal of the sump and soil from the excavation (only soils requiring displacement to enable removal of the sump will be excavated). The first sample (SO16-01) will be a composite of four discrete samples taken from each sidewall of the excavation. Selection of the specific discrete sampling locations on each sidewall will be biased toward areas of visual staining and/or toward areas of high organic vapor readings observed during screening. The volatile fraction of each discrete sample will be composited by the contracted laboratory prior to analysis. The semivolatile fraction will be composited in the field.

The second sample (SO16-02) will be taken from the bottom of the excavation. This sample will be discrete and biased to the location exhibiting the best overall evidence of contamination.

One composite soil sample will be taken from the stockpiled soil (soil with screening measurements greater than 5 ppm). Four discrete locations on the pile will be sampled and composited, one from each quarter of the pile. Selection of the specific sampling location within each quarter will be biased towards areas of visual staining or areas of high organic vapor readings. The volatile fraction of each discrete sample will be composited by the contracted laboratory prior to analysis. The semivolatile and metals fractions will be composited in the field.

Samples from the excavation will be taken from the shovel of the backhoe. Sampling personnel will not enter the excavation. The shovel will be steam cleaned before taking each sample (prior to taking SO16-01 and SO16-02). Each discrete sample will be retrieved from the shovel using a stainless steel sampling spoon.

Samples from the stockpile will be taken with a stainless steel hand auger and sampling spoon. The top 6-inches to 1-foot of soil will be removed at each sampling location before taking the sample.

The volatile soil fraction of each sample will be placed directly into 2 oz. jars and the non-volatile fractions will first be composited in a stainless steel bowl prior to placement in 8 oz. jars. Stainless steel sampling equipment will be decontaminated in a manner consistent with the AFCEE *Handbook for the Installation Restoration Program*, September 1993 (successive rinses with alconox-water, water, methanol, and hexane). Samples will be cooled to 4° C with ice, packed, and shipped immediately to the contracted laboratory. Sample identification numbers will be:

SO16-01-C1	(Sidewall #1 -VOC composite)
SO16-01-C2	(Sidewall #2 -VOC composite)
SO16-01-C3	(Sidewall #3 -VOC composite)
SO16-01-C4	(Sidewall #4 -VOC composite)
SO16-01	(Sidewall SVOC composite)
SO16-02	(Bottom Sample - VOCs & SVOCs)
SO16-03-C1	(Stockpile Location #1 - VOC Comp.)
SO16-03-C2	(Stockpile Location #2 - VOC Comp.)
SO16-03-C3	(Stockpile Location #3 - VOC Comp.)
SO16-03-C4	(Stockpile Location #4 - VOC Comp.)
SO16-03	(Stockpile SVOC & Metals Comp.)
SO16-02DUP	(Duplicate)
SO16-02MS	(Matrix Spike)
SO16-02MSD	(Matrix Spike Duplicate)
SO16-02MSB	(Matrix Spike Blank)
SO16-RB	(Rinse Blank)

III. **Analytical Methodology**

Samples taken from the excavation will be analyzed for TCL Volatile Organic Compounds and TCL Semivolatile Organic Compounds using New York State Analytical Services Protocol (NYSDEC ASP), 10/95 edition, Methods 95-1 and 95-2, respectively. The sample taken from the stockpile will also be analyzed for TCL Volatile Organic compounds and TCL Semivolatile Organic

compounds and will be additionally analyzed for RCRA metals by USEPA 6010B/7471A. The NYSDEC ASP 10/95 edition will be followed and Superfund category deliverables will be provided by the contracted laboratory. The analyses will be validated for usability and completeness according to USEPA Region II data validation procedures. Field quality control samples will be taken during the field sampling event as indicated in the table below.

Sample Description	Volatile Organics	Semivolatile Organics	RCRA Metals
Duplicates	1	1	1
Rinse Blanks	1	1	1
MS/MSD/MSB	1/1/1	1/1/1	1/1/0

IV. **Report**

Results from the sampling event will be compiled into a brief report that presents a description of the work performed, sample results, data usability, and a sketch of sample locations. A discussion of the sample results in relation to the other samples previously collected at SS-016 will also be provided.

Response to Comments
from J. Quinn of the NYSDEC
to the Sampling and Analysis Plan
for the Sump Equipment Removal, Site SS-016 (Nose Dock 8)

COMMENT	RESPONSE
Section I - Paragraph 3:This paragraph should state dividing the results by 20 if the intent here is to mimic the 20-1 dilution involved in the TCLP procedure.	The Sampling and Analysis Plan has been revised to indicate that the results will be divided by 20.
Section II: The intent of the sump removal project, as described in the first sentence of this section, may need to be clarified. The sentence implies that all potentially contaminated soils will be excavated, while it is our impression from the remainder of the documents that only those soils requiring removal to facilitate sump removal will be excavated.	The first sentence of paragraph has been modified to more clearly specify the soil that will be excavated.

Response to EPA Comments
Removal of Oil/Water Separators and Solvent Pipelines
19 June 1998

Work Plan

1. A site drawing showing sampling locations identified in Appendix A has been included.

2a. Piping and concrete will be twice washed with a solution of hot water and detergent, then rinsed with fresh hot water. All effluent will be contained separately (first wash, second wash and rinse) and individually TCLPed for proper characterization and disposal. If the rinse effluent is Non-Hazardous, then the piping will be considered clean. {Paragraph 4.4, Pg.s 14-15 }

2b. During excavation, continuous (one per cubic yard) jar or bag headspace monitoring will occur with two separate PID meters; one for 10.6 eV or less and the other for 11.7 eV. The 5 ppm or greater cutoff in soil segregation is the standard that has been in use on many other projects at Plattsburgh AFB. {Paragraph 4.5, Pg.s 18-19 }

2c. Most of the work will be conducted in Level D-Modified. Exceptions to this are when the contractor is removing the known hazardous material for the Dock 8 sump, when first accessing the solvent pipelines or when field screening readings exceed exposure limits as defined in the Work Plan. {Paragraph 4.7, Pg.s 20-21 }

3a. Existing liquid in Dock 8 sump will be pumped into drums and stored in overpacks until proper manifesting and removal. {Paragraph 3.1, Pg. 4}

3b. Concrete will be segregated based on field observations and site. A minimum of three composite samples will be taken to classify as hazardous or non-hazardous. Note: Bldg. 2626 sump may not require sampling if the analytical results of residual liquid/solids is Non-Hazardous. {Paragraph 3.1, Pg. 4} & {Paragraph 3.3, Pg. 10}

4a. Laboratory sampling of in-situ soils will be based on field screening and visual observations, but at a minimum, one sample will be collected per 300 LF of trench.
{Paragraph 3.2, Pg. 8}

4b. See response to Comment 2b.

4c. Two types of sampling will be occurring during the course of this project. TCLP sampling of residual liquids and/or solids for proper characterization and disposal of these materials, and TCL VOCs of the excavated soils that exhibit a PID reading of 5 ppm or greater than background. The sampling frequency of the excavated soils will be determined once the quantity of soils are known - see AFBCA letter to EPA dated 10 Dec 97.

5. No intrusive work will be performed at Building 2626 until the analytical results of the residual liquid and/or solids are received. Work methodologies will be based on these results (i.e; if

analytical results indicate no contamination, additional sampling would not be required.) {Paragraph 3.3, Pg. 9}

6. See response to Comment 3b

7. See response to Comment 2b.

8. See response to Comment 2a

9. The sampling frequency of the excavated soils will be determined once the quantity of soils are known {AFBCA letter to EPA dated 10 Dec 97.}

10a. Text has been changed to read "...Contract Officer/Contract Officer Representative." {Paragraph 4.9, Pg. 22}

10b. The statement concerning average rainfall and fugitive dust generated has been removed and replaced with more appropriate verbiage. {Paragraph 4.9, Pg. 22}

11a. Due to the nature of work, certain items that could be considered sources of ignition will be required to be on site, however these will be kept to a minimum and appropriate fire suppression equipment will be readily accessible. {Paragraph 4.10, Pg. 22}

11b. Excavations will be backfilled as soon as in-situ soil sampling and surveying is completed. Native soils that were under 5ppm will be used first, followed by any offsite-derived fill (stone) needed to complete the restoration. {Paragraph 4.12, Pg. 26}

12. Text has been revised in Work Plan to include additional information concerning Spill Response. {Paragraph 4.11, Pg.s 23-26}

13. Text has been revised - all personnel at the site will have received 40 hours of HAZWOPER training per 29CFR 1910.120 {Paragraph 4.11, Pg. 23}

14. Text has been revised to clearly identify Adirondack Environmental as the on-site environmental consultant. {Paragraph 1.0, Pg.1}

Field Sampling Plan

1. See Appendix A of the Work Plan for Site Drawing.

2. Table 3-1 has been revised to reflect contract documents and represents the minimum number of samples that will be taken. Additional samples will be collected if field conditions warrant such action to properly characterize the site. {Pg. 4}

3. Table 3-1 has been revised to include one sample (TCLP) per vessel of wash/rinse water generated. Contractor plans on using 500 or 1,000 Gallon holding tanks to capture decontamination effluent. {Pg. 4}

4. Table 3-1 has been revised to be consistent with AFBCA's letter to EPA dated 10 Dec 97 in which the number of samples will be determined once the actual quantity of excavated soils are known. {Pg. 4}

5. Table 3-2 has been deleted.

6. Project organization and responsibilities have been more clearly defined.{Paragraph 4.0, Pg. 5}

7. Text has been revised slightly. Large equipment will be washed and rinsed with detergent, while sampling equipment will also include the use of ASTM Type II water. Method of collection is also described. {Paragraph 5.2, Pg. 6}

8. Text has been revised. All samples will be "grab" as indicated in Table 3-1. {Pg. 4}

9. Text has been revised - sample containers will not be reused. {Paragraph 6.2.1, Pg. 7}

10. Table 6.2.2-1 has been revised as requested. {Pg. 8}

11. Text has been revised to include sample collection based on field observations. Parameters associated with sample collection are as identified in Paragraph 8.0, Record Keeping.

12. Text has been revised to include head space analysis during field screening. {Paragraph 7.1, Pg.11}

13. The PID meters will be used and maintained according to manufacturer's recommendations. {Paragraph 7.1, Pg.11}

14. Text has been revised. Decontamination is covered in Paragraph 5.2

Response to NYSDEC Comments
Removal of Oil/Water Separators and Solvent Pipelines
19 June 1998

Work Plan

1. [Section 3.1] See response 2b to USEPA comments and revised text in Paragraphs 4.5 and 4.8

2. [Section 3.2] Residual liquids in sump will be removed prior to any demolition of the concrete. Also see response 3b to USEPA comments and revised Paragraph 3.1, Pg. 4

3. [Section 3.3] See revised Paragraph 3.2, Pg. 8

4. [Section 3.4] See revised Paragraph 3.3 and 4.4

5. [Section 4.9] Samples of stockpiled and in-situ soil will be analyzed for Target Compound List (TCL) as shown in Appendix B. Laboratory results shall be CLP Level III validated and the results compared to NYS TAGM HWR-94-4046 (See Note 1 to Table 3-1).

6. [Appendix A] Table 4-1 is listed as reference only and may be extracted from the Nose Dock 8 (SS-016) Remedial Investigation Report December 1995 Volume 1 of 2.

Field Sampling Plan

The document has been revised to more clearly indicate methods to be utilized in sampling and analysis of soils and liquids.

[Section 6.1.1] Only grab samples will be collected during this project since VOA's are the only contaminates of concern. Text has been revised.