

ADMINISTRATIVE RECORD

Frankfort Asbestos Site

**Frankfort,
Herkimer County, New York.**

**Prepared for:
Jack Harmon, On-Scene Coordinator
U. S. EPA Region II
Removal Action Branch
Edison, New Jersey 08837**

**Prepared by:
Region II Removal Support Team 2
Weston Solutions, Inc.
Federal Programs Division
Edison, New Jersey 08837**

**DCN #: RST 2-02-F-0345
TDD # TO-0007-0098
EPA Contract No.: EP-W-06-072**

October 2007

SDMS Document



110255

Administrative Records in Local Repositories

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The Agency welcomes comments at any time on documents contained in the Administrative Record file. Please send any such comments to Jack Harmon, Removal Action Branch, U.S. EPA Region II, 2890 Woodbridge Avenue, Edison, NJ 08837.

For further information on the Administrative Record file, contact Jack Harmon, On-Scene Coordinator, U.S. EPA Region II, at (732) 321-6933.

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CRUMB TRAILER PARKSITE

ADMINISTRATIVE RECORD FILE

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FRANKFORT ASBESTOS SITE

ADMINISTRATIVE RECORD FILE

MODEL INDEX OF DOCUMENTS

The index of documents contains the following information about each document:

Document #: Site Code (three letters of site name)-Section, First Page-Section - Last Page
EXAMPLE (FAS1.1001 - 1.1002)

Title: Abstract of Document Contents

Category: Document Category/Section of Administrative Record File

Author: Writer and affiliation

Recipient: Addressee or Public and Affiliation, if applicable

Date: When document was created or transmitted

Note: Items in the Administrative Record are for public access, and should be removed from the file only for copying. The cost of reproduction of the documents in the file is the responsibility of the person requesting the copy.

FRANKFORT ASBESTOS SITE

ADMINISTRATIVE RECORD FILE INDEX OF DOCUMENTS

Document #: FAS2.1001- FAS2.1056

Title: Revised Quality Assurance Project Plan,
Frankfort Asbestos Site, Frankfort, Herkimer County, New York

Category: Sampling and Analysis Plan/Work Plan

Author: Sayed Iqbal, Site Project Manager, Removal Support Team 2, Weston Solutions, Inc.,
Federal Program Division, Edison, New Jersey

Recipient: David Rosoff, On-Scene Coordinator, Removal Action Branch, United States
Environmental Protection Agency Region II, Edison, New Jersey

Date: September 18, 2007

Document #: FAS2.2001- FAS2.2044

Title: Data Validation Assessment, Frankfort Asbestos Site, Frankfort, New York

Category: Sampling and Analysis Data/Chain of Custody Forms/Data Validation Assessment

Author: Smita Sumbaly, Data Reviewer, Removal Support Team 2, Weston Solutions, Inc.,
Federal Program Division, Edison, New Jersey

Recipient: David Rosoff, On-Scene Coordinator, Removal Action Branch, United States
Environmental Protection Agency Region II, Edison, New Jersey

Date: August 31, 2007

Document #: FAS2.2045 - FAS2.2072

Title: Data Validation Assessment, Frankfort Asbestos Site, Frankfort, New York

Category: Sampling and Analysis Data/Chain of Custody Forms/Data Validation Assessment

Author: Smita Sumbaly, Data Reviewer, Removal Support Team 2, Weston Solutions, Inc.,
Federal Program Division, Edison, New Jersey

Recipient: David Rosoff, On-Scene Coordinator, Removal Action Branch, United States
Environmental Protection Agency Region II, Edison, New Jersey

Date: September 20, 2007

Document #: FAS2.5001 - FAS2.5018

Title: Action Memorandum: Request for a Removal Action at the Frankfort Asbestos Site,
Frankfort, Herkimer County, New York

Category: Action Memorandum

Author: Jack D. Harmon, On-Scene Coordinator, Removal Action Branch, United States
Environmental Protection Agency Region II, Edison, New Jersey

Recipient: George Pavlou, Director, Emergency & Remedial Response Division, United States
Environmental Protection Agency, Region II, 290 Broadway, New York, New York

Date: September 20, 2007

Document #: FAS2.8001 – FAS2.8030

Title: Health and Safety Plan, Frankfort Asbestos Site, Frankfort, Herkimer County, New York

Category: Other Technical Documents/Health and Safety Plan

Author: Sayed Iqbal, Site Project Manager, Removal Support Team 2, Weston Solutions, Inc., Federal Program Division, Edison, New Jersey

Recipient: David Rosoff, On-Scene Coordinator, Removal Action Branch, United States Environmental Protection Agency Region II, Edison, New Jersey

Date: July 18, 2007

Document #: FAS2.9001 – FAS2.9094

Title: Trip Report – Soil and Debris Sampling, September 2007, Frankfort Asbestos Site, Frankfort, New York

Category: Sampling and Analysis Reports/Trip Reports

Author: John Brennan, Group Leader, Removal Support Team 2, Weston Solutions, Inc., Edison, New Jersey

Recipient: David Rosoff, On-Scene Coordinator, Removal Action Branch, United States Environmental Protection Agency Region II, Edison, New Jersey

Date: September 19, 2007

Document #: FAS2.10001- FAS2.10004

Title: Removal Site Evaluation for the Frankfort Asbestos Site, Frankfort, Herkimer County, New York

Category: Removal Site Evaluation

Author: David Rosoff, On-Scene Coordinator, Removal Action Branch, United States Environmental Protection Agency Region II, Edison, New Jersey

Recipient: File

Date: September 20, 2007

Document #: FAS11.2001-FAS11.2002

Title: EPA Regional Guidance Documents

Category: EPA Regional Guidance

Author: United States Environmental Protection Agency, Region II, Edison, New Jersey, 08837

Recipient: General Public

Date: None Given



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REMOVAL SUPPORT TEAM 2
EPA CONTRACT EP-W-06-072

September 18, 2007

Mr. David Rosoff, On Scene Coordinator
U.S. Environmental Protection Agency
Removal Action Branch
2890 Woodbridge Avenue
Edison, NJ 08837

EPA CONTRACT NO: EP-W-06-072

TDD NO: TO-0007-0019

DOCUMENT CONTROL NO: RST 2-02-F-0321

SUBJECT: REVISED QUALITY ASSURANCE PROJECT PLAN - Multimedia Sampling
Event for the Frankfort Asbestos Site, Frankfort, Herkimer County, New York.

Dear Mr. Rosoff:

Enclosed please find the revised Quality Assurance Project Plan (QAPP) for the multimedia sampling event to be conducted at the Frankfort Asbestos Site, Frankfort, Herkimer County, New York.

If you have any questions, please do not hesitate to call me at (732) 585-4440.

Sincerely,

Weston Solutions, Inc.

A handwritten signature in black ink that reads "Sayed Iqbal".

Sayed Iqbal
Removal Support Team 2
Site Project Manager

Enclosure

cc: TDD File No.: TO-0007-0019
S. Sumbaly, Chemist / QA/QC Specialist



SITE QUALITY ASSURANCE PROJECT PLAN

**Frankfort Asbestos Site
Frankfort, Herkimer County, New York**

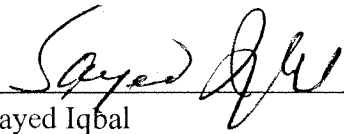
Prepared by
Removal Support Team 2
Weston Solutions, Inc.
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Edison, New Jersey 08837

Prepared for

U.S. Environmental Protection Agency
Region II - Removal Action Branch
Edison, New Jersey 08837

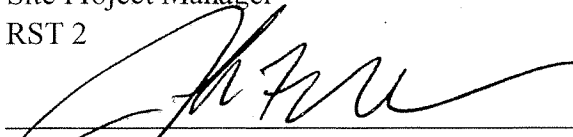
DCN #: RST 2-02-F-321
TDD #: TO-0007-0019
EPA Contract No.: EP-W-06-072

Approved by:



Sayed Iqbal
Site Project Manager
RST 2

Date: 9/18/07



John Brennan
Group Leader/Alt. Health & Safety Officer
RST 2

Date: 9/18/07

David Rosoff
On-Scene Coordinator
EPA

Date: _____

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ATTACHMENT A: Site Location Map

ATTACHMENT B: EPA/ERT Sampling SOPs

1. INTRODUCTION

Presented herein is the Site Quality Assurance Project Plan (QAPP) for the sampling event to be conducted at the Frankfort Asbestos Site, Frankfort, Herkimer County, New York, by the Region II Removal Support Team 2 (RST 2). The site QAPP has been developed at the request of the U.S. Environmental Protection Agency (EPA) in accordance with the RST 2 generic Quality Assurance Project Plan (QAPP).

This plan is based on information currently available and may be modified on-site in light of field screening results and other acquired information. All deviations from this QAPP will be noted in the Sampling Trip Report.

2. PROJECT DESCRIPTION

The Frankfort Asbestos Site is located at 3720 Southside Road in the town of Frankfort, Herkimer County, New York. The Frankfort Asbestos Site is a parcel of land adjacent to the Erie Canal where illegal surface dumping of asbestos containing construction/building materials has taken place. The debris pile consists of approximately 40,000 – 60,000 tons of debris on an area of approximately 400 ft by 200 ft, with a height of approximately 20 ft.

On November 14, 2006, EPA Criminal Investigation Division (CID), National Enforcement Investigation Center (NEIC), and New York State Department of Environmental Conservation (NYSDEC) personnel conducted a consent search of the Site. The investigation team collected debris samples from the wastes piles for asbestos analysis. Samples collected were observed to be floor tiles, transitè, corrugated cement sheeting, shingles, dirt and debris. All debris samples were analyzed by the NEIC laboratory. Nine of the samples were reported as containing asbestos in amounts greater than one percent.

3. PROJECT ORGANIZATION AND RESPONSIBILITIES

The EPA On-Scene Coordinator (OSC), David Rosoff, will provide overall direction to the staff concerning project sampling needs, objectives, and schedule. The Site Project Manager (SPM), Sayed Iqbal, will be the primary point of contact with the OSC. The SPM is responsible for the development and completion of the Sampling QA/QC Plan, project team organization, and supervision of all project tasks, including reporting and deliverables. The Site QC Coordinator will be responsible for ensuring field adherence to the Sampling QA/QC Plan and recording of any deviations. The RST 2 QA/QC Specialist, Smita Sumbaly, will be the primary project contact for the subcontracted laboratory.

RST 2 will arrange for the laboratory analyses and transfer custody of the soil samples for shipment to the appropriate laboratory. The raw analytical data from any RST 2 procured commercial laboratory will be provided in Staged Electronic Data Deliverable (SEDD) format minimum Stage 2A to the RST 2 QA/QC Specialist for data validation.

The following sampling personnel will work on this project:

<u>Personnel</u>	<u>Affiliation</u>	<u>Responsibility</u>
David Rosoff	USEPA	On-Scene Coordinator
Sayed Iqbal	RST 2	Site Project Manager, Field Coordinator, Sample Collection
John Brennan	RST 2	Location Data Collection, Health & Safety, Sample Management
Jeffery Jager	RST 2	Sample Collection, Sample Management
Smita Sumbaly	RST 2	Laboratory Procurement, Data Validation, Site QA/QC

The following laboratories will provide the analyses indicated:

Lab Name/Location	Sample Type	Parameters
Non-CLP EMSL Analytical, Inc. 107 Haddon Avenue Westmond, NJ 08108 800-220-3675	Surface Soil and Aqueous Rinsate	Total Lead, Asbestos and TCL Semi-Volatile Organic Compounds
Non-CLP EMSL Analytical, Inc. 107 Haddon Avenue Westmond, NJ 08108 800-220-3675	PACM Material and Aqueous Rinsate	Total Lead and TCL Semi- Volatile Organic Compounds

A turnaround time of one week for verbal and two weeks for written results has been requested in order to quickly ascertain the potential for migration of contaminants from the pile into the surrounding community.

4. DATA USE OBJECTIVES, QA OBJECTIVES

In addition to the following, the data use objectives, QA objectives procedure will be conducted in accordance with Sections A7, B2, B4, and B5 of the Region II RST 2 QAPP.

The objective of this Removal Site Assessment is to determine the scope of a removal action at the site. Data will also be evaluated to assess potential risks to human health and the environment from exposure to hazardous substances attributable to the site.

4.1 DATA QA OBJECTIVES

The overall quality assurance (QA) objective for chemical measurement data associated with this sampling event is to provide analytical results that are legally defensible in a court of law. The QA program will incorporate quality control (QC) procedures for field sampling, chain-of-custody, laboratory analyses, and reporting to ensure generation of sound analytical results.

The EPA On-Scene Coordinator (OSC) has specified a Level 3 QA (QA-3) objective for field sampling. Details of these QA levels follow.

4.2 QA OBJECTIVES

The following requirements apply to the respective QA objectives and parameters identified.

As delineated in the *Uniform Federal Policy for Quality Assurance Project Plans, Part 2B: Quality Assurance/Quality Control Non-Time Critical QA/QC Activities*, the following requirements apply to the respective QA objectives and parameters identified.

The QA protocols for a Level 1 (Screening Data, without confirmation) have limited use, specifically for: Emergencies, Health and Safety screening using (e.g. Multi Rae, OVM, Jerome Mercury...etc.). The QA Level 1 objective sampling events are applicable to all sample matrices and include:

1. Sample Documentation (location, date and time collected, batch, etc.)
2. Description of equipment and instrumentation
3. Sample documentation in the form of field logbooks, appropriate field data sheets, and chain-of-custody (when appropriate) records and procedures for field sampling management (e.g., sample location, transport, storage, sample collection methods and shipping procedure)
4. Calibration of all monitoring and/or field-portable analytical equipment prior to collection and analyses of samples with results and/or performance check procedures/methods summarized and documented in a field, personal, and/or instrument log notebook.
5. Analyte(s) identification
6. Field or laboratory determined method detection limits (MDLs) will be recorded along with corresponding analytical sample results, where appropriate.
7. Initial and continuous instrument calibration data.

For QA-2 Objective:

The QA protocols for a Level 2 (screening data with definitive confirmation) QA objective

sampling event are applicable to all sample matrices and include:

All QA level 1 requirements listed above and:

8. Analytical error determination (Measure the precision of the analytical method, replicate and standard laboratory QC parameters, method-specific requirements specified in the QAPP).
9. Definitive Confirmation (At least 10 percent of the screening data must be confirmed with definitive data)

For QA-3 project:

The QA protocols for a Level 3 (definitive data) QA objective sampling event are applicable to all sample matrices and include:

All QA level 1 and QA level 2 requirements listed above and:

10. Collection and analysis of blind field duplicate sample
11. Field blanks (for dedicated and non-dedicated equipment), rinse blanks (for non-dedicated equipment), and
12. Matrix Spike/Matrix Spike Duplicate (MS/MSD) QC samples to provide a quantitative measure of the analytical precision and accuracy, as applicable.
13. Performance Testing sample (project specified).

Definitive identification - confirm the identification of analytes on 100% of the "critical" samples, via an EPA-approved method; provide documentation such as gas chromatograms, mass spectra, etc.

The objective of this project/event applies to the following parameters: (Table 1)

Table 1**Quality Assurance Objectives**

Analytical Parameters	Matrix	Intended Use of Data	QA Objective
TCL Semi-Volatile Organic Compounds	Surface Soil and Rinsate Blank	Verify the presence or absence of hazardous substances	QA-3
Total Lead	Surface Soil and Rinsate Blank	Verify the presence or absence of lead	QA-3
Asbestos	Surface Soil and Rinsate Blank	Verify the presence or absence of asbestos fibers	QA-3
TCL Semi-Volatile Organic Compounds	Debris Material	Verify the presence or absence of hazardous substances	QA-3
Total Lead	Debris Material	Verify presence or absence of lead	QA-3

Table 2
Field Sampling Summary

Analytical Parameters	Matrix	Container Size	Preservative	Holding Time ¹	Subtotal Samples	Rinsate Blanks ²	Duplicate Samples ³	MS/MSD Samples ³	Total Field Samples
TCL Semi-VOCs	Soil, Debris	1- 8oz glass	Cool to 4 °C	7 days extraction, 40 days to analysis	22		2	2	26
TCL Semi-VOCs	Aqueous Rinsate	2 - 1 liter amber glass	Cool to 4 °C	7 days extraction, 40 days to analysis		4			4
Asbestos (PLM) Asbestos (TEM)	Soil	1 - 4 oz glass	NR	None	40		2	N/A	42
Asbestos TEM	Aqueous Rinsate	1 - 1 liter amber boston round	Cool to 4 °C	48 hours to filtration		4		N/A	4
Total Lead	Soil, Debris	1 - 8 oz glass	Cool to 4 °C	6 months, 28 days for Hg	46		3	3	52
Total Lead	Aqueous Rinsate	1 - 1Liter polyethylene	Cool to 4 °C, HNO ₃ to pH <2	6 months, 28 days for Hg		4			4

¹ Holding time from date of sampling.

² Only required if non-dedicated sampling equipment to be used. NR - not required; dedicated sampling equipment to be used.

³ Not required for QA-1 (screening)

Refer to Attachment B for a list of EPA/ERT SOPs to be used.

Table 3
QA/QC Analysis and Objectives Summary

Analytical Parameters	Matrix	Analytical Method Reference	QA/QC Quantitation Limits	QA Objective
Semi-VOCs	Soil/Debris	CLP SOW SOMO 1.1 or SW 846-8270C	As per method	QA-3
Semi-VOCs	Aqueous	CLP SOW SOMO 1.1 or SW 846-8270C	As per method	QA-3
Total Lead	Soil/Debris	CLP SOW ILMO 5.3 or SW 846 Method 6010A/7000	As per method	QA-3
Total Lead	Aqueous	CLP SOW ILMO 5.3 or SW 846 Method 6010A/7000	As per method	QA-3
Asbestos - PLM	Soil	California Air Resources Board (CARB) 435	As per method	QA-3
Asbestos - TEM	Soil	EAP 600/R-93/116	As per method	QA-3
Asbestos	Aqueous	EPA 100.1	As per method	QA-3

Note: CLP-format deliverables required for all data packages.

5. APPROACH AND SAMPLING PROCEDURES

In addition to the following, the approach and sampling procedures will be conducted in accordance with Sections B1 and B4 of the Region II RST 2 QAPP.

The following sampling activities will be conducted at the Frankfort Asbestos Site:

- Collect multimedia samples including debris pile samples of shredded construction debris, surface soil samples from the soils surrounding the debris pile, surface soil samples from the adjacent farm and an open property next to the farm, and surface soil samples from the area designated as the “flood plain” for TCL-SVOCs, lead and asbestos analysis.
- Collect locational data using global positioning system (GPS) technology for all sample locations and significant site features.

This summary of field activities is based on information currently available and may be modified on-site in light of field-screening results and other acquired information. All deviations from the sampling plan will be noted in the Sampling Trip Report.

5.1 SAMPLING DESIGN

The field program will include the collection of debris and surface soil samples. All sampling activities will be performed by the Region II RST 2, under the direction of the EPA On-Scene Coordinator (OSC).

Surface Soil Sampling (0-1”)

Soils Surrounding the Debris Pile: A total of twelve surface soil samples including a duplicate sample will be collected from the soils located directly adjacent to the exposed sides of the debris pile. The purpose of collecting these samples is to determine if asbestos, lead, or semi-volatile organic compounds are migrating from the debris pile into the nearby soils. Each soil sample will be analyzed for asbestos, lead, and SVOCs.

The debris pile will be measured using global positioning system (GPS) technology. The approximate size of the exposed perimeter of the debris pile will be calculated. Based on the calculation, soil samples including one duplicate will be collected from below the exposed sidewall of the debris pile at equal intervals.

Farm Area: A total of twelve surface soil samples will be collected at the adjacent farm located north of the debris pile. Prior to sample collection, a sample grid will be established to cover the perceived down wind area of the farm from the debris pile. Samples will be collected from the nodes of the grid area. All samples will be homogenized prior to placement into sample jars.

River Flood Plain Area: A total of twelve surface soil samples will be collected from the nearby Mohawk River flood plain area located west of the debris pile. Prior to sample collection a sampling grid will be established to cover the down gradient area of the flood plain from the

debris pile. Samples will be collected from the nodes of the grid area. All samples will be homogenized prior to placing into sample jars.

Debris Pile Sampling (0-6")

Debris Pile: Debris samples will be collected from 10 locations on the pile to investigate the presence of semi-volatile organic compounds and lead. Debris samples will be collected from 0-6" below the surface using hand auger, stainless steel scoops and shovels. Debris samples will be sieved (No. 10) and homogenized in the field prior to placement into sample jars. Only the fines that pass through the sieve will be submitted for analysis.

Duplicates and field blanks will also be submitted for quality control. Actual sample locations will be based on locations chosen by the OSC. To the greatest extent possible, these samples will be collected utilizing either dedicated plastic scoops, depending upon the matrix to be sampled. All non-dedicated sampling equipment (i.e. sieve, hand augers, pick or shovel) will be decontaminated in accordance to EPA/ERT SOP # 2006 before, during and after the sampling event.

5.2 SCHEDULE OF ACTIVITIES

Proposed Start Date	Activity	End Date
July 31, 2007	Debris and Surface Soil Sampling; Locational Data Collection	August 02, 2007

5.3 SAMPLING EQUIPMENT

In order to avoid cross-contamination, all surface and debris samples will be collected with dedicated disposable scoops in order to avoid cross-contamination. All non-dedicated sampling equipment (i.e. sieves, hand augers, pick or shovel) will be decontaminated before, during and after the sampling event and appropriate rinsate blank will be taken. Refer to section 5.5.2 for decontamination procedures.

5.4 SAMPLE IDENTIFICATION SYSTEM

Each sample collected by Region II RST 2 will be designated by a code that will identify the site. The code will be a site-specific project tracking number. The code for the Frankfort Asbestos Site is FA. The media type will follow the numeric code. A hyphen will separate the site code and media type. Specific media types are as follows:

- S – Surface Soil Sample
- DF – Debris (Fine Material) Sample
- RIN – Rinsate Blank

FB – Field Blank

After the media type, the sequential sample numbers will be listed; sample numbers will be identified as to their location area on the site and/or the location on the x and y coordinates of the sampling grid. A duplicate sample will be identified in the same manner as other samples and will be distinguished and documented in the field logbook.

5.5 STANDARD OPERATING PROCEDURES (SOPs)

5.5.1 Sample Documentation

All sample documents will be completed legibly, in ink. Any corrections or revisions will be made by lining through the incorrect entry and by initialing the error.

Field Logbook

The field logbook is essentially a descriptive notebook detailing site activities and observations so that an accurate account of field procedures can be reconstructed in the writer's absence. All entries will be dated and signed by the individuals making the entries, and should include (at a minimum) the following:

1. Site name and project number
2. Name(s) of personnel on-site
3. Dates and times of all entries (military time preferred)
4. Descriptions of all site activities, site entry and exit times
5. Noteworthy events and discussions
6. Weather conditions
7. Site observations
8. Sample and sample location identification and description *
9. Subcontractor information and names of on-site personnel
10. Date and time of sample collections, along with chain of custody information
11. Record of photographs
12. Site sketches

* The description of the sample location will be noted in such a manner as to allow the reader to reproduce the location in the field at a later date. GPS coordinates for each sample location will be noted and plotted using a system of X-Y coordinates. These locations will then be plotted on a scaled map for future reference. Photographs of all sampling locations will be logged as well.

Sample Labels

Sample labels will clearly identify the particular sample, and should include the following:

1. Site/project number.
2. Sample identification number.
3. Sample collection date and time.

4. Designation of sample (grab or composite).
5. Sample preservation.
6. Analytical parameters.
7. Name of sampler.

Sample labels will be written in indelible ink (or printed using an inkjet printer) and securely affixed to the sample container. Tie-on labels can be used if properly secured.

Custody Seals

Custody seals demonstrate that a sample container has not been tampered with or opened. The individual in possession of the sample(s) will sign and date the seal, affixing it in such a manner that the container cannot be opened without breaking the seal. The name of this individual, along with a description of the sample packaging, will be noted in the field logbook.

5.5.2 Sampling SOPs

The following sampling SOPs will be used for this project:

EPA/ERT General Field Sampling Guidelines #2001 (Attachment B)

EPA/ERT Sampling Equipment Decontamination #2006 (Attachment B)

EPA/ERT Soil Sampling #2012 (Attachment B)

Decontamination

All non-dedicated equipment involved in field-sampling activities will be decontaminated in accordance to EPA/ERT SOP #2006 prior to and subsequent to sampling. Decontamination of sampling equipment will be kept to a minimum in the field; whenever possible dedicated sampling equipment will be used. Decontamination of sampling equipment, including stainless-steel scoops and bowls, will be conducted as follows:

1. Alconox detergent and potable water scrub.
2. Potable water rinse.
3. A 10% nitric acid rinse (ultra pure grade) when sampling for inorganic parameters.
4. Distilled or potable water rinse.
5. An acetone-only rinse or a methanol rinse followed by a hexane rinse (pesticide-grade or better).
6. Deionized water rinse.
7. Air dry (sufficient time will be allowed for the equipment to completely dry).
8. Wrap or cover exposed ends of sampling equipment with aluminum foil (shiny side out) for transport and handling.

5.5.3 Sample Handling and Shipment

Each of the sample bottles will be sealed and labeled according to the following protocol. Caps will be secured with custody seals. Bottle labels will contain all required information including site/project code and sample number, time and date of collection, analyses requested, and preservative used. Sealed bottles will be placed in large metal or plastic coolers, and padded with an absorbent material such as vermiculite. All packaging will conform to IATA transportation regulations for overnight carriers.

All sample documents will be sealed in a plastic bag and affixed to the underside of each cooler lid. The lid will be sealed and affixed on at least two sides with custody seals so that any sign of tampering is easily visible.

5.6 SAMPLE CONTAINERS

All sample containers will meet the QA/QC specifications in OSWER Directive 9240.0-05A, "Specifications and Guidance for Contaminant Free Sample Containers."

5.7 DISPOSAL OF PPE AND CONTAMINATED SAMPLING MATERIALS

All PPE used by RST-2 will be disposed of in an appropriate trash receptacle during this site investigation. Dedicated sampling materials will have gross contamination removed and will be bagged and staged on site for disposal during the removal action.

6. SAMPLE CUSTODY

In addition to the following, the sample custody procedure will be conducted in accordance with Section B3 of the Region II RST 2 QAPP.

A chain-of-custody record will be maintained from the time the sample is taken to its final deposition. Every transfer of custody must be noted and signed for, and a copy of this record kept by each individual who has signed. When samples (or groups of samples) are not under direct control of the individual responsible for them, they must be stored in a locked container sealed with a custody seal. Specific information regarding custody of the samples projected to be collected on the weekend will be noted in the field logbook.

The chain-of-custody record should include (at minimum) the following:

1. Sample identification number
2. Sample information
3. Sample location
4. Sample date
5. Name(s) and signature(s) of sampler(s)
6. Signature(s) of any individual(s) with custody of samples

A separate chain-of-custody form must accompany each cooler for each daily shipment. The chain-of-custody form must address all samples in that cooler, but not address samples in any

other cooler. This practice maintains the chain-of-custody for all samples in case of mis-shipment.

7. FIELD INSTRUMENT CALIBRATION AND PREVENTIVE MAINTENANCE

In addition to the following, the field instrument and preventative maintenance procedure will be conducted in accordance with Section B5 of the Region II RST 2 QAPP.

The sampling team is responsible for ensuring that a calibration/maintenance log will be brought into the field and maintained for each measuring device. Each log will include at a minimum, where applicable:

- Name of device and/or instrument calibrated.
- Device/instrument serial and/or ID number.
- Frequency of calibration.
- Date of calibration.
- Results of calibration.
- Name of person performing the calibration.
- Identification of the calibrant.

Equipment to be used each day will be calibrated prior to the commencement of daily activities.

8. ANALYTICAL METHODS

Analytical methods to be utilized in the analyses of samples collected during this sampling event are detailed in Table 3.

9. DATA REDUCTION, VALIDATION, AND REPORTING

In addition to the following, the data reduction, validation, and reporting procedure will be conducted in accordance with Sections D1 of the Region II RST 2 QAPP.

9.1 DELIVERABLES

The RST 2 SPM, Sayed Iqbal, will maintain contact with the EPA OSC, David Rosoff, to keep him informed about the technical and financial progress of this project. This communication will commence with the issuance of the work assignment and project scoping meeting. Activities under this project will be reported in status and trip reports and other deliverables (e.g., analytical reports, final reports) described herein. Activities will also be summarized in appropriate format for inclusion in monthly and annual reports.

The following deliverables will be provided under this project:

Trip Report

A trip report will be prepared to provide a detailed account of what occurred during each sampling mobilization. The trip report will be prepared within 1 week of the last day of each sampling mobilization. Information will be provided on time of major events, dates, and personnel on-site (including affiliations), and preliminary analytical data.

Maps/Figures

Maps depicting site layout, contaminant source areas, and sample locations will be included in the trip report, as appropriate.

Analytical Report

An analytical report will be prepared for samples analyzed under this plan. Information regarding the analytical methods or procedures employed, sample results, QA/QC results, chain-of-custody documentation, laboratory correspondence, and raw data will be provided within this deliverable.

Data Review

A review of the data generated under this plan will be undertaken. The assessment of data acceptability or usability will be provided separately, or as part of the analytical report.

9.2 DATA VALIDATION

For QA-1 and QA-2 (Field screening and Screening with Definitive Confirmation) projects:

QA-1 and QA-2 data need only be evaluated for calibration and detection limits criterion.

For QA-3 projects:

Data generated under this QA/QC Sampling Plan will be evaluated according to **guidance in the Uniform Federal Policy for Implementing Environmental Quality Systems: Evaluating, Assessing and Documenting Environmental data Collection and Use Programs Part 1: UFP-QAPP (EPA-505-B-04-900A, March 2005); Part 2B: Quality Assurance/Quality Control Compendium: Minimum QA/QC Activities (EPA-505-B-04-900B, March 2005); the CLP National Functional Guidelines for Organic and Inorganic Data Review and the Region 2 Data Validation SOPs:**

Laboratory analytical results will be assessed by the data reviewer for compliance with required precision, accuracy, completeness, representativeness, and sensitivity.

10. FIELD QUALITY CONTROL CHECKS AND FREQUENCY

In addition to the following, the field quality control checks and frequency procedure will be conducted in accordance with Section B6 of the Region II RST 2 QAPP.

This section details the QA/QC requirements for field activities performed during the sampling event.

QA/QC samples will include the collection of one field duplicate and one matrix spike/matrix spike duplicate (MS/MSD) sample for each matrix (soil, debris, air) at a ratio of 1 per 20 samples (for QA-3). Extra sample volume will be submitted to allow the laboratory to perform matrix spike matrix/spike duplicate (MS/MSD) sample analysis. This analysis provides information about the effect of the sample matrix on digestion and measurement methodology. Field duplicate samples provide an indication of analytical variability and analytical error and will not be identified to the laboratory.

Field rinsate blanks will be collected when non-dedicated sampling equipment is used. A field rinsate blank will consist of distilled deionized (DI), demonstrated analyte-free water that has been poured over decontaminated sampling equipment. The field rinsate blank analytical results will be utilized in evaluation of potential cross-contamination resulting from inadequate decontamination only if non-dedicated sampling equipment is used. The frequency of field rinsate blank collection is one blank per decontamination event per types of analyses requested, not to exceed more than one per day. Blanks will be collected for all parameters of interest (excluding physical parameters) and shipped with the samples collected the same day. Field rinsate blanks will be collected by Region II RST 2.

Field rinsate blanks will be collected in accordance with the procedure listed below:

1. Decontaminate sampling equipment using the procedure specified in Subsection 5.5.2 of this plan.
2. Pour DI water over the sampling device and collect the rinsate in the appropriate sample containers.

One temperature blank sample will be included in each shipped cooler to verify that the samples were maintained at $4 \pm 2^{\circ}\text{C}$ from the time they were placed in the cooler to their arrival at the laboratory. The temperature blank will be prepared by filling a sample container with unpreserved potable or distilled water. The container will be labeled "Temperature Blank" and dated. The receiving laboratory will establish and record the temperature of the blank on the chain-of-custody form immediately upon receipt, prior to inventory and refrigeration.

11. SYSTEM AUDITS

In addition to the following, the system audit procedure will be conducted in accordance with Section C1 of the Region II RST 2 QAPP.

The Field QA/QC Officer will observe sampling operations and review subsequent analytical

results to ensure compliance with the QA/QC requirements of the project/sampling event.

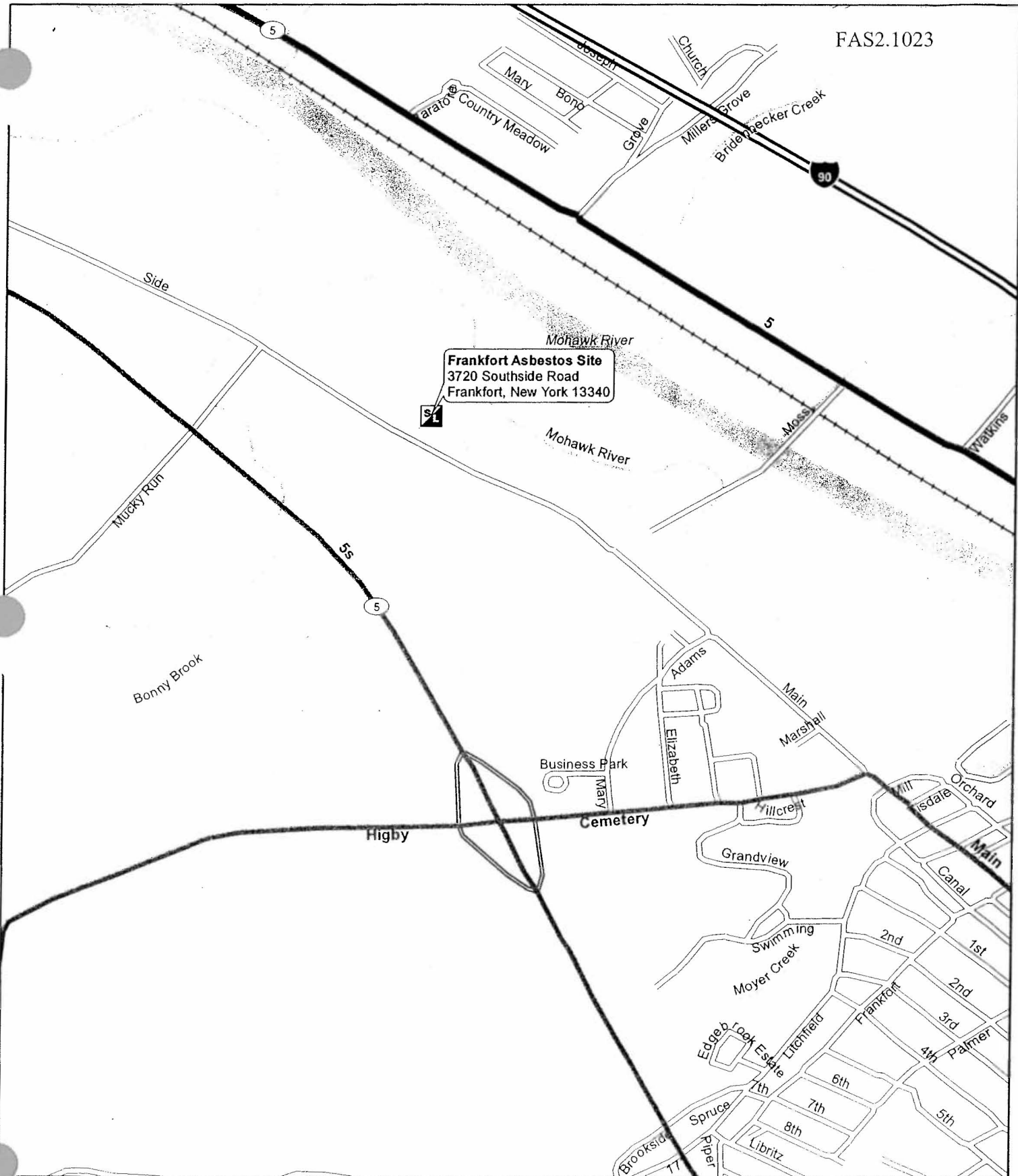
12. CORRECTIVE ACTION

In addition to the following, the corrective action procedure will be conducted in accordance with Section C1 of the Region II RST 2 QAPP.

All provisions will be taken in the field and laboratory to ensure that any problems that may develop will be dealt with as quickly as possible to ensure the continuity of the project/sampling events. Any deviations from this sampling plan will be noted in the Sampling Trip Report.

ATTACHMENT A

SITE LOCATION MAP



Frankfort Asbestos Site
 3720 Southside Road
 Frankfort, New York 13340

Legend

 Site Location



0 0.2 0.4 0.8 Miles

WESTON ADAMSON **Weston Solutions, Inc.**
 Federal Programs Division

In Association With
 Innovative Technical Solutions, Inc.,
 Scientific and Environmental Associates, Inc.,
 and Justice Environmental, LLC

**Figure 1:
 Site Location Map**

FRANKFORT ASBESTOS SITE
 FRANKFORT, NEW YORK

U.S. ENVIRONMENTAL PROTECTION AGENCY
 REMOVAL SUPPORT TEAM 2
 CONTRACT # EP-W-06-072

GIS ANALYST	F. CAMPBELL
EPA OSC.	J. HARMON
RST SPM	S. KIBAL

DATE MODIFIED: 07/10/07

ATTACHMENT B

EPA/ERT SAMPLING AND DECONTAMINATION SOPs

EPA/ERT SOP#: 2001
GENERAL FIELD SAMPLING GUIDELINES



GENERAL FIELD SAMPLING GUIDELINES

SOP#: 2001
DATE: 08/11/94
REV. #: 0.0

1.0 SCOPE AND APPLICATION

The purpose of this Standard Operating Procedure (SOP) is to provide general field sampling guidelines that will assist REAC personnel in choosing sampling strategies, location, and frequency for proper assessment of site characteristics. This SOP is applicable to all field activities that involve sampling.

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent on site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. EPA endorsement or recommendation for use.

2.0 METHOD SUMMARY

Sampling is the selection of a representative portion of a larger population, universe, or body. Through examination of a sample, the characteristics of the larger body from which the sample was drawn can be inferred. In this manner, sampling can be a valuable tool for determining the presence, type, and extent of contamination by hazardous substances in the environment.

The primary objective of all sampling activities is to characterize a hazardous waste site accurately so that its impact on human health and the environment can be properly evaluated. It is only through sampling and analysis that site hazards can be measured and the job of cleanup and restoration can be accomplished effectively with minimal risk. The sampling itself must be conducted so that every sample collected retains its original physical form and chemical composition. In this way, sample integrity is insured, quality assurance standards are maintained, and the sample can accurately represent the larger body of

material under investigation.

The extent to which valid inferences can be drawn from a sample depends on the degree to which the sampling effort conforms to the project's objectives. For example, as few as one sample may produce adequate, technically valid data to address the project's objectives. Meeting the project's objectives requires thorough planning of sampling activities, and implementation of the most appropriate sampling and analytical procedures. These issues will be discussed in this procedure.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

The amount of sample to be collected, and the proper sample container type (i.e., glass, plastic), chemical preservation, and storage requirements are dependent on the matrix being sampled and the parameter(s) of interest. Sample preservation, containers, handling, and storage for air and waste samples are discussed in the specific SOPs for air and waste sampling techniques.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

The nature of the object or materials being sampled may be a potential problem to the sampler. If a material is homogeneous, it will generally have a uniform composition throughout. In this case, any sample increment can be considered representative of the material. On the other hand, heterogeneous samples present problems to the sampler because of changes in the material over distance, both laterally and vertically.

Samples of hazardous materials may pose a safety threat to both field and laboratory personnel. Proper health and safety precautions should be implemented when handling this type of sample.

Environmental conditions, weather conditions, or non-target chemicals may cause problems and/or interferences when performing sampling activities or when sampling for a specific parameter. Refer to the specific SOPs for sampling techniques.

5.0 EQUIPMENT/APPARATUS

The equipment/apparatus required to collect samples must be determined on a site specific basis. Due to the wide variety of sampling equipment available, refer to the specific SOPs for sampling techniques which include lists of the equipment/apparatus required for sampling.

6.0 REAGENTS

Reagents may be utilized for preservation of samples and for decontamination of sampling equipment. The preservatives required are specified by the analysis to be performed. Decontamination solutions are specified in ERT SOP #2006, Sampling Equipment Decontamination.

7.0 PROCEDURE

7.1 Types of Samples

In relation to the media to be sampled, two basic types of samples can be considered: the environmental sample and the hazardous sample.

Environmental samples are those collected from streams, ponds, lakes, wells, and are off-site samples that are not expected to be contaminated with hazardous materials. They usually do not require the special handling procedures typically used for concentrated wastes. However, in certain instances, environmental samples can contain elevated concentrations of pollutants and in such cases would have to be handled as hazardous samples.

Hazardous or concentrated samples are those collected from drums, tanks, lagoons, pits, waste piles, fresh spills, or areas previously identified as contaminated, and require special handling procedures because of their potential toxicity or hazard. These samples can be further subdivided based on their degree of hazard; however, care should be taken when handling and shipping any wastes believed to be concentrated regardless of the degree.

The importance of making the distinction between environmental and hazardous samples is two-fold:

- (1) Personnel safety requirements: Any sample thought to contain enough hazardous materials to pose a safety threat should be designated as hazardous and handled in a manner which ensures the safety of both field and laboratory personnel.
- (2) Transportation requirements: Hazardous samples must be packaged, labeled, and shipped according to the International Air Transport Association (IATA) Dangerous Goods Regulations or Department of Transportation (DOT) regulations and U.S. EPA guidelines.

7.2 Sample Collection Techniques

In general, two basic types of sample collection techniques are recognized, both of which can be used for either environmental or hazardous samples.

Grab Samples

A grab sample is defined as a discrete aliquot representative of a specific location at a given point in time. The sample is collected all at once at one particular point in the sample medium. The representativeness of such samples is defined by the nature of the materials being sampled. In general, as sources vary over time and distance, the representativeness of grab samples will decrease.

Composite Samples

Composites are nondiscrete samples composed of more than one specific aliquot collected at various sampling locations and/or different points in time. Analysis of this type of sample produces an average value and can in certain instances be used as an alternative to analyzing a number of individual grab samples and calculating an average value. It should be noted, however, that compositing can mask problems by diluting isolated concentrations of some hazardous compounds below detection limits.

Compositing is often used for environmental samples and may be used for hazardous samples under certain conditions. For example, compositing of hazardous waste is often performed after compatibility tests have

been completed to determine an average value over a number of different locations (group of drums). This procedure generates data that can be useful by providing an average concentration within a number of units, can serve to keep analytical costs down, and can provide information useful to transporters and waste disposal operations.

For sampling situations involving hazardous wastes, grab sampling techniques are generally preferred because grab sampling minimizes the amount of time sampling personnel must be in contact with the wastes, reduces risks associated with compositing unknowns, and eliminates chemical changes that might occur due to compositing.

7.3 Types of Sampling Strategies

The number of samples that should be collected and analyzed depends on the objective of the investigation. There are three basic sampling strategies: random, systematic, and judgmental sampling.

Random sampling involves collection of samples in a nonsystematic fashion from the entire site or a specific portion of a site. Systematic sampling involves collection of samples based on a grid or a pattern which has been previously established. When judgmental sampling is performed, samples are collected only from the portion(s) of the site most likely to be contaminated. Often, a combination of these strategies is the best approach depending on the type of the suspected/known contamination, the uniformity and size of the site, the level/type of information desired, etc.

7.4 QA Work Plans (QAWP)

A QAWP is required when it becomes evident that a field investigation is necessary. It should be initiated in conjunction with, or immediately following, notification of the field investigation. This plan should be clear and concise and should detail the following basic components, with regard to sampling activities:

- C Objective and purpose of the investigation.
- C Basis upon which data will be evaluated.
- C Information known about the site including location, type and size of the facility, and length of operations/abandonment.
- C Type and volume of contaminated material, contaminants of concern (including

concentration), and basis of the information/data.

- C Technical approach including media/matrix to be sampled, sampling equipment to be used, sample equipment decontamination (if necessary), sampling design and rationale, and SOPs or description of the procedure to be implemented.
- C Project management and reporting, schedule, project organization and responsibilities, manpower and cost projections, and required deliverables.
- C QA objectives and protocols including tables summarizing field sampling and QA/QC analysis and objectives.

Note that this list of QAWP components is not all-inclusive and that additional elements may be added or altered depending on the specific requirements of the field investigation. It should also be recognized that although a detailed QAWP is quite important, it may be impractical in some instances. Emergency responses and accidental spills are prime examples of such instances where time might prohibit the development of site-specific QAWPs prior to field activities. In such cases, investigators would have to rely on general guidelines and personal judgment, and the sampling or response plans might simply be a strategy based on preliminary information and finalized on site. In any event, a plan of action should be developed, no matter how concise or informal, to aid investigators in maintaining a logical and consistent order to the implementation of their task.

7.5 Legal Implications

The data derived from sampling activities are often introduced as critical evidence during litigation of a hazardous waste site cleanup. Legal issues in which sampling data are important may include cleanup cost recovery, identification of pollution sources and responsible parties, and technical validation of remedial design methodologies. Because of the potential for involvement in legal actions, strict adherence to technical and administrative SOPs is essential during both the development and implementation of sampling activities.

Technically valid sampling begins with thorough planning and continues through the sample collection and analytical procedures. Administrative requirements involve thorough, accurate

documentation of all sampling activities. Documentation requirements include maintenance of a chain of custody, as well as accurate records of field activities and analytical instructions. Failure to observe these procedures fully and consistently may result in data that are questionable, invalid and non-defensible in court, and the consequent loss of enforcement proceedings.

8.0 CALCULATIONS

Refer to the specific SOPs for any calculations which are associated with sampling techniques.

9.0 QUALITY ASSURANCE/ QUALITY CONTROL

Refer to the specific SOPs for the type and frequency of QA/QC samples to be analyzed, the acceptance criteria for the QA/QC samples, and any other QA/QC activities which are associated with sampling techniques.

10.0 DATA VALIDATION

Refer to the specific SOPs for data validation activities that are associated with sampling techniques.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA, and corporate health and safety procedures.

EPA/ERT SOP#: 2006
SAMPLING EQUIPMENT DECONTAMINATION



SAMPLING EQUIPMENT DECONTAMINATION

SOP#: 2006
DATE: 08/11/94
REV. #: 0.0

1.0 SCOPE AND APPLICATION

The purpose of this Standard Operating Procedure (SOP) is to provide a description of the methods used for preventing, minimizing, or limiting cross-contamination of samples due to inappropriate or inadequate equipment decontamination and to provide general guidelines for developing decontamination procedures for sampling equipment to be used during hazardous waste operations as per 29 Code of Federal Regulations (CFR) 1910.120. This SOP does not address personnel decontamination.

These are standard (i.e. typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitation, or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. Environmental Protection Agency (U.S. EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

Removing or neutralizing contaminants from equipment minimizes the likelihood of sample cross contamination, reduces or eliminates transfer of contaminants to clean areas, and prevents the mixing of incompatible substances.

Gross contamination can be removed by physical decontamination procedures. These abrasive and non-abrasive methods include the use of brushes, air and wet blasting, and high and low pressure water cleaning.

The first step, a soap and water wash, removes all visible particulate matter and residual oils and grease. This may be preceded by a steam or high pressure

water wash to facilitate residuals removal. The second step involves a tap water rinse and a distilled/deionized water rinse to remove the detergent. An acid rinse provides a low pH media for trace metals removal and is included in the decontamination process if metal samples are to be collected. It is followed by another distilled/deionized water rinse. If sample analysis does not include metals, the acid rinse step can be omitted. Next, a high purity solvent rinse is performed for trace organics removal if organics are a concern at the site. Typical solvents used for removal of organic contaminants include acetone, hexane, or water. Acetone is typically chosen because it is an excellent solvent, miscible in water, and not a target analyte on the Priority Pollutant List. If acetone is known to be a contaminant of concern at a given site or if Target Compound List analysis (which includes acetone) is to be performed, another solvent may be substituted. The solvent must be allowed to evaporate completely and then a final distilled/deionized water rinse is performed. This rinse removes any residual traces of the solvent.

The decontamination procedure described above may be summarized as follows:

1. Physical removal
2. Non-phosphate detergent wash
3. Tap water rinse
4. Distilled/deionized water rinse
5. 10% nitric acid rinse
6. Distilled/deionized water rinse
7. Solvent rinse (pesticide grade)
8. Air dry
9. Distilled/deionized water rinse

If a particular contaminant fraction is not present at the site, the nine (9) step decontamination procedure specified above may be modified for site specificity. For example, the nitric acid rinse may be eliminated if metals are not of concern at a site. Similarly, the solvent rinse may be eliminated if organics are not of

concern at a site. Modifications to the standard procedure should be documented in the site specific work plan or subsequent report.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

The amount of sample to be collected and the proper sample container type (i.e., glass, plastic), chemical preservation, and storage requirements are dependent on the matrix being sampled and the parameter(s) of interest.

More specifically, sample collection and analysis of decontamination waste may be required before beginning proper disposal of decontamination liquids and solids generated at a site. This should be determined prior to initiation of site activities.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

C The use of distilled/deionized water commonly available from commercial vendors may be acceptable for decontamination of sampling equipment provided that it has been verified by laboratory analysis to be analyte free (specifically for the contaminants of concern).

C The use of an untreated potable water supply is not an acceptable substitute for tap water. Tap water may be used from any municipal or industrial water treatment system.

C If acids or solvents are utilized in decontamination they raise health and safety, and waste disposal concerns.

C Damage can be incurred by acid and solvent washing of complex and sophisticated sampling equipment.

5.0 EQUIPMENT/APPARATUS

Decontamination equipment, materials, and supplies are generally selected based on availability. Other considerations include the ease of decontaminating or disposing of the equipment. Most equipment and supplies can be easily procured. For example, soft-

bristle scrub brushes or long-handled bottle brushes can be used to remove contaminants. Large galvanized wash tubs, stock tanks, or buckets can hold wash and rinse solutions. Children's wading pools can also be used. Large plastic garbage cans or other similar containers lined with plastic bags can help segregate contaminated equipment. Contaminated liquid can be stored temporarily in metal or plastic cans or drums.

The following standard materials and equipment are recommended for decontamination activities:

5.1 Decontamination Solutions

- C Non-phosphate detergent
- C Selected solvents (acetone, hexane, nitric acid, etc.)
- C Tap water
- C Distilled or deionized water

5.2 Decontamination Tools/Supplies

- C Long and short handled brushes
- C Bottle brushes
- C Drop cloth/plastic sheeting
- C Paper towels
- C Plastic or galvanized tubs or buckets
- C Pressurized sprayers (H₂O)
- C Solvent sprayers
- C Aluminum foil

5.3 Health and Safety Equipment

Appropriate personal protective equipment (i.e., safety glasses or splash shield, appropriate gloves, aprons or coveralls, respirator, emergency eye wash)

5.4 Waste Disposal

- C Trash bags
- C Trash containers
- C 55-gallon drums
- C Metal/plastic buckets/containers for storage and disposal of decontamination solutions

6.0 REAGENTS

There are no reagents used in this procedure aside from the actual decontamination solutions. Table I (Appendix A) lists solvent rinses which may be required for elimination of particular chemicals. In

general, the following solvents are typically utilized for decontamination purposes:

- C 10% nitric acid is typically used for inorganic compounds such as metals. An acid rinse may not be required if inorganics are not a contaminant of concern.
- C Acetone (pesticide grade)⁽¹⁾
- C Hexane (pesticide grade)⁽¹⁾
- C Methanol⁽¹⁾

⁽¹⁾ - Only if sample is to be analyzed for organics.

7.0 PROCEDURES

As part of the health and safety plan, a decontamination plan should be developed and reviewed. The decontamination line should be set up before any personnel or equipment enter the areas of potential exposure. The equipment decontamination plan should include:

- C The number, location, and layout of decontamination stations.
- C Decontamination equipment needed.
- C Appropriate decontamination methods.
- C Methods for disposal of contaminated clothing, equipment, and solutions.
- C Procedures can be established to minimize the potential for contamination. This may include: (1) work practices that minimize contact with potential contaminants; (2) using remote sampling techniques; (3) covering monitoring and sampling equipment with plastic, aluminum foil, or other protective material; (4) watering down dusty areas; (5) avoiding laying down equipment in areas of obvious contamination; and (6) use of disposable sampling equipment.

7.1 Decontamination Methods

All samples and equipment leaving the contaminated area of a site must be decontaminated to remove any contamination that may have adhered to equipment. Various decontamination methods will remove contaminants by: (1) flushing or other physical action, or (2) chemical complexing to inactivate

contaminants by neutralization, chemical reaction, disinfection, or sterilization.

Physical decontamination techniques can be grouped into two categories: abrasive methods and non-abrasive methods, as follows:

7.1.1 Abrasive Cleaning Methods

Abrasive cleaning methods work by rubbing and wearing away the top layer of the surface containing the contaminant. The mechanical abrasive cleaning methods are most commonly used at hazardous waste sites. The following abrasive methods are available:

Mechanical

Mechanical methods of decontamination include using metal or nylon brushes. The amount and type of contaminants removed will vary with the hardness of bristles, length of time brushed, degree of brush contact, degree of contamination, nature of the surface being cleaned, and degree of contaminant adherence to the surface.

Air Blasting

Air blasting equipment uses compressed air to force abrasive material through a nozzle at high velocities. The distance between nozzle and surface cleaned, air pressure, time of application, and angle at which the abrasive strikes the surface will dictate cleaning efficiency. Disadvantages of this method are the inability to control the amount of material removed and the large amount of waste generated.

Wet Blasting

Wet blast cleaning involves use of a suspended fine abrasive. The abrasive/water mixture is delivered by compressed air to the contaminated area. By using a very fine abrasive, the amount of materials removed can be carefully controlled.

7.1.2 Non-Abrasive Cleaning Methods

Non-abrasive cleaning methods work by forcing the contaminant off a surface with pressure. In general, the equipment surface is not removed using non-abrasive methods.

Low-Pressure Water

This method consists of a container which is filled with water. The user pumps air out of the container to create a vacuum. A slender nozzle and hose allow the user to spray in hard-to-reach places.

High-Pressure Water

This method consists of a high-pressure pump, an operator controlled directional nozzle, and a high-pressure hose. Operating pressure usually ranges from 340 to 680 atmospheres (atm) and flow rates usually range from 20 to 140 liters per minute.

Ultra-High-Pressure Water

This system produces a water jet that is pressured from 1,000 to 4,000 atmospheres. This ultra-high-pressure spray can remove tightly-adhered surface films. The water velocity ranges from 500 meters/second (m/s) (1,000 atm) to 900 m/s (4,000 atm). Additives can be used to enhance the cleaning action.

Rinsing

Contaminants are removed by rinsing through dilution, physical attraction, and solubilization.

Damp Cloth Removal

In some instances, due to sensitive, non-waterproof equipment or due to the unlikelihood of equipment being contaminated, it is not necessary to conduct an extensive decontamination procedure. For example, air sampling pumps hooked on a fence, placed on a drum, or wrapped in plastic bags are not likely to become heavily contaminated. A damp cloth should be used to wipe off contaminants which may have adhered to equipment through airborne contaminants or from surfaces upon which the equipment was set.

Disinfection/Sterilization

Disinfectants are a practical means of inactivating infectious agents. Unfortunately, standard sterilization methods are impractical for large equipment. This method of decontamination is typically performed off-site.

7.2 Field Sampling Equipment Decontamination Procedures

The decontamination line is setup so that the first station is used to clean the most contaminated item. It progresses to the last station where the least contaminated item is cleaned. The spread of contaminants is further reduced by separating each decontamination station by a minimum of three (3) feet. Ideally, the contamination should decrease as the equipment progresses from one station to another farther along in the line.

A site is typically divided up into the following boundaries: Hot Zone or Exclusion Zone (EZ), the Contamination Reduction Zone (CRZ), and the Support or Safe Zone (SZ). The decontamination line should be setup in the Contamination Reduction Corridor (CRC) which is in the CRZ. Figure 1 (Appendix B) shows a typical contaminant reduction zone layout. The CRC controls access into and out of the exclusion zone and confines decontamination activities to a limited area. The CRC boundaries should be conspicuously marked. The far end is the hotline, the boundary between the exclusion zone and the contamination reduction zone. The size of the decontamination corridor depends on the number of stations in the decontamination process, overall dimensions of the work zones, and amount of space available at the site. Whenever possible, it should be a straight line.

Anyone in the CRC should be wearing the level of protection designated for the decontamination crew. Another corridor may be required for the entry and exit of heavy equipment. Sampling and monitoring equipment and sampling supplies are all maintained outside of the CRC. Personnel don their equipment away from the CRC and enter the exclusion zone through a separate access control point at the hotline. One person (or more) dedicated to decontaminating equipment is recommended.

7.2.1 Decontamination Setup

Starting with the most contaminated station, the decontamination setup should be as follows:

Station 1: Segregate Equipment Drop

Place plastic sheeting on the ground (Figure 2, Appendix B). Size will depend on amount of

equipment to be decontaminated. Provide containers lined with plastic if equipment is to be segregated. Segregation may be required if sensitive equipment or mildly contaminated equipment is used at the same time as equipment which is likely to be heavily contaminated.

Station 2: Physical Removal With A High-Pressure Washer (Optional)

As indicated in 7.1.2, a high-pressure wash may be required for compounds which are difficult to remove by washing with brushes. The elevated temperature of the water from the high-pressure washers is excellent at removing greasy/oily compounds. High pressure washers require water and electricity.

A decontamination pad may be required for the high-pressure wash area. An example of a wash pad may consist of an approximately 1 1/2 foot-deep basin lined with plastic sheeting and sloped to a sump at one corner. A layer of sand can be placed over the plastic and the basin is filled with gravel or shell. The sump is also lined with visqueen and a barrel is placed in the hole to prevent collapse. A sump pump is used to remove the water from the sump for transfer into a drum.

Typically heavy machinery is decontaminated at the end of the day unless site sampling requires that the machinery be decontaminated frequently. A separate decontamination pad may be required for heavy equipment.

Station 3: Physical Removal With Brushes And A Wash Basin

Prior to setting up Station 3, place plastic sheeting on the ground to cover areas under Station 3 through Station 10.

Fill a wash basin, a large bucket, or child's swimming pool with non-phosphate detergent and tap water. Several bottle and bristle brushes to physically remove contamination should be dedicated to this station. Approximately 10 - 50 gallons of water may be required initially depending upon the amount of equipment to decontaminate and the amount of gross contamination.

Station 4: Water Basin

Fill a wash basin, a large bucket, or child's swimming

pool with tap water. Several bottle and bristle brushes should be dedicated to this station. Approximately 10-50 gallons of water may be required initially depending upon the amount of equipment to decontaminate and the amount of gross contamination.

Station 5: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to contain the water during the rinsing process. Approximately 10-20 gallons of water may be required initially depending upon the amount of equipment to decontaminate and the amount of gross contamination.

Station 6: Nitric Acid Sprayers

Fill a spray bottle with 10% nitric acid. An acid rinse may not be required if inorganics are not a contaminant of concern. The amount of acid will depend on the amount of equipment to be decontaminated. Provide a 5-gallon bucket or basin to collect acid during the rinsing process.

Station 7: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to collect water during the rinsate process.

Station 8: Organic Solvent Sprayers

Fill a spray bottle with an organic solvent. After each solvent rinse, the equipment should be rinsed with distilled/deionized water and air dried. Amount of solvent will depend on the amount of equipment to decontaminate. Provide a 5-gallon bucket or basin to collect the solvent during the rinsing process.

Solvent rinses may not be required unless organics are a contaminant of concern, and may be eliminated from the station sequence.

Station 9: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to collect water during the rinsate process.

Station 10: Clean Equipment Drop

Lay a clean piece of plastic sheeting over the bottom

plastic layer. This will allow easy removal of the plastic in the event that it becomes dirty. Provide aluminum foil, plastic, or other protective material to wrap clean equipment.

7.2.2 Decontamination Procedures

Station 1: Segregate Equipment Drop

Deposit equipment used on-site (i.e., tools, sampling devices and containers, monitoring instruments radios, clipboards, etc.) on the plastic drop cloth/sheet or in different containers with plastic liners. Each will be contaminated to a different degree. Segregation at the drop reduces the probability of cross contamination. Loose leaf sampling data sheets or maps can be placed in plastic zip lock bags if contamination is evident.

Station 2: Physical Removal With A High-Pressure Washer (Optional)

Use high pressure wash on grossly contaminated equipment. Do not use high- pressure wash on sensitive or non-waterproof equipment.

Station 3: Physical Removal With Brushes And A Wash Basin

Scrub equipment with soap and water using bottle and bristle brushes. Only sensitive equipment (i.e., radios, air monitoring and sampling equipment) which is waterproof should be washed. Equipment which is not waterproof should have plastic bags removed and wiped down with a damp cloth. Acids and organic rinses may also ruin sensitive equipment. Consult the manufacturers for recommended decontamination solutions.

Station 4: Equipment Rinse

Wash soap off of equipment with water by immersing the equipment in the water while brushing. Repeat as many times as necessary.

Station 5: Low-Pressure Rinse

Rinse sampling equipment with distilled/deionized water with a low-pressure sprayer.

Station 6: Nitric Acid Sprayers (required only if metals are a contaminant of concern)

Using a spray bottle rinse sampling equipment with nitric acid. Begin spraying (inside and outside) at one end of the equipment allowing the acid to drip to the other end into a 5-gallon bucket. A rinsate blank may be required at this station. Refer to Section 9.

Station 7: Low-Pressure Sprayers

Rinse sampling equipment with distilled/deionized water with a low-pressure sprayer.

Station 8: Organic Solvent Sprayers

Rinse sampling equipment with a solvent. Begin spraying (inside and outside) at one end of the equipment allowing the solvent to drip to the other end into a 5-gallon bucket. Allow the solvent to evaporate from the equipment before going to the next station. A QC rinsate sample may be required at this station.

Station 9: Low-Pressure Sprayers

Rinse sampling equipment with distilled/deionized water with a low-pressure washer.

Station 10: Clean Equipment Drop

Lay clean equipment on plastic sheeting. Once air dried, wrap sampling equipment with aluminum foil, plastic, or other protective material.

7.2.3 Post Decontamination Procedures

1. Collect high-pressure pad and heavy equipment decontamination area liquid and waste and store in appropriate drum or container. A sump pump can aid in the collection process. Refer to the Department of Transportation (DOT) requirements for appropriate containers based on the contaminant of concern.
2. Collect high-pressure pad and heavy equipment decontamination area solid waste and store in appropriate drum or container. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.
3. Empty soap and water liquid wastes from basins and buckets and store in appropriate

drum or container. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.

4. Empty acid rinse waste and place in appropriate container or neutralize with a base and place in appropriate drum. pH paper or an equivalent pH test is required for neutralization. Consult DOT requirements for appropriate drum for acid rinse waste.
5. Empty solvent rinse sprayer and solvent waste into an appropriate container. Consult DOT requirements for appropriate drum for solvent rinse waste.
6. Using low-pressure sprayers, rinse basins, and brushes. Place liquid generated from this process into the wash water rinse container.
7. Empty low-pressure sprayer water onto the ground.
8. Place all solid waste materials generated from the decontamination area (i.e., gloves and plastic sheeting, etc.) in an approved DOT drum. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.
9. Write appropriate labels for waste and make arrangements for disposal. Consult DOT regulations for the appropriate label for each drum generated from the decontamination process.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/ QUALITY CONTROL

A rinsate blank is one specific type of quality control sample associated with the field decontamination process. This sample will provide information on the effectiveness of the decontamination process employed in the field.

Rinsate blanks are samples obtained by running analyte free water over decontaminated sampling

equipment to test for residual contamination. The blank water is collected in sample containers for handling, shipment, and analysis. These samples are treated identical to samples collected that day. A rinsate blank is used to assess cross contamination brought about by improper decontamination procedures. Where dedicated sampling equipment is not utilized, collect one rinsate blank per day per type of sampling device samples to meet QA2 and QA3 objectives.

If sampling equipment requires the use of plastic tubing it should be disposed of as contaminated and replaced with clean tubing before additional sampling occurs.

10.0 DATA VALIDATION

Results of quality control samples will be evaluated for contamination. This information will be utilized to qualify the environmental sample results in accordance with the project's data quality objectives.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow OSHA, U.S. EPA, corporate, and other applicable health and safety procedures.

Decontamination can pose hazards under certain circumstances. Hazardous substances may be incompatible with decontamination materials. For example, the decontamination solution may react with contaminants to produce heat, explosion, or toxic products. Also, vapors from decontamination solutions may pose a direct health hazard to workers by inhalation, contact, fire, or explosion.

The decontamination solutions must be determined to be acceptable before use. Decontamination materials may degrade protective clothing or equipment; some solvents can permeate protective clothing. If decontamination materials do pose a health hazard, measures should be taken to protect personnel or substitutions should be made to eliminate the hazard. The choice of respiratory protection based on contaminants of concern from the site may not be appropriate for solvents used in the decontamination process.

Safety considerations should be addressed when using abrasive and non-abrasive decontamination

equipment. Maximum air pressure produced by abrasive equipment could cause physical injury. Displaced material requires control mechanisms.

Material generated from decontamination activities requires proper handling, storage, and disposal. Personal Protective Equipment may be required for these activities.

Material safety data sheets are required for all decontamination solvents or solutions as required by the Hazard Communication Standard (i.e., acetone, alcohol, and trisodiumphosphate).

In some jurisdictions, phosphate containing detergents (i.e., TSP) are banned.

12.0 REFERENCES

Field Sampling Procedures Manual, New Jersey Department of Environmental Protection, February, 1988.

A Compendium of Superfund Field Operations Methods, EPA 540/p-87/001.

Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, USEPA Region IV, April 1, 1986.

Guidelines for the Selection of Chemical Protective Clothing, Volume 1, Third Edition, American Conference of Governmental Industrial Hygienists, Inc., February, 1987.

Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH/OSHA/USCG/EPA, October, 1985.

APPENDIX A

Table

Table 1. Soluble Contaminants and Recommended Solvent Rinse

TABLE 1 Soluble Contaminants and Recommended Solvent Rinse		
SOLVENT ⁽¹⁾	EXAMPLES OF SOLVENTS	SOLUBLE CONTAMINANTS
Water	Deionized water Tap water	Low-chain hydrocarbons Inorganic compounds Salts Some organic acids and other polar compounds
Dilute Acids	Nitric acid Acetic acid Boric acid	Basic (caustic) compounds (e.g., amines and hydrazines)
Dilute Bases	Sodium bicarbonate (e.g., soap detergent)	Acidic compounds Phenol Thiols Some nitro and sulfonic compounds
Organic Solvents ⁽²⁾	Alcohols Ethers Ketones Aromatics Straight chain alkalines (e.g., hexane) Common petroleum products (e.g., fuel, oil, kerosene)	Nonpolar compounds (e.g., some organic compounds)
Organic Solvent ⁽²⁾	Hexane	PCBs

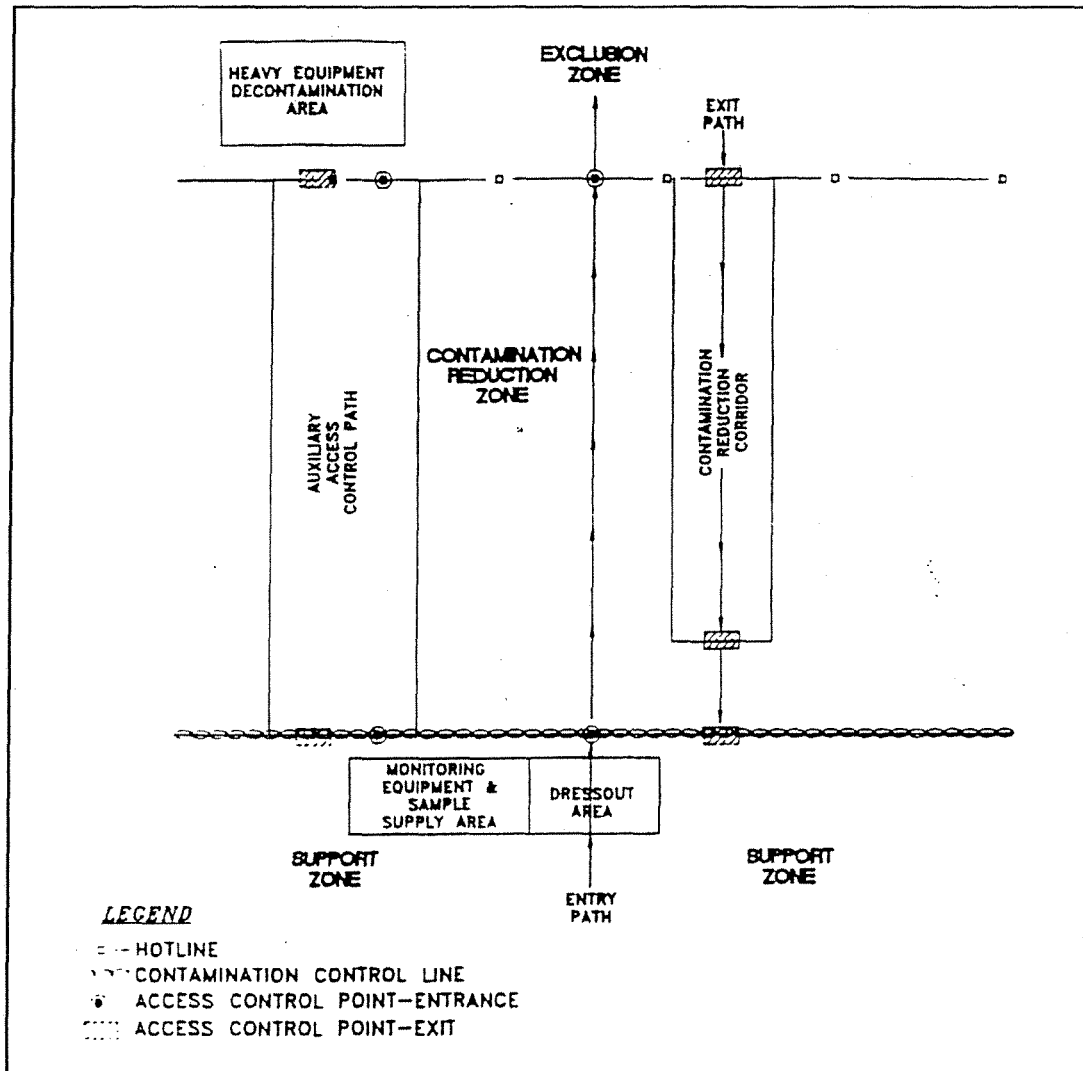
⁽¹⁾ - Material safety data sheets are required for all decontamination solvents or solutions as required by the Hazard Communication Standard

⁽²⁾ - WARNING: Some organic solvents can permeate and/or degrade the protective clothing

APPENDIX B

Figures

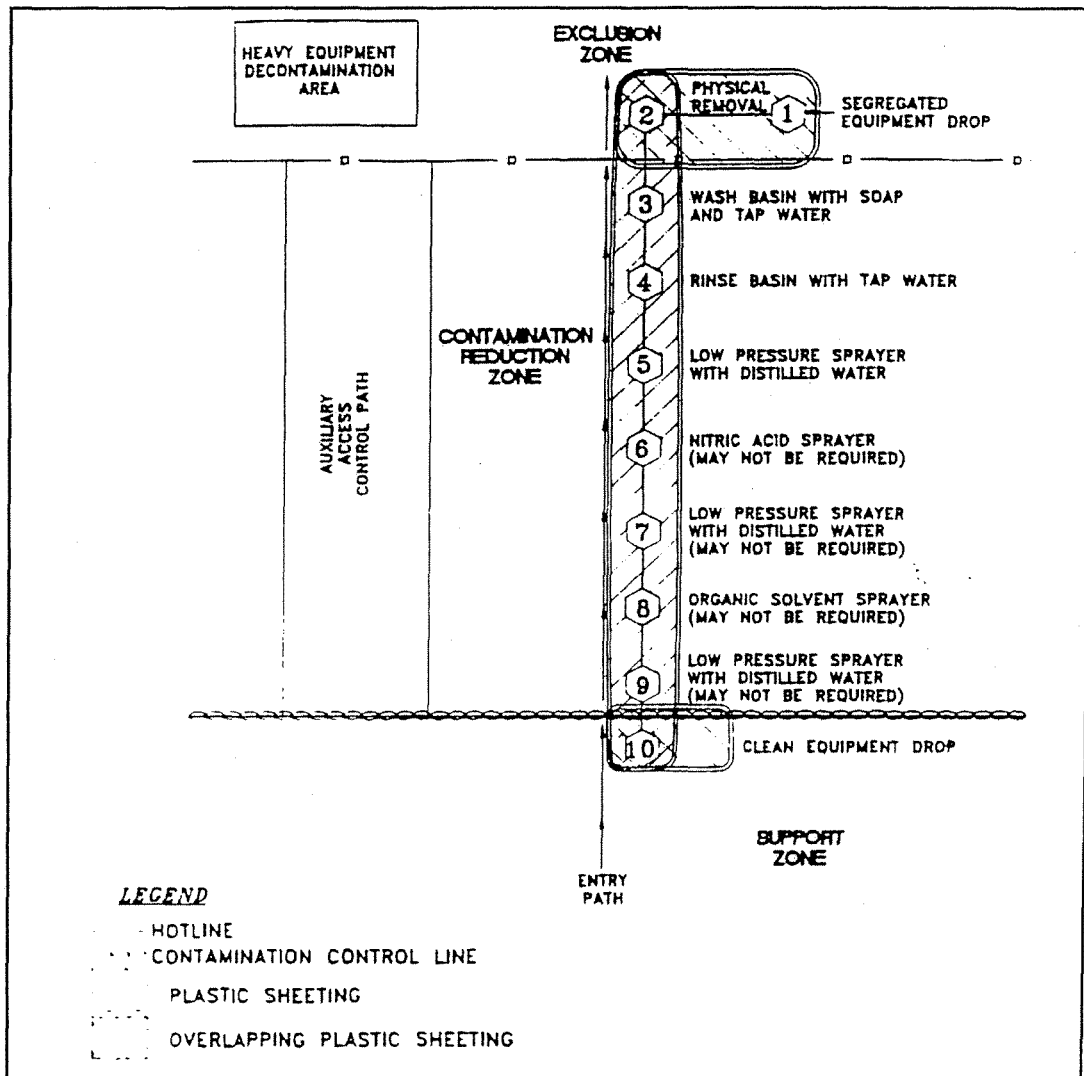
Figure 1. Contamination Reduction Zone Layout



APPENDIX B (Cont'd.)

Figures

Figure 2. Decontamination Layout



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1.0 SCOPE AND APPLICATION

The purpose of this standard operating procedure (SOP) is to describe the procedures for the collection of representative soil samples. Sampling depths are assumed to be those that can be reached without the use of a drill rig, direct-push, or other mechanized equipment (except for a back-hoe). Analysis of soil samples may determine whether concentrations of specific pollutants exceed established action levels, or if the concentrations of pollutants present a risk to public health, welfare, or the environment.

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the actual procedures used should be documented and described in an appropriate site report.

Mention of trade names or commercial products does not constitute U.S. Environmental Protection Agency (EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

Soil samples may be collected using a variety of methods and equipment depending on the depth of the desired sample, the type of sample required (disturbed vs. undisturbed), and the soil type. Near-surface soils may be easily sampled using a spade, trowel, and scoop. Sampling at greater depths may be performed using a hand auger, continuous flight auger, a trier, a split-spoon, or, if required, a backhoe.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

Chemical preservation of solids is not generally recommended. Samples should, however, be cooled and protected from sunlight to minimize any potential reaction. The amount of sample to be collected and proper sample container type are discussed in ERT/REAC SOP #2003 Rev. 0.0 08/11/94, *Sample Storage, Preservation and Handling*.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

There are two primary potential problems associated with soil sampling - cross contamination of samples and improper sample collection. Cross contamination problems can be eliminated or minimized through the use of dedicated sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, disturbance of the matrix resulting in compaction of the sample, or inadequate homogenization of the samples where required, resulting in variable, non-representative results.

5.0 EQUIPMENT



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Soil sampling equipment includes the following:

- Maps/plot plan
- Safety equipment, as specified in the site-specific Health and Safety Plan
- Survey equipment or global positioning system (GPS) to locate sampling points
- Tape measure
- Survey stakes or flags
- Camera and film
- Stainless steel, plastic, or other appropriate homogenization bucket, bowl or pan
- Appropriate size sample containers
- Ziplock plastic bags
- Logbook
- Labels
- Chain of Custody records and custody seals
- Field data sheets and sample labels
- Cooler(s)
- Ice
- Vermiculite
- Decontamination supplies/equipment
- Canvas or plastic sheet
- Spade or shovel
- Spatula
- Scoop
- Plastic or stainless steel spoons
- Trowel(s)
- Continuous flight (screw) auger
- Bucket auger
- Post hole auger
- Extension rods
- T-handle
- Sampling trier
- Thin wall tube sampler
- Split spoons
- Vehimeyer soil sampler outfit
 - Tubes
 - Points
 - Drive head
 - Drop hammer
 - Puller jack and grip
- Backhoe



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Reagents are not used for the preservation of soil samples. Decontamination solutions are specified in ERT/REAC SOP #2006 Rev. 0.0 08/11/94, *Sampling Equipment Decontamination*, and the site specific work plan.

7.0 PROCEDURES

7.1 Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and the types and amounts of equipment and supplies required.
2. Obtain necessary sampling and monitoring equipment.
3. Decontaminate or pre-clean equipment, and ensure that it is in working order.
4. Prepare schedules and coordinate with staff, client, and regulatory agencies, if appropriate.
5. Perform a general site survey prior to site entry in accordance with the site specific Health and Safety Plan.
6. Use stakes, flagging, or buoys to identify and mark all sampling locations. Specific site factors, including extent and nature of contaminant, should be considered when selecting sample location. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions. All staked locations should be utility-cleared by the property owner or the On-Scene-Coordinator (OSC) prior to soil sampling; and utility clearance should always be confirmed before beginning work.

7.2 Sample Collection

7.2.1 Surface Soil Samples

Collection of samples from near-surface soil can be accomplished with tools such as spades, shovels, trowels, and scoops. Surface material is removed to the required depth and a stainless steel or plastic scoop is then used to collect the sample.

This method can be used in most soil types but is limited to sampling at or near the ground surface. Accurate, representative samples can be collected with this procedure depending on the care and precision demonstrated by the sample team member. A flat, pointed mason trowel to cut a block of the desired soil is helpful when undisturbed profiles are required. Tools plated with chrome or other materials should not be used. Plating is particularly common with garden implements such as potting trowels.

The following procedure is used to collect surface soil samples:



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1. Carefully remove the top layer of soil or debris to the desired sample depth with a pre-cleaned spade.
2. Using a pre-cleaned, stainless steel scoop, plastic spoon, or trowel, remove and discard a thin layer of soil from the area which came in contact with the spade.
3. If volatile organic analysis is to be performed, transfer the sample directly into an appropriate, labeled sample container with a stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval or location into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.

7.2.2 Sampling at Depth with Augers and Thin Wall Tube Samplers

This system consists of an auger, or a thin-wall tube sampler, a series of extensions, and a "T" handle (Figure 1, Appendix A). The auger is used to bore a hole to a desired sampling depth, and is then withdrawn. The sample may be collected directly from the auger. If a core sample is to be collected, the auger tip is then replaced with a thin wall tube sampler. The system is then lowered down the borehole, and driven into the soil to the completion depth. The system is withdrawn and the core is collected from the thin wall tube sampler.

Several types of augers are available; these include: bucket type, continuous flight (screw), and post-hole augers. Bucket type augers are better for direct sample recovery because they provide a large volume of sample in a short time. When continuous flight augers are used, the sample can be collected directly from the flights. The continuous flight augers are satisfactory when a composite of the complete soil column is desired. Post-hole augers have limited utility for sample collection as they are designed to cut through fibrous, rooted, swampy soil and cannot be used below a depth of approximately three feet.

The following procedure is used for collecting soil samples with the auger:

1. Attach the auger bit to a drill rod extension, and attach the "T" handle to the drill rod.



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2. Clear the area to be sampled of any surface debris (e.g., twigs, rocks, litter). It may be advisable to remove the first three to six inches of surface soil for an area approximately six inches in radius around the drilling location.
3. Begin augering, periodically removing and depositing accumulated soils onto a plastic sheet spread near the hole. This prevents accidental brushing of loose material back down the borehole when removing the auger or adding drill rods. It also facilitates refilling the hole, and avoids possible contamination of the surrounding area.
4. After reaching the desired depth, slowly and carefully remove the auger from the hole. When sampling directly from the auger, collect the sample after the auger is removed from the hole and proceed to Step 10.
5. Remove auger tip from the extension rods and replace with a pre-cleaned thin wall tube sampler. Install the proper cutting tip.
6. Carefully lower the tube sampler down the borehole. Gradually force the tube sampler into the soil. Do not scrape the borehole sides. Avoid hammering the rods as the vibrations may cause the boring walls to collapse.
7. Remove the tube sampler, and unscrew the drill rods.
8. Remove the cutting tip and the core from the device.
9. Discard the top of the core (approximately 1 inch), as this possibly represents material collected before penetration of the layer of concern. Place the remaining core into the appropriate labeled sample container. Sample homogenization is not required.
10. If volatile organic analysis is to be performed, transfer the sample into an appropriate, labeled sample container with a stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly.

When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.



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11. If another sample is to be collected in the same hole, but at a greater depth, reattach the auger bit to the drill and assembly, and follow steps 3 through 11, making sure to decontaminate the auger and tube sampler between samples.
12. Abandon the hole according to applicable state regulations. Generally, shallow holes can simply be backfilled with the removed soil material.

7.2.3 Sampling with a Trier

The system consists of a trier, and a "T" handle. The auger is driven into the soil to be sampled and used to extract a core sample from the appropriate depth.

The following procedure is used to collect soil samples with a sampling trier:

1. Insert the trier (Figure 2, Appendix A) into the material to be sampled at a 0° to 45° angle from horizontal. This orientation minimizes the spillage of sample.
2. Rotate the trier once or twice to cut a core of material.
3. Slowly withdraw the trier, making sure that the slot is facing upward.
4. If volatile organic analyses are required, transfer the sample into an appropriate, labeled sample container with a stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.

7.2.4 Sampling at Depth with a Split Spoon (Barrel) Sampler

Split spoon sampling is generally used to collect undisturbed soil cores of 18 or 24 inches in length. A series of consecutive cores may be extracted with a split spoon sampler to give a complete soil column profile, or an auger may be used to drill down to the desired depth for sampling. The split spoon is then driven to its sampling depth through the bottom of the augured hole and the core extracted.

When split spoon sampling is performed to gain geologic information, all work should



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be performed in accordance with ASTM D1586-98, "Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils".

The following procedures are used for collecting soil samples with a split spoon:

1. Assemble the sampler by aligning both sides of barrel and then screwing the drive shoe on the bottom and the head piece on top.
2. Place the sampler in a perpendicular position on the sample material.
3. Using a well ring, drive the tube. Do not drive past the bottom of the head piece or compression of the sample will result.
4. Record in the site logbook or on field data sheets the length of the tube used to penetrate the material being sampled, and the number of blows required to obtain this depth.
5. Withdraw the sampler, and open by unscrewing the bit and head and splitting the barrel. The amount of recovery and soil type should be recorded on the boring log. If a split sample is desired, a cleaned, stainless steel knife should be used to divide the tube contents in half, longitudinally. This sampler is typically available in 2 and 3 1/2 inch diameters. A larger barrel may be necessary to obtain the required sample volume.
6. Without disturbing the core, transfer it to appropriate labeled sample container(s) and seal tightly.

7.2.5 Test Pit/Trench Excavation

A backhoe can be used to remove sections of soil, when detailed examination of soil characteristics are required. This is probably the most expensive sampling method because of the relatively high cost of backhoe operation.

The following procedures are used for collecting soil samples from test pits or trenches:

1. Prior to any excavation with a backhoe, it is important to ensure that all sampling locations are clear of overhead and buried utilities.
2. Review the site specific Health & Safety plan and ensure that all safety precautions including appropriate monitoring equipment are installed as required.



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3. Using the backhoe, excavate a trench approximately three feet wide and approximately one foot deep below the cleared sampling location. Place excavated soils on plastic sheets. Trenches greater than five feet deep must be sloped or protected by a shoring system, as required by OSHA regulations.
4. A shovel is used to remove a one to two inch layer of soil from the vertical face of the pit where sampling is to be done.
5. Samples are taken using a trowel, scoop, or coring device at the desired intervals. Be sure to scrape the vertical face at the point of sampling to remove any soil that may have fallen from above, and to expose fresh soil for sampling. In many instances, samples can be collected directly from the backhoe bucket.
6. If volatile organic analyses are required, transfer the sample into an appropriate, labeled sample container with a stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.
7. Abandon the pit or excavation according to applicable state regulations. Generally, shallow excavations can simply be backfilled with the removed soil material.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/QUALITY CONTROL

There are no specific quality assurance (QA) activities which apply to the implementation of these procedures. However, the following QA procedures apply:

1. All data must be documented on field data sheets or within site logbooks.
2. All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration



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activities must occur prior to sampling/operation, and they must be documented.

10.0 DATA VALIDATION

This section is not applicable to this SOP.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA and corporate health and safety procedures, in addition to the procedures specified in the site specific Health & Safety Plan.

12.0 REFERENCES

Mason, B.J. 1983. Preparation of Soil Sampling Protocol: Technique and Strategies. EPA-600/4-83-020.

Barth, D.S. and B.J. Mason. 1984. Soil Sampling Quality Assurance User's Guide. EPA-600/4-84-043.

U.S. Environmental Protection Agency. 1984 Characterization of Hazardous Waste Sites - A Methods Manual: Volume II. Available Sampling Methods, Second Edition. EPA-600/4-84-076.

de Vera, E.R., B.P. Simmons, R.D. Stephen, and D.L. Storm. 1980. Samplers and Sampling Procedures for Hazardous Waste Streams. EPA-600/2-80-018.

ASTM D 1586-98, ASTM Committee on Standards, Philadelphia, PA.



U. S. EPA ENVIRONMENTAL RESPONSE TEAM

STANDARD OPERATING PROCEDURES

SOP: 2012
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REV: 0.0
DATE: 02/18/00

SOIL SAMPLING

APPENDIX A
Figures
SOP #2012
February 2000



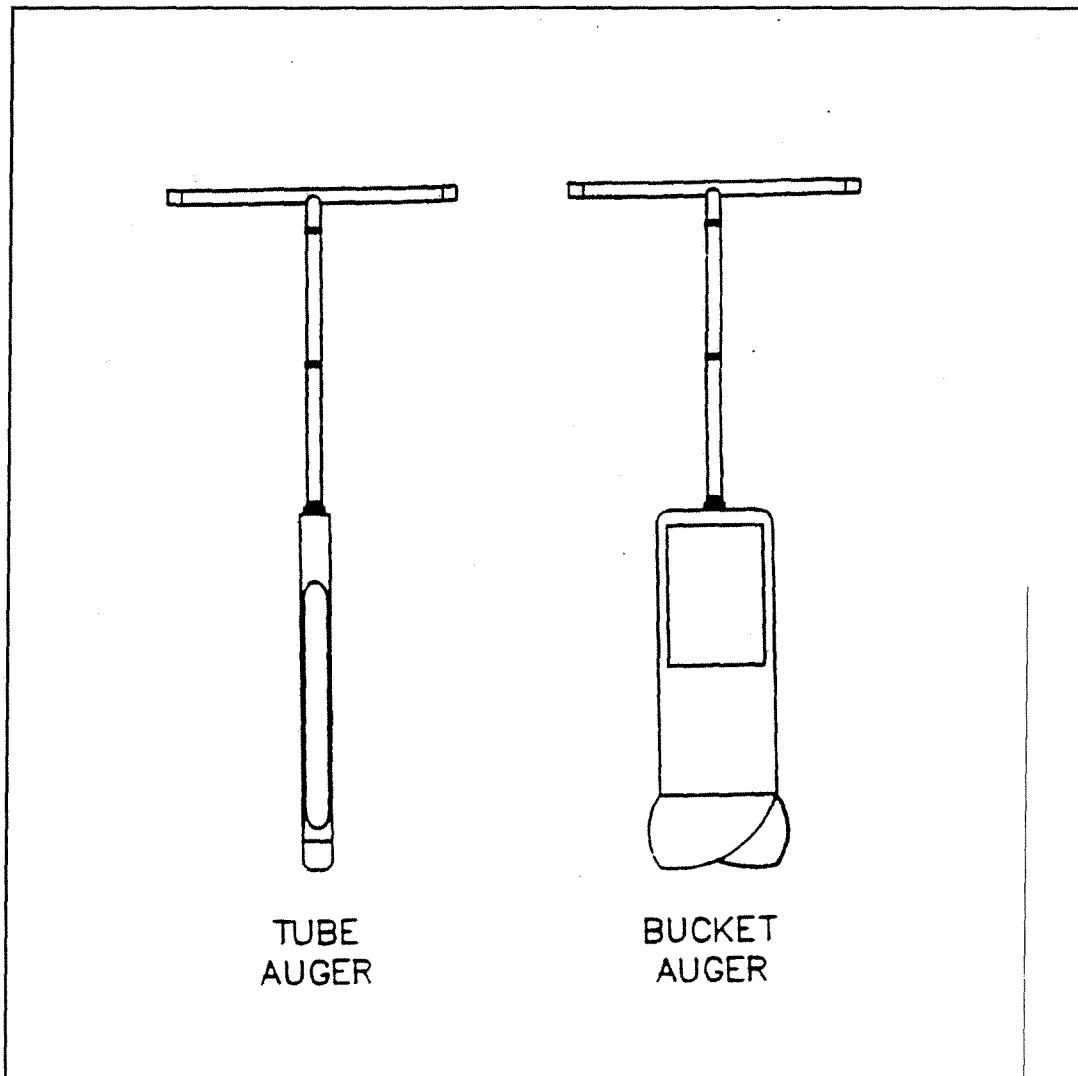
U. S. EPA ENVIRONMENTAL RESPONSE TEAM

STANDARD OPERATING PROCEDURES

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SOIL SAMPLING

FIGURE 1. Sampling Augers





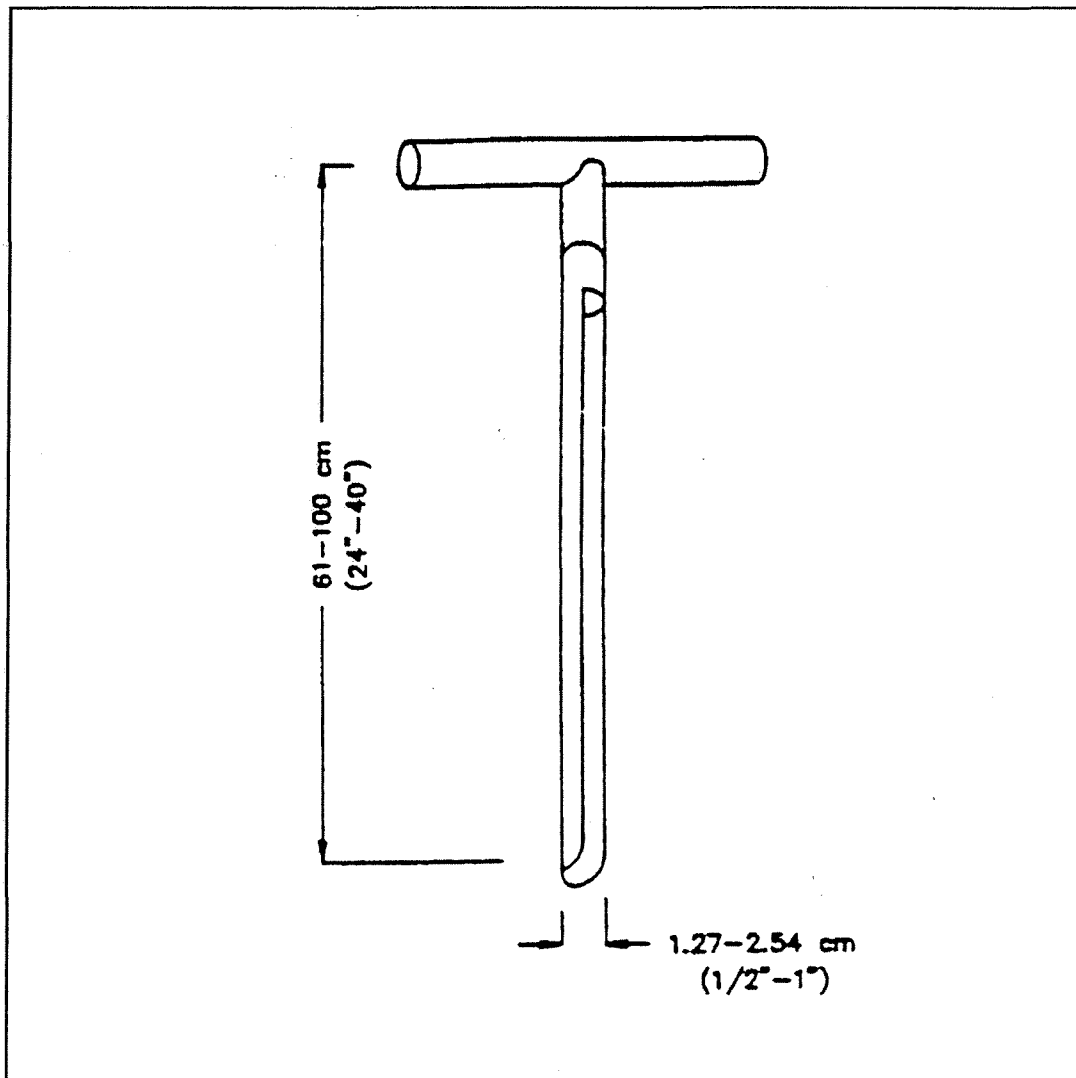
U. S. EPA ENVIRONMENTAL RESPONSE TEAM

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SOIL SAMPLING

FIGURE 2. Sampling Trier



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REMOVAL SUPPORT TEAM 2
 EPA CONTRACT EP-W-06-072

RST 2-02-F-0306

TRANSMITTAL MEMO

To: David Rosoff, OSC
 Removal Action Branch,
 U.S. EPA Region II

From: Smita Sumbaly, Data Reviewer
 RST 2 Region II

Subject: Frankfort Asbestos Site
 Data Validation Assessment

Date: August 31, 2007

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

Full TCL (VOA, BNA, Pest/PCBs)	1 sample
Herbicides	1 sample
TAL Metals	1 sample
- Matrices and Number of Samples

Soil	1 sample
------	----------
- Sampling date: August 7, 2007

The final data assessment narrative and original analytical data package are attached.

cc: RST 2 SPM: John Brennan
 RST 2 SITE FILE TDD #: TO-0007-0019
 ANALYTICAL TDD #: TO-0007-0070
 PCS# 1069



U. S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: August 29, 2007
 TO: David Rosoff, OSC
USEPA Region II
 FROM: Smita Sumbaly
RST 2 Data Review Team
 SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

- | | |
|--------------------------|------------------------|
| Data Completeness | Blanks |
| Spectra Matching Quality | DFTPP and BFB Tuning |
| Surrogate Spikes | Chromatography |
| Matrix Spikes/Duplicates | Holding Times |
| Calibration | Compound ID (HSL, TIC) |

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>
	<u>TAL</u>	<u>VOA</u>	<u>BNA</u>	<u>PEST/ PCBs</u>	<u>Herbicide</u>
Acceptable as Submitted	_____	_____	_____	_____	_____
Acceptable with Comments	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>
Unacceptable, Action Pending	_____	_____	_____	_____	_____
Unacceptable	_____	_____	_____	_____	_____

Data Reviewed by: *Smita Sumbaly* 8/29/07
 Signature: _____ Date: _____

Approved By: *[Signature]* 8/30/07
 Signature: _____ Date: _____

Area Code/Phone No.: (732) 225-6116

NARRATIVE**PCS No.: 1069****SITE NAME: Frankfort Asbestos Site****Southside Road, Frankfort, Herkimer County, New York.****Laboratory Name: Compuchem a division of Liberty Analytical, Madison Avenue, Cary, NC - 27513.****INTRODUCTION:**

The laboratory's portion of this Case consisted of one soil sample collected on August 7, 2007.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of TAL metals, Full TCL (Volatile/BNA/PESTICIDES/PCBs) and Herbicides - Organic/Inorganic parameters.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Appropriate Form I's and Chain of Custody have been copied from the original data package and appended to the data assessment narrative for reference.

I. Full TCL and Herbicides

<u>Y</u> Holding Time	<u>NA</u> MS/MSD
<u>Y</u> GC/MS Tuning	<u>Y</u> Compound ID (HSL, TIC)
<u>Y</u> Calibration, Initial	<u>Y</u> Spectra Quality
<u>Y</u> Calibration, Continuing	<u>Y</u> Standards
<u>Y</u> Blank	<u>Y</u> Chromatography
<u>Y</u> Surrogate Recovery	<u>Y</u> Data Completeness
<u>Y</u> Laboratory Control Sample	

Comments:

1. Refer to Data Assessment Narrative.

IV. Inorganic:

- Y Data Summary/Tabulated Results
- Y Initial and Continuing Calibration
- Y Blanks
- Y ICP Interference Check
- Y Spike Sample Recovery
- Y Duplicates
- Y Detection Limits
- NA Standard Addition Results
- Y ICP Serial Dilutions
- Y Holding Times
- Y ICP Interelement Correction Factors
- Y ICP Linear Ranges
- Y Chain of Custody
- Y Raw Data
- Y Quantitation, Conversions, Dilutions, etc.

Comments:

1. Refer to Data Assessment Narrative.

ATTACHMENT 1
SOP NO. HW-6

PAGE 1

A.2.2 Data Assessment (continued):

REGION II START DATA ASSESSMENT REPORT

RFP Project #: 042 Case #: NA SDG #: 13545 & 7235LAB: CompuChem a Division of Liberty Analytical Corp. LAB Code: LIBRTYSITE: Frankfort Asbestos Site Analysis: Full TCL (Volatile, Semi-Volatile, Pesticide/PCBs)
and Herbicides - Organic Parameters

Contractor: RST 2

Reviewer: Smita Sumbaly

Matrix:

Soil: 01

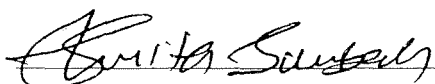
CERCLIS ID #:

The current Functional Guidelines for evaluating organic data have been applied.

All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detects), "R" (unusable), or "JN" (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Analytical data qualified as "JN" or "R" may not be used to demonstrate compliance with Toxicity Characteristic or Land Ban Regulations.

Reviewer's
Signature:Date: 8/29 / 2007

Verified By: _____

Date: ___ / ___ / 2007

A.2.2 Data Assessment (continued):

On 7 August 2007, USEPA Region II RST 2 personnel collected one soil sample for Target Compound List (Volatile (VOA), Semi-Volatile (BNA) and Pesticide/PCBs) and Herbicide organic analyses from the Frankfort Asbestos Site, Frankfort, Herkimer County, New York. Within twenty-four hours of collection, samples were shipped via overnight Federal Express courier to CompuChem a Division of Liberty Analytical Corp., Cary, NC. The laboratory verified that samples were received intact, properly custody sealed and refrigerated (sample cooler temperature recorded at 3.6 °C).

TCL organic analyses were performed following the SW 846 Method No. 8260B (volatiles), Method No. 8270C (semi-volatiles), Method No. 8081A (pesticides), Method No. 8082 (PCBs), and Method No. 8151A (herbicide).

Client identification (ID) and laboratory ID numbers:

<u>Client ID No.</u>	<u>Laboratory ID No.</u>	<u>Matrix</u>	<u>Analysis</u>
FA-S-012A	1354501	Soil	Full TCL and Herbicides

All samples were submitted for QA-1 analysis. No field duplicate and MS/MSD samples were collected.

The results presented in the data package are acceptable with the exception noted in the following data assessment narrative.

1. HOLDING TIMES:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following analytes in the samples shown were qualified because of holding time:

Full TCL and Herbicides - The following data were qualified as estimated "J" or rejected "R" due to exceeding holding time criteria:

<u>Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Extracted</u>	<u>VTSR at Lab</u>	<u>Date Analyzed</u>	<u>Qualifier</u>	<u>#</u> Compounds
Data met QC criteria.							

Note: VOA soil/solid samples must be analyzed within ten (10) days of collection and BNA/Pest/PCBs/Herbicides soil/solid samples must be extracted within seven (7) days of collection. Extracts must be analyzed within forty (40) days of extraction.

ATTACHMENT 1
SOP NO. HW-6

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A.2.2 Data Assessment (continued):

2. BLANK CONTAMINATION:

Quality Assurance (QA) blanks [i.e., method, trip, field or rinse blanks] are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the samples shown were qualified with "U" for these reasons:

A) Method Blank Contamination

VOA - The following compounds were qualified as non-detected "U" in the associated samples due to method blank contamination:

<u>Compound</u>	<u>Qualifier</u>	<u>Associated Samples</u>
Methylene Chloride	"U"	FA-S-012A

BNA/Pest/PCBs/Herbicides - The following compounds were qualified as non-detected "U" in the associated samples due to method blank contamination:

<u>Compound</u>	<u>Associated Samples</u>
Data met QC criteria	

3. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene (BFB) and for semi-volatiles is decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error or missing, all associated data will be classified as unusable "R". The following samples shown were qualified with "R" because of tuning:

VOA/BNA: Data met QC criteria.

ATTACHMENT 1
SOP NO. HW-6

A.2.2 Data Assessment (continued):

4. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

A) Response Factor:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the VOA/BNA Target Compound List (TCL) must be ≥ 0.05 in both the initial and continuing calibrations. A value ≤ 0.05 indicates a serious detection and quantitation problem (poor sensitivity). If the mean RRF of the initial calibration or the continuing calibration has a response factor < 0.05 for any analyte, those analytes detected in environmental samples will be qualified as estimated "J". All non-detects for those compounds will be rejected "R". The following analytes in the samples shown were qualified because of response factor:

Initial Calibration

Full TCL and Herbicides - The following compounds were either qualified as estimated "J" (positive values only) or rejected "R" (non-detected "U" values only) in the associated samples because the Initial Calibration Mean RRF value is < 0.05 :

<u>Compound</u>	<u>Qualifier</u>	<u>Associated Sample(s)</u>
-----------------	------------------	-----------------------------

Data met QC criteria.

Continuing Calibration

Full TCL and Herbicides - The following compounds were either qualified as estimated "J" (positive values only) or rejected "R" (non-detected "U" values only) in the associated samples because the Continuing Calibration RRF50 is < 0.05 :

<u>Compound</u>	<u>Qualifier</u>	<u>Associated Sample(s)</u>
-----------------	------------------	-----------------------------

Data met QC criteria.

ATTACHMENT 1
SOP NO. HW-6

PAGE 5

A.2.2 Data Assessment (continued):

5. CALIBRATION:

B) PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < 25%. A value outside of these QC limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J"; and non-detects are flagged "UJ". If %RSD and/or %D grossly exceed QC criteria, non-detect data may be qualified "R".

For the PESTICIDE/PCB fraction, if %RSD exceeds 20% for all analytes except for the 2 surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the samples shown were qualified for %RSD and %D:

Initial Calibration

Full TCL and Herbicides - Positive values of the following compounds were qualified as estimated "J" in the associated samples because the Initial Calibration %RSD is between 30-90% when the mean RRF is > 0.05:

<u>Compound</u>	<u>Associated Sample(s)</u>
Data met QC criteria	

Continuing Calibration

VOA - The following compounds were qualified as estimated "J" because the Continuing Calibration %D is between 25-90% when the RRF50 is > 0.05:

<u>Compound</u>	<u>Qualifier</u>	<u>Associated Sample(s)</u>
Bromomethane	"J"	FA-S-012A
Methyl-tert-butyl-ether	"J"	FA-S-012A

Note: For 2-hexanone, the percent difference (25.29%) was just above the QC limit (25%), therefore using the professional judgment, no qualification was required.

BNA/Pest/PCBS/HERbicides - The following compounds were qualified as estimated "J" because the Continuing Calibration %D is greater than 15%:

<u>Fraction</u>	<u>Compound</u>	<u>Qualifier</u>	<u>Associated Sample(s)</u>
Pesticide	4,4-DDT	"J"	FA-S-012A

SOP NO. HW-6

A.2.2 Data Assessment (continued):

6. SURROGATES/SYSTEM MONITORING COMPOUNDS (SMC):

All samples are spiked with surrogate/SMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate/SMC concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below. The following analytes for the samples shown were qualified because of surrogate/SMC recovery:

Full TCL and Herbicides - The following compounds were either qualified as estimated "J" or rejected "R" due to surrogate recovery outside specified QC limits:

<u>Surrogate</u>	<u>Recovery</u>	<u>Qualifier</u>	<u>Compounds</u>	<u>Sample(s)</u>
Data met QC criteria				

Note: Data were qualified because either two (2) base-neutral and/or two (2) acid compounds have recoveries outside specified QC limits and above 10%, or either one (1) base-neutral and/or one (1) acid compound has a percent recovery below 10%.

7. INTERNAL STANDARDS PERFORMANCE:

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to 100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ± 30 seconds from the associated continuing calibration standard. If the area count is outside the -50% to 100% range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated "J", and all non-detects as "UJ" only if the IS area is $< 50\%$. Non-detects are qualified as "R" if there is a severe loss of sensitivity ($< 25\%$ of associated IS area counts).

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction. The following analytes in the samples shown were qualified because of internal standard performance:

VOA/BNA - The following compounds were either qualified as estimated "J" or rejected "R" in the associated samples due to exceeding Internal Standard (IS) QC criteria (within -50% to + 100% of the Continuing Calibration 12-hour standard):

<u>Internal Standard</u>	<u>Percent IS Area Count of the 12-Hour Standard</u>	<u>Qualifier</u>	<u>Total Analytes Qualified/Sample</u>	<u>Associated Sample</u>
Data met QC criteria				

Data met QC criteria

**ATTACHMENT 1
SOP NO. HW-6**

A.2.2 Data Assessment (continued):

8. COMPOUND IDENTIFICATION:

A) VOLATILE AND SEMI-VOLATILE FRACTIONS:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the Tentatively Identified Compounds (TICs) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. The following analytes in the samples shown were qualified for compound identification:

The following compounds were qualified as estimated "J" in the indicated samples because they could not be chromatographically resolved:

<u>Fraction</u>	<u>Compounds</u>	<u>Samples</u>
-----------------	------------------	----------------

VOA/BNA: No Problems were found

B) PESTICIDE FRACTION:

The retention time of the reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ng/ml in the final sample extract. The percent difference (%D) of the positive results obtained on the two GC columns would be $\leq 25\%$.

The following analytes in the samples shown were qualified because of compound identification:

Pesticide/PCBs/Herbicides - The following detected compounds were qualified due to a percent difference (%D) between the primary and confirmation columns $> 25\%$:

<u>Fraction</u>	<u>Compound</u>	<u>%D</u>	<u>Qualifier</u>	<u>Sample(s)</u>
Pesticide	Endrin Ketone	> 40%	"J"	FA-S-012A
Herbicide	2,4-DB	> 25%	"J"	FA-S-012A
	Pentachlorophenol	> 25%	"J"	FA-S-012A

9. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for some additional qualification of the data. The following analytes, for the samples shown, were qualified because of MS/MSD:

All samples were submitted for QA-1 analysis. No MS/MSD samples were collected.

SOP NO. HW-6

A.2.2 Data Assessment (continued):

10. OTHER QC DATA OUT OF SPECIFICATION:

VOA/BNA/PCBs - The following compounds were qualified as estimated "J" in the associated aqueous and/or soil/sediment field duplicate samples because the Relative Percent Difference (RPD) between the sample and field duplicate sample is > 50% for aqueous samples, or > 100% for soil/sediment samples:

<u>Compound</u>	<u>Matrix</u>	<u>% RPD</u>	<u>Associated Field Duplicate Samples</u>
-----------------	---------------	--------------	---

All samples were submitted for QA-1 analysis. No field duplicate samples were collected.

FULL TCL and Herbicides : The following soil/sediment/solid sample data (other than TCLP data) were either qualified as estimated "J" (% solids between 10-50%) or rejected "R" (% solids < 10%) because the sample contains more than 50% water:

<u>Fraction</u>	<u>Percent Solids</u>	<u>Qualifier</u>	<u># Compounds</u>	<u>Sample(s)</u>
VOA/BNA, Pest/PCBs and Herbicides	44.7%	"J"	All	FA-S-012A

Note: Some compounds were previously qualified due to other QC criteria, are not qualified again.

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

Due to professional judgment, the following compounds were not transferred from the indicated dilution sample analyses to the undiluted sample analyses because the reported values of these compounds are qualified as non-detected "U" due to blank contamination QC criteria:

<u>Fraction</u>	<u>Compound</u>	<u>Dilution Sample(s)</u>	<u>Dilution Factor</u>
-----------------	-----------------	---------------------------	------------------------

No qualification was required.

Due to professional judgment, the following positive data were rejected "R" due to possible carryover from a previous sample analysis that contained the compound(s) at high concentration(s):

<u>Fraction</u>	<u>SampleCompound</u>	<u>Sample Compound Concentration</u>	<u>Previous Sample Compound Concentration</u>
-----------------	-----------------------	--------------------------------------	---

No qualification was required

12. CONTRACT PROBLEMS _____ NON-COMPLIANCE:

None

13. This package contain re-extraction, re-analysis or dilution results. Upon reviewing the QA results, the following Form I(s) are identified to be used:

<u>Fraction:</u>	<u>Use Sample(s)</u>	<u>Do Not Use Sample(s)</u>
------------------	----------------------	-----------------------------

None

OTHER ANALYTES WORK TABLE

FAS2.2013

PROJECT: Frankfort Asbestos Site

SAMPLING DATE: August 7, 2007

SAMPLE #/CONCENTRATION ($\mu\text{g}/\text{kg}$)

	Matrix:	SOIL			
Volatiles	Client ID#:	FA-S-012A			
Low Concentration	Lab ID#:	1354501			
Percent Moisture		55			
Dilution Factor	MDL	1.0			
m,p-Xylene	10	U	J		
o-Xylene	5	U	J		
Dichlorodifluoromethane	5	U	J		
Chloromethane	5	U	J		
Vinyl Chloride	5	U	J		
Bromomethane	5	U	J		
Chloroethane	5	U	J		
Trichlorofluoromethane	5	U	J		
1,1-Dichloroethene	5	U	J		
Carbon Disulfide	5	2.5	J		
1,1,2-Trichloro-1,2,2-trifluoroethane	5	U	J		
Acetone	13	69	BJ		
Methylene Chloride	5	U	J		
trans-1,2-Dichloroethene	5	U	J		
Methyl tert-Butyl Ether	5	U	J		
1,1-Dichloroethane	5	U	J		
Cis-1,2-Dichloroethene	5	U	J		
2-Butanone	13	U	J		
Chloroform	5	U	J		
1,1,1-Trichloroethane	5	U	J		
Carbon Tetrachloride	5	U	J		
Benzene	5	U	J		
1,2-Dichloroethane	5	U	J		
Trichloroethene	5	U	J		
1,2-Dichloropropane	5	U	J		
Bromodichloromethane	5	U	J		
cis-1,3-Dichloropropene	5	U	J		
4-Methyl-2-Pentanone	13	U	J		
Toluene	5	U	J		
trans-1,3-Dichloropropene	5	U	J		
1,1,2-Trichloroethane	5	U	J		
Tetrachloroethene	5	U	J		
2-Hexanone	13	U	J		

U - non-detected compound

B - compound detected in the associated Method Blank

J - estimated value

JN - presumptive evidence of a compound at an estimated value

R - rejected compound

PROJECT: Frankfort Asbestos Site

SAMPLING DATE: August 7, 2007

SAMPLE #/CONCENTRATION (µg/kg)

	Matrix:	SOIL		
Volatiles	Client ID#:	FA-S-012A		
Low Concentration	Lab ID#:	1354501		
Percent Moisture		55		
Dilution Factor	MDL	1.0		
Dibromochloromethane	5	U J		
1,2 - Dibromoethane	5	U J		
Chlorobenzene	5	U J		
Ethylbenzene	5	U J		
Styrene	5	U J		
Bromoform	5	U J		
Isopropylbenzene	5	U J		
1,1,2,2-Tetrachloroethane	5	U J		
1,3, - Dichlorobenzene	5	U J		
1,4, - Dichlorobenzene	5	U J		
1,2, - Dichlorobenzene	5	U J		
1,2 - Dibromo-3-Chloropropane	5	U J		
1,2,4 - Trichlorobenzene	5	U J		
Xylene (total)	15	U J		
Methyl Acetate	5	U J		
Cyclohexane	5	U J		
Methylcyclohexane	5	U J		

U - non-detected compound

B - compound detected in the associated Method Blank

J - estimated value

JN - presumptive evidence of a compound at an estimated value

R - rejected compound

OTHER ANALYTES WORK TABLE

FAS2.2015

PROJECT: Frankfort Asbestos Site

SAMPLING DATE: August 7, 2007

SAMPLE #/CONCENTRATION ($\mu\text{g}/\text{Kg}$)

	MATRIX CLIENT ID # LAB ID #	Soil FA-S-012A 1354501		
Semi-Volatiles				
Low Concentration				
Percent Moisture		55		
Dilution Factor	MDL	1.0		
Benzaldehyde	330	U		
Phenol	330	U		
bis(2-Chloroethyl)ether	330	U		
2-Chlorophenol	330	U		
2-Methylphenol	330	U		
2,2'-oxybis(1-Chloropropane)	330	U		
Acetophenone	330	U		
4-Methylphenol	330	120	J	
N-Nitroso-di-n-propylamine	330	U		
Hexachloroethane	330	U		
Nitrobenzene	330	U		
Isophorone	330	U		
2-Nitrophenol	330	U		
2,4-Dimethylphenol	330	U		
bis(2-Chloroethoxy)methane	330	U		
2,4-Dichlorophenol	330	U		
Naphthalene	330	U		
4-Chloroaniline	330	U		
Hexachlorobutadiene	330	U		
Caprolactam	330	U		
4-Chloro-3-methylphenol	330	U		
2-Methylnaphthalene	330	U		
Hexachlorocyclopentadiene	330	U		
2,4,6-Trichlorophenol	330	U		
2,4,5-Trichlorophenol	830	U		
1, 1' - Biphenyl	330	U		
2-Chloronaphthalene	330	U		
2-Nitroaniline	830	U		
Dimethylphthalate	330	U		
2,6-Dinitrotoluene	330	U		
Acenaphthylene	330	U		
3-Nitroaniline	830	U		
Acenaphthene	330	U		
2,4-Dinitrophenol	830	U		
4-Nitrophenol	830	U		
Dibenzofuran	330	U		
2,4-Dinitrotoluene	330	U		
Diethylphthalate	330	U		

PROJECT: Frankfort Asbestos Site

SAMPLING DATE: August 7, 2007

SAMPLE #/CONCENTRATION (µg/Kg)

	MATRIX CLIENT ID # LAB ID #	Soil FA-S-012A 1354501		
Semi-Volatiles				
Low Concentration				
Percent Moisture		55		
Dilution Factor	MDL	1.0		
	MDL			
Fluorene	330	U		
4-Chlorophenyl-phenylether	330	U		
4-Nitroaniline	830	U		
4,6-Dinitro-2-methylphenol	830	U		
N-Nitrosodiphenylamine	330	U		
4-Bromophenyl-phenylether	330	U		
Hexachlorobenzene	330	U		
Atrazine	330	U		
Pentachlorophenol	830	U		
Phenanthrene	330	U		
Anthracene	330	U		
Carbazole	330	U		
Di-n-butylphthalate	330	U		
Fluoranthene	330	98 J		
Pyrene	330	U		
Butylbenzylphthalate	330	U		
3,3-Dichlorobenzidine	330	U		
Benzo(a)anthracene	330	U		
Chrysene	330	U		
bis(2-Ethylhexyl)phthalate	330	U		
Di-n-octylphthalate	330	U		
Benzo(b)fluoranthene	330	U		
Benzo(k)fluoranthene	330	U		
Benzo(a)pyrene	330	U		
Indeno(1,2,3-cd)pyrene	330	U		
Dibenz(a,h)anthracene	330	U		
Benzo(g,h,i)perylene	330	U		

U - non-detected compound

B - detected in the corresponding method blank

J - estimated value

JN - presumptive evidence of a compound
at an estimated value

R - rejected compound

OTHER ANALYTES WORK TABLE

FAS2.2017

Project: Frankfort Asbestos Site

Sampling Date: August 7, 2007

SAMPLE #/CONCENTRATION ($\mu\text{g}/\text{kg}$)

Pesticides Low Concentration	Method Detection Limit	Soil FA-S-012A 1354501	
Percent Moisture		NA	
Dilution Factor		20	
Aldrin	1.7	U	J
beta-BHC	1.7	U	J
alpha-BHC	1.7	U	J
delta-BHC	1.7	U	J
gamma-BHC (Lindane)	1.7	U	J
4,4'-DDD	3.3	U	J
4,4'-DDE	3.3	U	J
4,4'-DDT	3.3	U	J
Dieldrin	3.3	U	J
Endosulfan I	1.7	U	J
Endosulfan II	3.3	U	J
Endosulfan Sulfate	3.3	U	J
Endrin	3.3	U	J
Endrin Aldehyde	3.3	U	J
Heptachlor	1.7	U	J
Methoxychlor	17	U	J
Toxaphene	170	U	J
Aroclor-1016	33	U	J
Aroclor-1221	67	U	J
Aroclor-1232	33	U	J
Aroclor-1242	33	U	J
Aroclor-1248	33	U	J
Aroclor-1254	33	U	J
Aroclor-1260	33	U	J
Endrin Ketone	3.3	170	J
gamma-Chlordane	1.7	460	J
alpha-Chlordane	1.7	530	J

U - non-detected compound

B - detected in the corresponding method blank

J - estimated value

JN - presumptive evidence of a compound
at an estimated value

R - rejected compound

OTHER ANALYTES WORK TABLE

PROJECT: Frankfort Asbestos Site

SAMPLING DATE: August 7, 2007

SAMPLE #/CONCENTRATION ($\mu\text{g}/\text{kg}$)

	Method	Soil	
Herbicides	Detection	FA-S-012A	
Low Concentration	Limit	1354501	
Percent Moisture		55	
Dilution Factor	MDL	1.0	
2,4-DB	330	860	J
2,4-D	170	U	J
Silvex	33	U	J
2,4,5-T	33	U	J
Dinoseb	83	U	J
Dicamba	83	U	J
Dichlorprop	330	U	J
Dalapon	170	U	J
4-nitrophenol	83	U	J
Pentachlorophenol	17	8.2	J

U - non-detected compound

B - detected in the corresponding method blank

J - estimated value

JN - presumptive evidence of a compound

at an estimated value

R - rejected compound

CompuChem

a division of Liberty Analytical Corporation

501 Madison Avenue

Cary, N.C. 27513

Tel: 919/379-4100

Fax: 919/379-4050

FAS2.2019

SDG NARRATIVE

SDG # 13545

PROTOCOL: SW-846

SAMPLE IDENTIFICATION: FA-S-012A

The soil sample (waste debris) listed above was received intact, properly refrigerated at a temperature of 3.6°C, with proper documentation, in sealed shipping containers, on August 08, 2007.

The sample was scheduled for the requested analysis of the volatile fraction. SW-846, 3rd Edition, Update 3, Method 8260B was used to analyze the sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance Notices are included in the narrative section. This narrative pertains to the volatile fraction only.

VOLATILES:

Analysis holding time requirements were met for this sample.

The percent moisture value for this sample was 55.

The sample in this SDG was run as a low level soil.

The volatile target compound list (TCL) analytes Acetone was identified above the Contract Required Quantitation Limit (CRQL) in the sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

Tentatively Identified Compounds (TICs) were not found in the sample.

All bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG.

Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All of the system monitoring compounds met recovery criteria in the analyses of these samples.

All of the internal standards met response and retention time criteria in the analyses of these samples.

The associated method blank met all quality control criteria.

No matrix spike/matrix spike duplicate (MS/MSD) samples were requested with this SDG. The associated duplicate Laboratory Control Samples (LCS/LCSD) met all accuracy and precision criteria.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted electronically and on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

S. A. Parikh

Saroj A. Parikh
GC/MS Case Reviewer
August 10, 2007

Moisture/pH

FAS2.2020

SAMPLE ID	%MOISTURE	PH	DECANTED MOISTURE	%SOLIDS
1354501	55			44.6677

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT

FAS2.2021

FA-S-012A

Lab Name: COMPUCHEM

Method: 8260B

Lab Code: LIBRTY

Case No.:

SAS No.:

SDG No.: 13545

Matrix: (soil/water) SOIL

Lab Sample ID: 1354501

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 1354501RA59

Level: (low/med) LOW

Date Received: 08/08/07

% Moisture: not dec. 55

Date Analyzed: 08/09/07

GC Column: ZB-624 ID: 0.32 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

108-38-3	m,p-Xylene (part of total)	22	U	J
95-47-6	o-Xylene (part of total)	11	U	J
75-71-8	Dichlorodifluoromethane	11	U	J
74-87-3	Chloromethane	11	U	J
75-01-4	Vinyl Chloride	11	U	J
74-83-9	Bromomethane	11	U	J
75-00-3	Chloroethane	11	U	J
75-69-4	Trichlorofluoromethane	11	U	J
75-35-4	1,1-Dichloroethene	11	U	J
75-15-0	Carbon disulfide	2.5	J	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	11	U	J
67-64-1	Acetone	69	B	J
75-09-2	Methylene Chloride	5.0	U	J
156-60-5	trans-1,2-Dichloroethene	11	U	J
1634-04-4	Methyl-tert-butyl ether	11	U	J
75-34-3	1,1-Dichloroethane	11	U	J
156-59-2	cis-1,2-Dichloroethene	11	U	J
78-93-3	2-butanone	28	U	J
67-66-3	Chloroform	11	U	J
71-55-6	1,1,1-Trichloroethane	11	U	J
56-23-5	Carbon Tetrachloride	11	U	J
71-43-2	Benzene	11	U	J
107-06-2	1,2-Dichloroethane	11	U	J
79-01-6	Trichloroethene	11	U	J
78-87-5	1,2-Dichloropropane	11	U	J
75-27-4	Bromodichloromethane	11	U	J
10061-01-5	cis-1,3-Dichloropropene	11	U	J
108-10-1	4-Methyl-2-pentanone	28	U	J
108-88-3	Toluene	11	U	J
10061-02-6	trans-1,3-Dichloropropene	11	U	J
79-00-5	1,1,2-Trichloroethane	11	U	J
127-18-4	Tetrachloroethene	11	U	J
591-78-6	2-hexanone	28	U	J

FORM I VOA

FORM I
LATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FAS2.2022

FA-S-012A

Lab Name: COMPUCHEM

Method: 8260B

Lab Code: LIBRTY

Case No.:

SAS No.:

SDG No.: 13545

Matrix: (soil/water) SOIL

Lab Sample ID: 1354501

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 1354501RA59

Level: (low/med) LOW

Date Received: 08/08/07

% Moisture: not dec. 55

Date Analyzed: 08/09/07

GC Column: ZB-624 ID: 0.32 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
124-48-1	Dibromochloromethane	11	U J
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropyl Benzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-Chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
1330-20-7	Xylene (total)	33	U
79-20-9	Methyl acetate	11	U
110-82-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT FAS2.2023

FA-S-012A

Lab Name: COMPUCHEM

Contract: 8260B

Lab Code: LIBRTY Case No.:

SAS No.:

SDG No.: 13545

Matrix: (soil/water) SOIL

Lab Sample ID: 1354501

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 1354501RA59

Level: (low/med) LOW

Date Received: 08/08/07

% Moisture: not dec. 55

Date Analyzed: 08/09/07

GC Column: ZB-624 ID: 0.32 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

A division of Liberty Analytical Corporation

501 Madison Avenue

Cary, N.C. 27513

Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 13545

PROTOCOL: SW-846

SAMPLE IDENTIFICATION: FA-S-012A

The soil sample (waste debris) listed above was received intact, properly refrigerated at a temperature of 3.6°C, with proper documentation, in sealed shipping containers, on August 08, 2007.

SW-846, 3rd Edition, Update 3, Sonication extraction (Method 3550B) and Method 8270C were used to prepare and analyze this sample. This portion of the SDG narrative deals with the semivolatile fraction only. All pertinent Quality Assurance Notices are included in the narrative.

GC/MS Semivolatiles

Extraction and analysis holding time requirements were met for this sample.

The percent moisture value was 55 for this sample.

The sample in this SDG was prepared and analyzed as a low level soil.

There were no semivolatile target compound list (TCL) analytes identified above the quantitation limit (QL) in this sample.

There were twenty Tentatively Identified Compounds (TICs) found in this sample. One TIC in this sample was identified as benzo(g,h,i)perylene, a TCL analyte. However, the retention time of this TIC did not compare well to the analyte's retention time in the associated continuing calibration standard. The TIC has been left with that assessment name because of the purity of this TIC being greater than 85%.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All decafluorotriphenylphosphine (DFTPP) abundance criteria were met for tunes associated with this SDG.

Overall quality control criteria were met for all initial and continuing calibration standards associated to this SDG.

All of the surrogates met recovery criteria in the analyses of these samples.

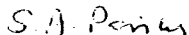
All of the internal standards met response and retention time criteria in the analyses of these samples.

The associated method blank met all quality control criteria.

No matrix spike/matrix spike duplicate (MS/MSD) samples were requested with this SDG. The associated duplicate Laboratory Control Samples (LCS/LCSD) prepared and analyzed along with this sample met all accuracy and precision criteria, with the exception of the RPDs of Phenol and 2-Chlorophenol. The RPDs of Phenol and 2-Chlorophenol were above the QC limits at 32% and 34% respectively, with the QC limit of 30%. These compounds are not detected above the QLs in the sample associated with these LCS and LCSD.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted electronically and on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Saroj A. Parikh

GC/MS Case Reviewer

August 11, 2007

Calibration Date(s): 08-AUG-2007 18:48 08-AUG-2007 23:20

FAS2.2025

Instrument ID: 5972hp62

An initial calibration was analyzed by Method 8270C. Per the methodology, all compounds are to meet a Percent Relative Standard Deviation (%RSD) limit of no more than 15%. Additional calibration options are provided in the method when the RSD exceeds 15%. CompuChem has chosen to apply the option of determining the mean RSD values for all analytes in the initial calibration.

When there are analytes with %RSDs greater than the limit, proof of calibration linearity can be shown if the average of all compounds in the initial calibration meet the same 15% limit. Based on Method 8270C, Sec. 7.3.7.1, and Method 8000B, Section 7.5.1.2, we are providing a list of the compounds which failed to meet the limit, and their associated %RSDs. Finally, the average of all %RSDs from all compounds in the initial calibration is shown, confirming the usability of the initial calibration and any data that follows it.

Compound Name	RSD
=====	=====
Hexachlorocyclopentadiene	21.0
2,4-Dinitrophenol	39.2
4,6-Dinitro-2-methylphenol	17.2
Pentachlorophenol	15.6
Benzidine	17.2

Average %RSD for all compounds in the Initial Calibration: 8.3 %

Data Reviewer/ID: *[Signature]* / 7618
 Date: *[Signature]*

FA-S-012A

Lab Name: COMPUCHEM

Method: 8270C

Lab Code: LIBRTY

Case No.:

SAS No.:

SDG No.: 13545

Matrix: (soil/water) SOIL

Lab Sample ID: 1354501

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 1354501A62

Level: (low/med) LOW

Date Received: 08/08/07

% Moisture: 55 decanted: (Y/N) N

Date Extracted: 08/09/07

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 08/10/07

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____

CONCENTRATION UNITS:
 (ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

100-52-7	Benzaldehyde	380	U J
108-95-2	Phenol	380	U
111-44-4	Bis(2-chloroethyl) ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
98-86-2	Acetophenone	380	U
106-44-5	4-Methylphenol	120	J
621-64-7	N-Nitroso-di-N-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	Bis(2-chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
105-60-2	Caprolactam	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	380	U
92-52-4	1,1'-Biphenyl	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	730	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	380	U
99-09-2	3-Nitroaniline	730	U
83-32-9	Acenaphthene	380	U

FORM I SV

8270C

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT S/

FAS2.2027

FA-S-012A

Lab Name: COMPUCHEM

Method: 8270C

Lab Code: LIBRTY

Case No.:

SAS No.:

SDG No.: 13545

Matrix: (soil/water) SOIL

Lab Sample ID: 1354501

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 1354501A62

Level: (low/med) LOW

Date Received: 08/08/07

% Moisture: 55 decanted: (Y/N) N

Date Extracted: 08/09/07

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 08/10/07

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

51-28-5	2,4-Dinitrophenol	730	U
100-02-7	4-Nitrophenol	730	U
121-14-2	2,4-Dinitrotoluene	380	U
132-64-9	Dibenzofuran	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	730	U
534-52-1	4,6-Dinitro-2-methylphenol	730	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
1912-24-9	Atrazine	380	U
87-86-5	Pentachlorophenol	730	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	98	J
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
117-81-7	bis(2-ethylhexyl) Phthalate	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

FORM I SV

8270C

FAS2.2028

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FA-S-012A

Lab Name: COMPUCHEM

Method: 8270C

Lab Code: LIBRTY

Case No.:

SAS No.:

SDG No.: 13545

Matrix: (soil/water) SOIL

Lab Sample ID: 1354501

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 1354501A62

Level: (low/med) LOW

Date Received: 08/08/07

% Moisture: 55 decanted: (Y/N) N

Date Extracted: 08/09/07

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 08/10/07

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: ____

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.85	570	JB
2.	UNKNOWN	17.17	570	J
3.	UNKNOWN	17.40	370	J
4.	UNKNOWN	17.65	260	J
5.	UNKNOWN	17.84	440	J
6.	UNKNOWN	18.62	280	J
7.	UNKNOWN	18.83	1100	J
8.	10544-50-0 CYCLIC OCTAATOMIC SULFUR	18.99	440	NJ
9.	STRAIGHT-CHAIN ALKANE	23.20	390	J
10.	STRAIGHT-CHAIN ALKANE	24.67	350	J
11.	0-00-0 16-HEPTADECENAL	25.67	350	NJ
12.	STRAIGHT-CHAIN ALKANE	26.05	730	J
13.	CYCLIC ALKANE	26.14	940	J
14.	UNKNOWN	27.16	310	J
15.	STRAIGHT-CHAIN ALKANE	27.34	1000	J
16.	UNKNOWN	27.55	580	J
17.	10191-41-0 VITAMIN E	27.77	320	NJ
18.	UNKNOWN	27.84	390	J
19.	191-24-2 BENZO[GHI]PERYLENE	28.31	200	NJ
20.	STRAIGHT-CHAIN ALKANE	28.86	370	J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

a division of Liberty Analytical Corporation

501 Madison Avenue

Raleigh, N.C. 27513

Phone: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 13545
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS: FA-S-012A

The one soil sample listed above was scheduled for the requested analysis of the Pesticide/PCB fraction. SW-846, 3rd Edition, Update 3, Method 8081A and 8082 were used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices for SDG #13545 are included in the sample data sections.

Pesticide/PCB

Extraction and analysis holding time requirements were met for the samples. Sulfur cleanup was performed on each of the samples and QC.

Sample FA-S-012A was reported at a dilution due to target analytes exceeding the calibration range.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All surrogate recoveries were within the method specified limits.

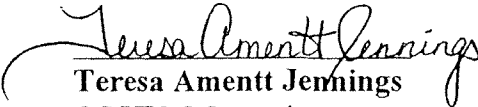
The method blank associated with the samples met all quality control criteria.

Matrix spike/matrix spike duplicate samples were not performed with this SDG. The Laboratory Control Samples (LCS/LCSD) prepared and analyzed with the samples met recovery and precision criteria, with the exception of Endrin Aldehyde. The low recovery is a result of the sulfur clean process, as can be seen by the original LCS and LCSD not sulfur clean in the non-reportable section.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on CD has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.


Teresa Amentt Jennings
GC/HPLC Supervisor
August 14, 2007

FA-S-012A

Lab Name: COMPUCHEM Contract: 8081A-8082

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 13545

Matrix: (soil/water) SOIL Lab Sample ID: 1354501

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 55 decanted: (Y/N) N Date Received: 08/08/07

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/09/07

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/14/07

Injection Volume: 1.0 (uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
309-00-2	Aldrin	76	U J
319-85-7	beta-BHC	38	U
319-84-6	alpha-BHC	76	U
319-86-8	delta-BHC	76	U
58-89-9	gamma-BHC (Lindane)	76	U
72-54-8	4,4'-DDD	150	U
72-55-9	4,4'-DDE	150	U
50-29-3	4,4'-DDT	150	U
60-57-1	Dieldrin	150	U
959-98-8	Endosulfan I	76	U
33213-65-9	Endosulfan II	150	U
1031-07-8	Endosulfan sulfate	150	U
72-20-8	Endrin	150	U
7421-93-4	Endrin Aldehyde	150	U
76-44-8	Heptachlor	76	U
1024-57-3	Heptachlor Epoxide	76	U
72-43-5	Methoxychlor	760	U
8001-35-2	Toxaphene	3700	U
12674-11-2	Aroclor-1016	1100	U
11104-28-2	Aroclor-1221	1500	U
11141-16-5	Aroclor-1232	760	U
53469-21-9	Aroclor-1242	760	U
12672-29-6	Aroclor-1248	760	U
11097-69-1	Aroclor-1254	760	U
11096-82-5	Aroclor-1260	760	U
53494-70-5	Endrin Ketone	170	U
5103-74-2	gamma-Chlordane	460	U
5103-71-9	alpha-Chlordane	530	U

a division of Liberty Analytical Corporation

501 Madison Avenue

Cary, N.C. 27513

Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG #13545

PROTOCOL: SW-846 8151A

SAMPLE IDENTIFICATIONS: FA-S-012A

The one soil sample listed above was scheduled for the requested analysis of the Herbicides fraction. SW-846 3rd Edition, Update 3, Method 8151A was used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the Herbicides analysis only. All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices for SDG #13545 are included in the sample data sections.

Herbicides

Extraction and analysis holding time requirements were met for the sample.

2,4-DB was detected above the Quantitation Limit (QL) in the sample.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

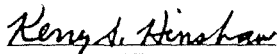
All of the surrogates met recovery and retention time criteria in the analyses of the sample.

The associated method blank met all quality control criteria.

There were no duplicate matrix spikes (MS/MSD) associated with this SDG.

The associated Laboratory Control Samples (LCS) prepared and analyzed with the samples met all recovery criteria with the exception of Dinoseb, Dalapon and 4-Nitrophenol, which are known poor performers with the Herbicide soil extraction.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Kerry S. Hinshaw

Manager, EPA and Method Development

August 13, 2007

FA-S-012A

Lab Name: COMPUCHEM Contract: 8151A
 Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 13545
 Matrix: (soil/water) SOIL Lab Sample ID: 1354501
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____
 % Moisture: 55 decanted: (Y/N) N Date Received: 08/08/07
 Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/09/07
 Concentrated Extract Volume: 10000 (ul) Date Analyzed: 08/13/07
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
94-82-6	2,4-DB	860	P J
94-75-7	2,4-D	370	U
93-72-1	silvex	74	U
93-76-5	2,4,5-T	74	U
88-85-7	dinoseb	180	U
1918-00-9	dicamba	180	U
120-36-5	dichloroprop	740	U
75-99-0	dalapon	370	U
100-02-7	4-nitrophenol	180	U
87-86-5	pentachlorophenol	8.2	PPW

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC chemists. An Extracted Ion Current Profile (EICP) or a GC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC analysis. The manual editing/integration flags are:

- M** - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak.
- H** - Denotes that the data reviewer, GC/MS operator, or GC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.
- MH** - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.
- L** - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.
- ML** - Denotes that an alternate library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

The EPA CLP SOW documents require additional explanations for manual editing/integration. In the accompanying raw data packages, additional codes have been applied to the "M" flag and carry the following meanings;

- M1** - The compound was not found by the automatic integration routine.
- M2** - The compound was incorrectly integrated by the automatic integration routine.
- M3** - The co-eluting compounds were incorrectly integrated by the automatic integration routine.

These codes will appear in the GC/MS and GC raw data.

DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each compound. The qualifiers used are:

- U: This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.
- J: This flag indicates an estimated value. The flag is used as detailed below:
1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1:1 is assumed for the TIC analyte,
 2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero, and
 3. When the retention time data indicate the presence of a compound that meets the pesticide and/or Aroclor or other GC or HPLC identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.
- N: This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search and must be used with the J flag. For generic characterization of a TIC such as "chlorinated hydrocarbon" (or for an "unknown," with no matches $\geq 85\%$ in the SOM01.1 SOW), the N flag is not used.
- P: In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the Form I and flagged with a P. For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the higher of the two values is reported and flagged with a P. When the RPD is equal to or less than 40%, our policy is to also report the higher of the two values, although the choice could be a project specific issue. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.
- C: This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

DATA REPORTING QUALIFIERS (continued)

- B :** This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.
- E :** This flag identifies compounds whose concentrations (responses in the SOM01.1 SOW) exceed the upper level of the calibration range (exceed the response of the high ICAL standard in the SOM01.1 SOW) of the instrument for that specific analysis. If one or more compounds have a response greater than the upper level of the calibration range (greater than the response of the highest ICAL standard in the SOM01.1 SOW), the sample or extract will be diluted and reanalyzed. All such compounds with a response greater than the upper level of the calibration range (with responses greater than the response of the highest ICAL standard in the SOM01.1 SOW) will have the concentration (result in the SOM01.1 SOW) flagged with an E on Form I for the original analysis.
- D :** If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration (response in the SOM01.1 SOW) of an analyte exceeds the upper calibration range (exceeds the response of the highest ICAL standard in the SOM01.1 SOW), the DL suffix is appended to the sample number on the Form I for the more diluted sample, and **all** reported concentrations on that Form I are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.
- NOTE 1:** The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.
- NOTE 2:** Separate Forms I are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses are not combined on a single Form I.
- A:** This flag indicates that a TIC is a suspected aldol-condensation product.
- S:** In the SOM01.1 SOW, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor.
- X/Y/Z :** Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

Compuchem

Attn: Cathy Dover

RFP No. 042

CHAIN OF CUSTODY RECORD

Weston Solutions, Inc.

1090 King Georges Post Road

Edison, NJ 08837

No: FRANK080706

Contact Name: John Brennan

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MSD
1354501	FA-S-012A	DEBRIS PILE	TCL-VOCS		8/7/2007	2	4 oz glass	4 C	
	FA-S-012A	DEBRIS PILE	TCL-SVOCS		8/7/2007	1	8 oz glass	4 C	
	FA-S-012A	DEBRIS PILE	TCL-PESTICIDES		8/7/2007	1	8 oz glass	4 C	
	FA-S-012A	DEBRIS PILE	TCL-PCBs		8/7/2007	1	8 oz glass	4 C	
	FA-S-012A	DEBRIS PILE	TCL HERBICIDES		8/7/2007	1	8 oz glass	4 C	
	FA-S-012A	DEBRIS PILE	TAL METALS		8/7/2007	1	8 oz glass	4 C	
<div style="position: absolute; top: -20px; left: 50%; transform: translate(-50%, -50%); font-size: 2em;">}</div> <div style="position: absolute; top: -10px; left: 40%; font-size: 1.2em;">1-8oz jar</div>									
<div style="position: absolute; top: -20px; left: 50%; transform: translate(-50%, -50%); font-size: 2em;">}</div>									

Special Instructions:	SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #
-----------------------	--

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
ALL / SHIP TO LABS	<i>[Signature]</i>	8/7/07	<i>[Signature]</i>	8/7/07	1700				<i>Jennifer Dover</i>	8/8/07	9:30

rec'd @ 3.6 °C

STANDARD OPERATING PROCEDURE

Page 1 of 2

Title: Evaluation of Inorganic Data for the
Contract laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Sep. 2005
Number: HW-2
Revision: 13

RFP#: 042

Site: Frankfort Asbestos Site

SDG#: 13545

Lab: CompuChem Environmental Lab

Matrix:

Soil: 1

Contractor: WESTON-RST

Reviewer: SMITA SUMBALY

A.2.1 Validation Flags-

The following flags have been applied in red by the data validator and must be considered by the data user.

J-

This flag indicates the result qualified as estimated.

Red- Line-

A red-line drawn through a sample result indicates an unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data-

The results that do not carry "J" or "red-line" are fully usable.

Contractual Qualifiers-

The legend of contractual qualifiers applied by the laboratory on Form Is is found on page B-20 of SOW ILM05.3

A.2.2 The data assessment is given below and on the attached sheets.

On August 7, 2007, USEPA Region II Removal Support Team 2(RST 2) sampling personnel collected one soil sample from the Frankfort Asbestos Site, Frankfort, Herkimer County, New York. Within twenty-four hours of collection, the sample for TAL Metals was shipped via overnight Federal Express courier to CompuChem a division of Liberty Analytical, Madison Avenue, Cary, North Carolina. The laboratory verified that the sample was received intact and properly custody sealed.

Target Analyte List (TAL) inorganic analyses were performed following the Contract Laboratory Program (CLP) Statement of Work (SOW) number ILM05.3.

Client identification (ID) and laboratory ID numbers are as follows:

<u>Client ID No.</u>	<u>Laboratory ID No.</u>	<u>Matrix</u>	<u>Analysis</u>
FA-S-012A	1354501	Soil	TAL Metals

Title: Evaluation of Inorganic Data for the
 Contract laboratory Program
 Appendix A.2: Data Assessment Narrative

Date: Sep. 2005
 Number: HW-2
 Revision: 13

A.2.2 (continuation)

The soil sample was analyzed within 10 days of sample collection, holding times were not exceeded. The laboratory provided the supporting raw data for this package. This data package contains summary of analytical results, blank results, initial/continuing calibration (ICV/CCV) recovery, spike sample recovery and lab duplicate results, laboratory Control Sample (LCS) recovery. ICV/CCVs were run at appropriate intervals as noted on the Calibration Summary form. All ICV/CCV recoveries are within the acceptable range of $\pm 20\%$. LCS recoveries fall within 80-120%.

The sample was submitted for QA-1 analysis. No field duplicate or MS/MSD samples were collected.

The results presented in the data package are acceptable with the exception noted in the following data assessment narrative.

PERCENT SOLID OF SEDIMENTS:-

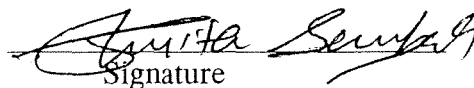
The following analytes were qualified as estimated "J" or rejected "red-lined" in the associated samples due to soil content in the sediments is less than 50%.

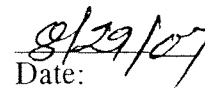
<u>ANALYTE</u>	<u>% SOLIDS</u>	<u>LIMIT</u>	<u>QUALIFIER</u>	<u>ASSOCIATED SAMPLES</u>
All Analytes	between 10-50%	> 50%	"J"	FA-S-012A

A.2.3 Contract Problem/Non-Compliance:

None

Contractor Reviewer:


 Signature


 Date:

Verified by:

 Signature

 Date:

OTHER ANALYTES WORK TABLE

FAS2.2039

Project: Frankfort Asbestos Site

Sampling Date: August 7, 2007

SAMPLE #/CONCENTRATION (MG/KG)

Total Metals	Matrix: Client ID: Lab ID:	Soil FA-S-012A 1354501		
Percent Solids		44.7		
Dilution Factor	CRQL	1.0		
Aluminum	20	8340		
Antimony	6.0	1.2	J	
Arsenic	1.0	11.6		
Barium	20	259		
Beryllium	0.5	0.36	J	
Cadmium	0.5	0.37	J	
Calcium	500	13300		
Chromium	1.0	18.3		
Cobalt	5.0	4.1	J	
Copper	2.5	39.4		
Iron	10	15200		
Lead	1.0	38.4		
Magnesium	500	5250		
Manganese	1.5	734		
Mercury	0.10	0.093	J	
Nickel	4.0	10.6		
Potassium	500	1660		
Selenium	3.5	0.97	J	
Silver	1.0	0.15	J	
Sodium	500	1840		
Thallium	2.5	U		
Vanadium	5.0	17.9		
Zinc	6.0	109		

Inorganic Qualifiers

IDL - Instrument Detection Limit

U - non-detected compound

J - estimated value

B - between the instrument detection limit (IDL)
and the contract required detection limit (CRDL)

R - rejected compound

CompuChem

a Division of Liberty Analytical Corp.

501 Madison Avenue Cary, NC 27513

SDG NARRATIVE

SDG # 13545

The indicated Sample Delivery Group (SDG) consisting of one (1) soil samples were received on August 08, 2007. The samples were intact and in good condition with Chain of Custody (COC) Records.

SAMPLE IDs:

Customer IDs and correlating laboratory IDs are listed on the cover page.

The samples were analyzed, in accordance with EPA - CLP Statement of Work (SOW) document ILM05.4 for mercury and TAL ICP-AES total metals.

EQUATIONS FOR SOLID SAMPLE CALCULATIONS:

Sample calculations for CCN 1354501.

Equation for obtaining metals sample results in mg/kg as presented on FORM I data sheets from ICP instrument acquired results in µg/L (ppb).

$$\frac{C \times V}{W \times S} \times DF$$

Where

C = concentration (µg/L)

V = final volume in liters after sample preparation

W = weight in grams of wet sample

S = % solids/100

DF = dilution factor

Example: barium result µg/L to mg/kg.

$$\frac{1168.025 \mu\text{g/L (C)} \times 0.1 \text{ L (V)}}{1.01 \text{ g (W)} \times 0.447 \text{ (S)}} = 258.72 \text{ mg/kg reported as 259 mg/kg}$$

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV, CCV, & CRI), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within EPA CLP allowable limits.

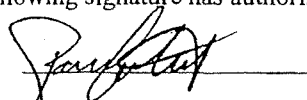
SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSS, LCSSD & PBS) were found to be within acceptable ranges and all field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:

There was no matrix QC associated with this SDG.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.



Paul Cvetich
Inorganic Manager
August 14, 2007

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue Cary, NC 27513

DATA REPORTING QUALIFIERS FOR INORGANICS

On Form I, under the column labeled "C" for concentration qualifier and "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each analyte.

The C (concentration) qualifiers used are:

- U:** This flag indicates the analyte was analyzed for but not detected. This reported value was obtained from a reading that was less than the Instrument Detection Limit (IDL). The IDL will be adjusted to reflect any dilution and, for soils, the percent moisture.
- B:** This flag indicates the analyte was analyzed for and the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

The Q qualifiers used are:

- E:** This flag indicates an estimated value. This flag is used:
1. When the serial dilution (a five fold dilution for CLP and a five fold dilution for SW-846 method 6010B) results are not within 10%. The analyte concentration must be sufficiently high (minimally a factor of 50X above the IDL in the original sample).
- N:** This flag indicates the sample spike recovery is outside of control limits:
- *:** This flag is used for duplicate analysis when the sample and the sample duplicate results are not within control limits.

The extensions: **D, S, SD, L, A**, added to the end of the client ID represent as follows:

- D:** matrix duplicate
S: matrix spike
SD: matrix spike duplicate
L: serial dilution
A: post digestion spike

Method Codes:

- P:** ICP PLASMA
CV: MERCURY COLD VAPOR AA
CA: MIDI-DISTILLATION SPECTROPHOTOMETRIC
MS: ICP MASS SPECTROMETRY
AS: SEMI-AUTOMATED SPECTROPHOTOMETRIC

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FA-S-012A

Lab Name: COMPUCHEM

Contract: _____

Lab Code: LIBRTY Case No.: _____

NRAS No.: _____ SDG NO.: 13545

Matrix (soil/water): SOIL

Lab Sample ID: 1354501

Level (low/med): LOW

Date Received: 08/08/2007

Solids: 44.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8340		J	P
7440-36-0	Antimony	1.2	J		P
7440-38-2	Arsenic	11.6			P
7440-39-3	Barium	259			P
7440-41-7	Beryllium	0.36	J		P
7440-43-9	Cadmium	0.37	J		P
7440-70-2	Calcium	13300			P
7440-47-3	Chromium	18.3			P
7440-48-4	Cobalt	4.1	J		P
7440-50-8	Copper	39.4			P
7439-89-6	Iron	15200			P
7439-92-1	Lead	38.4			P
7439-95-4	Magnesium	5250			P
7439-96-5	Manganese	734			P
7439-97-6	Mercury	0.093	J		CV
7440-02-0	Nickel	10.6			P
7440-09-7	Potassium	1660			P
7782-49-2	Selenium	0.97	J		P
7440-22-4	Silver	0.15	J		P
7440-23-5	Sodium	1840			P
7440-28-0	Thallium	5.5	U		P
7440-62-2	Vanadium	17.9			P
7440-66-6	Zinc	109		V	P

Color Before: BLACK Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments: _____

Compuchem

Attn: Cathy Dover
RFP No. 042

CHAIN OF CUSTODY RECORD

Weston Solutions, Inc.
1090 King Georges Post Road
Edison, NJ 08837

No: FRANK080706
Contact Name: John Brennan

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MSD
134501	FA-S-012A	DEBRIS PILE	TCL-VOCS		8/7/2007	2	4 oz glass	4 C	
	FA-S-012A	DEBRIS PILE	TCL-SVOCS		8/7/2007	1	8 oz glass	4 C	
	FA-S-012A	DEBRIS PILE	TCL-PESTICIDES		8/7/2007	1	8 oz glass	4 C	
	FA-S-012A	DEBRIS PILE	TCL-PCBs		8/7/2007	1	8 oz glass	4 C	
	FA-S-012A	DEBRIS PILE	TCL HERBICIDES		8/7/2007	1	8 oz glass	4 C	
	FA-S-012A	DEBRIS PILE	TAL METALS		8/7/2007	1	8 oz glass	4 C	
<i>1-8oz jar</i>									

Special Instructions:	SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #
-----------------------	--

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
ALL SHIP TO LABS	<i>[Signature]</i>	8/7/07	<i>[Signature]</i>	8/7/07	1700				<i>Jennifer Dover</i>	8/8/07	9:30

FAS2.2044

rec'd @ 3.6 °C



Weston Solutions, Inc.
 Federal Programs Division
 Suite 201
 1090 King Georges Post Road
 Edison, New Jersey 08837-3703
 732-585-4400 • Fax 732-225-7037
 www.westonsolutions.com

REMOVAL SUPPORT TEAM 2
 EPA CONTRACT EP-W-06-072

RST 2-02-F-0325

TRANSMITTAL MEMO

To: Mr. David Rosoff, OSC
 Removal Action Branch
 U.S. EPA Region II

From: Jennifer Sy, Data Reviewer
 RST 2 Region II

Subject: Frankfort Asbestos Site
 Data Validation Assessment

Date: September 20, 2007

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

Asbestos	43 samples
----------	------------
- Matrices and Number of Samples

Soil	42 samples
Rinsate	1 sample
- Sampling Dates: August 1 and 2, 2007

The final data assessment narrative and original analytical data package are attached.

cc: RST SPM: Sayed Iqbal
 RST SITE FILE TDD #: TO-0007-0019
 ANALYTICAL TDD #: TO-0007-0070
 PCS#: 1023



U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: September 19, 2007

TO: David Rosoff, OSC
Removal Action Branch
USEPA Region II

FROM: Jennifer Sy
RST 2 Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated, as applicable:

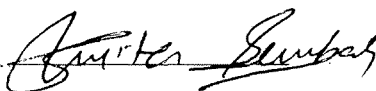
- | | |
|--------------------------|------------------------|
| Data Completeness | Blanks |
| Spectra Matching Quality | DFTPP and BFB Tuning |
| Surrogate Spikes | Chromatography |
| Matrix Spikes/Duplicates | Holding Times |
| Calibration | Compound ID (HSL, TIC) |

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I	II	III	IV
	Asbestos	Asbestos		
	<u>PLM</u>	<u>TEM</u>		
Acceptable as Submitted	<u>X</u>	<u>X</u>	_____	_____
Acceptable with Comments	_____	_____	_____	_____
Unacceptable, Action Pending	_____	_____	_____	_____
Unacceptable	_____	_____	_____	_____

Data Reviewed by: Jennifer Sy Date: 9/19/07

Approved by:  Date: 9/19/07

Area Code/Phone No.: (732) 585-4411

NARRATIVEPCS No. 1023SITE NAME: Frankfort Asbestos SiteFrankfort, New YorkLaboratory Name: EMSL Analytical, Inc.**INTRODUCTION:**

On August 1 and 2, 2007, the USEPA Removal Support Team 2 (RST 2) sampling personnel collected 42 soil and one rinsate sample from the Frankfort Asbestos Site, Frankfort, New York. The soil samples were analyzed for asbestos PLM, EPA Method 600R-93/116 with CARB 425 Prep (Milling) Level B for a target analytical sensitivity 0.1%. One rinsate sample was analyzed for TEM asbestos, EPA Method 100.2. Eleven of the samples analyzed for PLM were also analyzed for TEM by EPA Method 600/R-93/116 with CARB 435 Prep (Milling) Level C for a target analytical sensitivity of 0.01%. The samples were shipped to EMSL Analytical, Inc., Westmont, New Jersey for analysis.

The laboratory's portion of this case consisted of 42 soil, and 1 rinsate sample collected on August 1 and 2, 2007.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of this asbestos data package.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment.

STANDARD OPERATING PROCEDURE

Page 1 of 5

Title: Evaluation of Asbestos Data
Data Assessment Narrative

PCS #: 1023	Site: Frankfort Asbestos Site	
SDG#s: 040718726, 040718809, 040719764, and 040719765	Lab: EMSL Analytical, Inc.	Matrix: Rinsate: 1 Soil: 42
Contractor: WESTON-RST 2	Reviewer: Jennifer Sy	

A.2.1 Validation Flags-

The following flags have been applied in red by the data validator and must be considered by the data user.

J-

This flag indicates the result qualified as estimated.

Red- Line-

A red-line drawn through a sample result indicates an unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data-

The results that do not carry "J" or "red-line" are fully usable.

A.2.2 The data assessment is given below and on the attached sheets.

On August 1 and 2, 2007, USEPA Region II RST 2 sampling personnel collected 42 soil and one rinsate sample from the Frankfort Asbestos Site, located in Frankfort, New York. On August 3 and 4, 2007, the soil and rinsate samples were received by EMSL Analytical Laboratory, 107 Haddon Avenue, Westmont, NJ. The laboratory verified that the samples were received intact and properly custody sealed.

The soil samples were initially dried followed by freezer milling. The milled soil samples were analyzed by PLM, with CARB Level B SOP and EPA Method 600/R-93/116 Method. Any sample with asbestos ranging from <1% to 10% was subject to a 1000 point count. The quantification limit for the method is <0.1%.

Eleven of the 42 soil samples analyzed for PLM, were also analyzed for Transmission Electron Microscopy (TEM) following EPA Method 600/R-93/116 with CARB 435 Prep (Milling) with Level C for 0.01% Target Analytical Sensitivity.

The rinsate sample was prepared and analyzed according to TEM following EPA Method 100.2. Data was reported as millions of fibers per liter.

STANDARD OPERATING PROCEDURE

Page 2 of 5

Title: Evaluation of Asbestos Data
Data Assessment Narrative

A.2.2 (continuation)

Client identification (ID) and laboratory ID numbers are as follows:

EMSL Order: 040718726 – PLM, 040719764-TEM

<u>Client ID No.</u>	<u>Laboratory ID No.</u>	<u>Matrix</u>	<u>Sampling Date</u>	<u>Analysis</u>
FA-DF-005	040718726-0001	Soil	8/1/07	PLM/TEM
	040719764-0001			
FA-DF-010	040718726-0002	Soil	8/1/07	PLM/TEM
	040719764-0002			
FA-FARM-001	040718726-0003	Soil	8/1/07	PLM
FA-FARM-002	040718726-0004	Soil	8/1/07	PLM/TEM
	040719764-0003			
FA-FARM-003	040718726-0005	Soil	8/1/07	PLM/TEM
	040719764-0004			
FA-FARM-017	040718726-0006	Soil	8/1/07	PLM
FA-FP-001	040718726-0007	Soil	8/1/07	PLM
FA-FP-002	040718726-0008	Soil	8/1/07	PLM
FA-FP-003	040718726-0009	Soil	8/1/07	PLM
FA-S-001	040718726-0010	Soil	8/1/07	PLM/TEM
	040719764-0005			
FA-S-002	040718726-0011	Soil	8/1/07	PLM
FA-S-003	040718726-0012	Soil	8/1/07	PLM/TEM
	040719764-0006			
FA-S-004	040718726-0013	Soil	8/1/07	PLM
FA-S-005	040718726-0014	Soil	8/1/07	PLM
FA-S-006	040718726-0015	Soil	8/1/07	PLM/TEM
	040719764-0007			
FA-S-007	040718726-0016	Soil	8/1/07	PLM
FA-S-008	040718726-0017	Soil	8/1/07	PLM
FA-S-009	040718726-0018	Soil	8/1/07	PLM
FA-S-010	040718726-0019	Soil	8/1/07	PLM
FA-S-011	040718726-0020	Soil	8/1/07	PLM
FA-S-012	040718726-0021	Soil	8/1/07	PLM
FA-S-013	040718726-0022	Soil	8/1/07	PLM

EMSL Order: 040718809 – PLM, 040719765-TEM

<u>Client ID No.</u>	<u>Laboratory ID No.</u>	<u>Matrix</u>	<u>Sampling Date</u>	<u>Analysis</u>
FA-FARM-004	040718809-0001	Soil	8/2/07	PLM
FA-FARM-005	040718809-0002	Soil	8/2/07	PLM/TEM
	040719765-0001			

Title: Evaluation of Asbestos Data
Data Assessment Narrative

A.2.2 (continuation)

<u>Client ID No.</u>	<u>Laboratory ID No.</u>	<u>Matrix</u>	<u>Sampling Date</u>	<u>Analysis</u>
FA-FARM-006	040718809-0003	Soil	8/2/07	PLM/TEM
	040719765-0002			
FA-FARM-007	040718809-0004	Soil	8/2/07	PLM
FA-FARM-008	040718809-0005	Soil	8/2/07	PLM
FA-FARM-009	040718809-0006	Soil	8/2/07	PLM
FA-FARM-010	040718809-0007	Soil	8/2/07	PLM
FA-FARM-011	040718809-0008	Soil	8/2/07	PLM
FA-FARM-012	040718809-0009	Soil	8/2/07	PLM
FA-FARM-013	040718809-0010	Soil	8/2/07	PLM
FA-FARM-014	040718809-0011	Soil	8/2/07	PLM
FA-FARM-015	040718809-0012	Soil	8/2/07	PLM/TEM
	040719765-0003			
FA-FARM-016	040718809-0013	Soil	8/2/07	PLM
FA-FARM-018	040718809-0014	Soil	8/2/07	PLM
FA-FP-004	040718809-0015	Soil	8/2/07	PLM
FA-FP-005	040718809-0016	Soil	8/2/07	PLM
FA-FP-006	040718809-0017	Soil	8/2/07	PLM
FA-FP-007	040718809-0018	Soil	8/2/07	PLM/TEM
	040719765-0004			
FA-FP-008	040718809-0019	Soil	8/2/07	PLM
FA-FP-009	040718809-0020	Soil	8/2/07	PLM

EMSL Order: 040718726 - TEM

<u>Client ID No.</u>	<u>Laboratory ID No.</u>	<u>Matrix</u>	<u>Sampling Date</u>	<u>Analysis</u>
RIN-001	040718726-0023	Rinsate	8/1/07	TEM

The 42 soil samples reported non-detect for asbestos. One of the 11 soil samples (FA-DF-005) analyzed for TEM detected one structure of Chrysotile asbestos. The remaining ten soil samples were non-detect for asbestos.

For QC purposes, the laboratory analyzed one lab blank for PLM and TEM. The QC results are acceptable.

The results presented in the data package are acceptable as reported. No qualifications were required.

STANDARD OPERATING PROCEDURE

Page 4 of 5

Title: Evaluation of Asbestos Data
Data Assessment Narrative

A.2.2 (continuation)

ASBESTOS – SOIL AND RINSATE TABULATED RESULTS

Client Sample ID Number	Laboratory Sample ID Number	PLM Results			
		Reporting Limit	% Fibrous	% Non-Fibrous	Asbestos % Type
FA-DF-005	040718726-0001	<0.1%	--	100%	None Detected
FA-DF-010	040718726-0002		--	100%	None Detected
FA-FARM-001	040718726-0003		--	100%	None Detected
FA-FARM-002	040718726-0004		--	100%	None Detected
FA-FARM-003	040718726-0005		--	100%	None Detected
FA-FARM-017	040718726-0006		--	100%	None Detected
FA-FP-001	040718726-0007		--	100%	None Detected
FA-FP-002	040718726-0008		--	100%	None Detected
FA-FP-003	040718726-0009		--	100%	None Detected
FA-S-001	040718726-0010		--	100%	None Detected
FA-S-002	040718726-0011		--	100%	None Detected
FA-S-003	040718726-0012		--	100%	None Detected
FA-S-004	040718726-0013		--	100%	None Detected
FA-S-005	040718726-0014		--	100%	None Detected
FA-S-006	040718726-0015		--	100%	None Detected
FA-S-007	040718726-0016		--	100%	None Detected
FA-S-008	040718726-0017		--	100%	None Detected
FA-S-009	040718726-0018		--	100%	None Detected
FA-S-010	040718726-0019		--	100%	None Detected
FA-S-011	040718726-0020		--	100%	None Detected
FA-S-012	040718726-0021		--	100%	None Detected
FA-S-013	040718726-0022		--	100%	None Detected
FA-FARM-004	040718809-0001		--	100%	None Detected
FA-FARM-005	040718809-0002		--	100%	None Detected
FA-FARM-006	040718809-0003		--	100%	None Detected
FA-FARM-007	040718809-0004		--	100%	None Detected
FA-FARM-008	040718809-0005		--	100%	None Detected
FA-FARM-009	04071889-0006		--	100%	None Detected
FA-FARM-010	040718809-0007		--	100%	None Detected
FA-FARM-011	040718809-0008		--	100%	None Detected
FA-FARM-012	040718809-0009		--	100%	None Detected
FA-FARM-013	040718809-0010		--	100%	None Detected
FA-FARM-014	040718809-0011		--	100%	None Detected
FA-FARM-015	040718809-0012	--	100%	None Detected	
FA-FARM-016	040718809-0013	--	100%	None Detected	
FA-FARM-018	040718809-0014	--	100%	None Detected	
FA-FP-004	040718809-0015	--	100%	None Detected	

EMSL ASBESTOS DATA PACKAGE

(NVLAP 101048-0)

EMSL ORDER IDS

040718726,18809,19764,19765

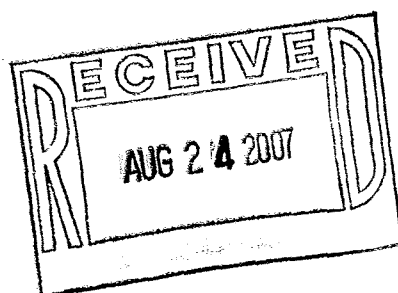
WESTON SOLUTIONS

RFP# 036

TDD# TO-0007-0019 QA-2

PREPARED BY: STEPHEN SIEGEL, CIH

DATE: August 21, 2007



Sample Narrative-
EMSL Order IDs 040718726,18809,19764,19765

On August 3 and 4th 2007 EMSL Analytical (Westmont, NJ) received 42 soil samples and 1 rinsate solution from Weston Solutions (Edison, NJ) for Asbestos content analysis via PLM CARB 435 Level B. These samples were from RFP# 036. The samples were logged in following normal lab procedures.

PLM-CARB 435

All samples were logged in and then were dried followed by freezer milling. The milled soil samples were then analyzed via polarized light microscopy (PLM) using the CARB Level B SOP and the procedures from EPA 600/R-93/116 method. All data was reported on a % asbestos basis. Per the CARB 435 Level B SOP method any sample having asbestos content (visual estimation) ranging from <1 to 10% was subject to a 1000 point count. The limit of quantification for this method is <0.1%. Four samples were reanalyzed for QC purposes with acceptable results.

TEM Carb Level C

Weston Solutions selected 11 soil samples from these two jobs for TEM Carb Level C analysis. These samples were obtained from the milled PLM samples previously analyzed. The sample was prepared for TEM analysis by weighing a small fraction of the sample (approx. 0.01 g) and sonicating in 100 ml of deionized water. Aliquot filtration was performed for each sample with subsequent preparation of the filter for TEM analysis per EMSL TEM Carb Level C SOP. These samples were then analyzed by Transmission Electron Microscopy (TEM) via EMSL Method TEM Carb Level C. All data was reported on as percent asbestos with fiber size classification. The limit of quantification for this method is <0.01%. One lab preparation blank and intra-analysis was analyzed for QC purposes with acceptable data.

Water (Rinsate) Sample

This project also consisted of 1 water samples submitted for asbestos structure counting analysis. Samples were prepared and analyzed by TEM following EPA Method TEM 100.2 for Drinking Water analysis. All data was reported as millions of fibers per liter. One lab preparation blank was analyzed for QC purposes with acceptable data.



Stephen Siegel, CIH
Asbestos Lab Manager, EMSL-Westmont, NJ

08/21/07
Date



EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: westmontasbiab@EMSL.com

Attn: **John Brennan**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837-3703

Customer ID: RFWE53
 Customer PO:
 Received: 08/03/07 10:00 AM
 EMSL Order: 040718726

Fax: (732) 225-7037 Phone: (732) 225-6116
 Project:

EMSL Proj:
 Analysis Date: 8/10/2007
 Report Date: 8/10/2007

PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling). Level B for 0.1% Target Analytical Sensitivity

Sample	Location	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
FA-DF-005 040718726-0001	DEBRIS PILE	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-DF-010 040718726-0002	DEBRIS PILE	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
IRM-001 26-0003	OLD DEBRIS PILE	Black <i>Brown</i> Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-002 040718726-0004	OLD DEBRIS PILE	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-003 040718726-0005	OLD DEBRIS PILE	Black <i>Brown</i> Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-017 040718726-0006	BARN	Black <i>Brown</i> Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FP-001 040718726-0007	FLOOD PLAIN	Black <i>Brown</i> Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FP-002 040718726-0008	FLOOD PLAIN	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FP-003 040718726-0009	FLOOD PLAIN	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected

Analyst(s)

 James Beard (22)

Stephen Siegel

 Stephen Siegel, CIH, Laboratory Manager
 or other approved signatory

This report relates only to the samples listed above and may not be reproduced except in full, without EMSL's written approval. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for sample collection activities or method limitations. Some samples may contain asbestos fibers below the resolution limit of PLM. EMSL recommends that samples reported as none detected or less than the limit of detection undergo additional analysis via TEM. Samples received in good condition unless otherwise noted.



EMSL Analytical, Inc.
 107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: westmontaslab@EMSL.com

Attn: **John Brennan**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837-3703

Customer ID: RFEW53
 Customer PO:
 Received: 08/03/07 10:00 AM
 EMSL Order: 040718726

Fax: (732) 225-7037 Phone: (732) 225-6116
 Project:

EMSL Proj:
 Analysis Date: 8/10/2007
 Report Date: 8/10/2007

**PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB
 435 Prep (Milling). Level B for 0.1% Target Analytical Sensitivity**

Sample	Location	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
FA-S-001 040718726-0010	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-S-002 040718726-0011	SOIL	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-S-003 040718726-0012	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-S-004 040718726-0013	SOIL	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-S-005 040718726-0014	SOIL	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-S-006 040718726-0015	SOIL	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-S-007 040718726-0016	SOIL	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-S-008 040718726-0017	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-S-009 040718726-0018	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected

Analyst(s)
 Delores Beard (22)

Stephen Siegel, CIH, Laboratory Manager
 or other approved signatory

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EMSL Analytical, Inc.

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1090 King Georges Post Road
Suite 201
Edison, NJ 08837-3703

Customer ID: RFW53
 Customer PO:
 Received: 08/03/07 10:00 AM
 EMSL Order: 040718726

Fax: (732) 225-7037 Phone: (732) 225-6116

EMSL Proj:
 Analysis Date: 8/10/2007
 Report Date: 8/10/2007

Project:

**PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB
 435 Prep (Milling). Level B for 0.1% Target Analytical Sensitivity**

Sample	Location	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
FA-S-010 040718726-0019	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-S-011 040718726-0020	SOIL	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-S-012 040718726-0021	SOIL	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-S-013 040718726-0022	SOIL	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected

Analyst(s)

Chris Beard (22)

Stephen Siegel, CIH, Laboratory Manager
 or other approved signatory

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EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: westmontaslab@EMSL.com

Attn: **John Brennan**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837-3703

Customer ID: RFWE53
 Customer PO: 0059547
 Received: 08/04/07 12:45 PM
 EMSL Order: 040718809

Fax: (732) 225-7037 Phone: (732) 225-6116
 Project:

EMSL Proj:
 Analysis Date: 8/11/2007
 Report Date: 8/11/2007

PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling). Level B for 0.1% Target Analytical Sensitivity

Sample	Location	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
FA-FARM-004 040718809-0001	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-005 40718809-0002	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-006 40718809-0003	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-007 40718809-0004	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-008 40718809-0005	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-009 040718809-0006	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-010 040718809-0007	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-011 040718809-0008	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-012 040718809-0009	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected

Analyst(s)
 Delores Beard (20)

Stephen Siegel
 Stephen Siegel, CIH, Laboratory Manager
 or other approved signatory

This report relates only to the samples listed above and may not be reproduced except in full, without EMSL's written approval. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for sample collection activities or method limitations. Some samples may contain asbestos fibers below the resolution limit of PLM. EMSL recommends that samples reported as none detected or less than the limit of detection undergo additional analysis via TEM. Samples received in good condition unless otherwise noted.



EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: westmontslab@EMSL.com

Attn: **John Brennan**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837-3703

Customer ID: RFEW53
 Customer PO: 0059547
 Received: 08/04/07 12:45 PM
 EMSL Order: 040718809

Fax: (732) 225-7037 Phone: (732) 225-6116
 Project:

EMSL Proj:
 Analysis Date: 8/11/2007
 Report Date: 8/11/2007

PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling). Level B for 0.1% Target Analytical Sensitivity

Sample	Location	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
FA-FARM-013 040718809-0010	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-014 040718809-0011	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-015 040718809-0012	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-016 040718809-0013	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FARM-018 040718809-0014	FARM	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FP-004 040718809-0015	FLOOD PLAIN	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FP-005 040718809-0016	FLOOD PLAIN	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FP-006 040718809-0017	FLOOD PLAIN	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
FA-FP-007 040718809-0018	FLOOD PLAIN	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected

Analyst(s)
 Robert Beard (20)

Stephen Siegel, CIH, Laboratory Manager
 or other approved signatory

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EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: westmontaslab@EMSL.com

Attn: **John Brennan**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837-3703

Customer ID: RFWE53
 Customer PO: 0059547
 Received: 08/04/07 12:45 PM
 EMSL Order: 040718809

Fax: (732) 225-7037 Phone: (732) 225-6116
 Project:

EMSL Proj:
 Analysis Date: 8/11/2007
 Report Date: 8/11/2007

PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling). Level B for 0.1% Target Analytical Sensitivity

Sample	Location	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
EA-FP-008 040718809-0019	FLOOD PLAIN	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected
EA-FP-009 040718809-0020	FLOOD PLAIN	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	None Detected

Analyst(s)

 Delores Beard (20)

Stephen Siegel

 Stephen Siegel, CIH, Laboratory Manager
 or other approved signatory

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EMSL Analytical, Inc.

107 Haddon Avenue, Westmont, NJ 08108 Phone: 800-220-3675 Fax: 856-858-4960

Client: Weston Solutions (King Georges Post)
 1090 King Georges Post Road
 Suite 201
 Edison, NJ 08837-3703

EMSL Reference: 040719765

Date Received: 8/14/07

Attention: Smita Sumbaly

Date Analyzed: 08/19/07

Fax: 732-225-7037

Phone: 732-225-6116

Date Reported: 08/21/07

Project: RFP 036

**Asbestos Analysis of Soil via EPA 600/R-93/116 Method Utilizing
 Analytical Electron Microscopy (Section 2.5) with CARB 435 Prep (Milling)
 Level C for 0.01% Target Analytical Sensitivity**

Client Sample ID	EMSL Sample ID	Asbestos Type(s)	# of Asbestos Structures Detected	Analytical Sensitivity %	Asbestos Weight %	Comments
FA-FARM-005	040719765-0001	None Detected	0	0.01	<0.01	✓
FA-FARM-006	040719765-0002	None Detected	0	0.01	<0.01	✓
FA-FARM-015	040719765-0003	None Detected	0	0.01	<0.01	✓
FA-FP-007	040719765-0004	None Detected	0	0.01	<0.01	✓

Debbie Little

Analyst

Stephen Siegel

Stephen Siegel, CIH or Approved EMSL Signatory

EMSL maintains liability limited to cost of analysis. This method requires the laboratory to analyze the sample until the first fiber found comprises 5% of the total mass. Due to the size and mass of different asbestos fibers, the analytical sensitivity will vary between samples and may prevent the laboratory from achieving the target sensitivity on all samples. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL is not responsible for sample collection activities or analytical method limitations. Interpretation and use of results are the responsibility of the client.



EMSL Analytical Inc

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: westmont@emsl.com

Attn: **John Brennan**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837-3703

Customer ID: RFW53
 Customer PO:
 Received: 08/03/07 10:00 AM
 EMSL Order: 040718726

Fax: (732) 225-7037 Phone: (732) 225-6116
 Project:

EMSL Proj:
 Analysis Date: 8/13/2007
 Report Date: 8/13/2007

Determination of Asbestos Structures over 10um in Length in Waste Water Performed by the EPA 100.2 Method

Sample ID	Sample Prep Date	# Fibers Asbestos	# Fibers Non-Asbestos	Type(s) Of Asbestos	Analytical Sensitivity (MFL)	Confidence Limits	Concentration Of Asbestos Fibers (MFL)	Comments
IN-001 40718726-0023	8/3/2007	0	0		0.11	0.00-0.40	<0.11	/

Analyst(s)

Gabe Agnello (1)

Stephen Siegel, CIH, Laboratory Manager
 or other approved signatory

Sample collection and containers provided by the client, acceptable bottle blank level is defined as <=0.01MFL> 10um. ND=None Detected. This report may not be reproduced, except in full, without written permission by EMSL Analytical, Inc. The test results contained within this report meet the requirements of NELAC unless otherwise noted. This report relates only to the samples reported above. Samples received in good condition unless otherwise noted

ACCREDITATIONS: NJ Lab ID: 04006, NYS ELAP Lab ID: 10872, NVLAP 101048-0, FL Lab ID: E87788

EMSL Analytical, Inc.

107 Haddon Avenue, Westmont, NJ 08108 Phone: 800-220-3675 Fax: 856-858-4960

Client: Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837-3703

EMSL Reference: 040719764

Date Received: 8/14/07

Attention: Smita Sumbaly

Date Analyzed: 08/19/07

Fax: 732-225-7037

Phone: 732-225-6116

Date Reported: 08/01/54

Project: RFP 036

**Asbestos Analysis of Soil via EPA 600/R-93/116 Method Utilizing
Analytical Electron Microscopy (Section 2.5) with CARB 435 Prep (Milling)
Level C for 0.01% Target Analytical Sensitivity**

Client Sample ID	EMSL Sample ID	Asbestos Type(s)	# of Asbestos Structures Detected	Analytical Sensitivity %	Asbestos Weight %	Comments
FA-DF-005	040719764-0001	Chrysotile	1	0.01	<0.01	
FA-DF-010	040719764-0002	None Detected	0	0.01	<0.01	
FA-FARM-002	040719764-0003	None Detected	0	0.01	<0.01	
FA-FARM-003	040719764-0004	None Detected	0	0.01	<0.01	
FA-S-001	040719764-0005	None Detected	0	0.01	<0.01	
FA-S-003	040719764-0006	None Detected	0	0.01	<0.01	
FA-S-006	040719764-0007	None Detected	0	0.01	<0.01	

Debbie Little

Analyst

Stephen Siegel

Stephen Siegel, CIH or Approved EMSL Signatory

EMSL maintains liability limited to cost of analysis. This method requires the laboratory to analyze the sample until the first fiber found compromises 5% of the total mass. Due to the size and mass of different asbestos fibers, the analytical sensitivity will vary between samples and may prevent the laboratory from achieving the target sensitivity on all samples. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL is not responsible for sample collection activities or analytical method limitations. Interpretation and use of results are the responsibility of the client.

04071805

EMSL

Attn: Scott Ross
RFP No. 036
PO No. 0059547

CHAIN OF CUSTODY RECORD

Weston Solutions, Inc.
1090 King Georges Post Road
Edison, NJ 08837

No: FRANK080407
Contact Name: John Brennan

FAS2.2064

Lab #	Sample #	Location	Analyses	Matrix	Collected	Container	Preservative	Sample Time	MS/MSD
	FA-FARM-004	FARM	LEAD	SOIL	8/2/2007			09:20	
	FA-FARM-004	FARM	ASBESTOS (PLM) <i>BSB</i>	SOIL	8/2/2007			09:20	
	FA-FARM-005	FARM	LEAD	SOIL	8/2/2007			09:15	Y
	FA-FARM-005	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:15	
	FA-FARM-006	FARM	LEAD	SOIL	8/2/2007			09:22	
	FA-FARM-006	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:22	
	FA-FARM-007	FARM	LEAD	SOIL	8/2/2007			09:10	
	FA-FARM-007	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:10	
	FA-FARM-008	FARM	LEAD	SOIL	8/2/2007			09:10	
	FA-FARM-008	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:10	
	FA-FARM-009	FARM	LEAD	SOIL	8/2/2007			09:05	
	FA-FARM-009	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:05	
	FA-FARM-010	FARM	LEAD	SOIL	8/2/2007			09:00	
	FA-FARM-010	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:00	
	FA-FARM-011	FARM	LEAD	SOIL	8/2/2007			09:07	
	FA-FARM-011	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:07	
	FA-FARM-012	FARM	LEAD	SOIL	8/2/2007			09:12	
	FA-FARM-012	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:12	
	FA-FARM-013	FARM	LEAD	SOIL	8/2/2007			09:06	
	FA-FARM-013	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:06	

Special Instructions: Run samples selected for "Asbestos (PLM)" via CARB 435 - 1000 Point Count with analytical sensitivity below 0.25%. Following review of the results by WESTON, several samples will be selected for TEM analysis. ONE WEEK VERBAL TAT.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received	Date	Time
<i>All Lab. Courier pickup</i>	<i>Samuel Boyd</i>	<i>8/3/07</i>	<i>Adrienne</i>	<i>8/3/07</i>	<i>2:40</i>				<i>WESTON, NJ</i>		
<i>EMSL Lab Change</i>	<i>Adrienne</i>	<i>8/3/07</i>									

@

SAMPLES ACCEPTED FOR ANALYSIS BY WESTON ANALYTICAL INC

18807

EMSL

CHAIN OF CUSTODY RECORD

No: FRANK080407

Attn: Scott Ross
RFP No. 036
PO No. 0059547

Weston Solutions, Inc.
1090 King Georges Post Road
Edison, NJ 08837

Contact Name: John Brennan

Lab #	Sample #	Location	Analyses	Matrix	Collected	Container	Preservative	Sample Time	MS/MSD
	FA-FARM-014	FARM	LEAD	SOIL	8/2/2007			09:00	
	FA-FARM-014	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:00	
	FA-FARM-015	FARM	LEAD	SOIL	8/2/2007			09:00	
	FA-FARM-015	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:00	
	FA-FARM-016	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:05	
	FA-FARM-018	FARM	LEAD	SOIL	8/2/2007			09:25	
	FA-FARM-018	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:25	
	FA-FP-004	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:05	
	FA-FP-004	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:05	
	FA-FP-005	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:10	
	FA-FP-005	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:10	
	FA-FP-006	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:15	
	FA-FP-006	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:15	
	FA-FP-007	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:20	
	FA-FP-007	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:20	
	FA-FP-008	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:20	
	FA-FP-008	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:20	
	FA-FP-009	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:18	
	FA-FP-009	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:18	

Special Instructions: Run samples selected for "Asbestos (PLM)" via CARB 435 - 1000 Point Count with analytical sensitivity below 0.25%. Following review of the results by WESTON, several samples will be selected for TEM analysis. ONE WEEK VERBAL TAT.	SAMPLES TRANSFERRED FROM
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received By	Date	Time
All Lab. samples pick up	Carroll	8/2/07	Ashley	8/3/07	2:40						

WESTON SOLUTIONS
MONTICELLO NJ

SAMPLES ACCE FOR ANALYSIS EMSL ANALYTIC PAS2.2065

04011

EMSL
 Attn: Scott Ross
 RFP No. 036
 PO No. 0059547

CHAIN OF CUSTODY RECORD
 Weston Solutions, Inc.
 1090 King Georges Post Road
 Edison, NJ 08837

No: FRANK080207
 Contact Name: John Brennan

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MSD
	FA-DF-010	DEBRIS PILE	LEAD	SOIL	8/1/2007	1			
	FA-DF-010	DEBRIS PILE	TCL SVOCs	SOIL	8/1/2007	1			
	FA-DF-010	DEBRIS PILE	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-DF-011	DEBRIS PILE	LEAD	SOIL	8/1/2007	1			
	FA-DF-011	DEBRIS PILE	TCL SVOCs	SOIL	8/1/2007	1			
	FA-FARM-001	OLD DEBRIS PILE	LEAD	SOIL	8/1/2007	1			
	FA-FARM-001	OLD DEBRIS PILE	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-FARM-002	OLD DEBRIS PILE	LEAD	SOIL	8/1/2007	1			
	FA-FARM-002	OLD DEBRIS PILE	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-FARM-003	OLD DEBRIS PILE	LEAD	SOIL	8/1/2007	1			
	FA-FARM-003	OLD DEBRIS PILE	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-FARM-017	BARN	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-FP-001	FLOOD PLAIN	LEAD	SOIL	8/1/2007	1			
	FA-FP-001	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-FP-002	FLOOD PLAIN	LEAD	SOIL	8/1/2007	1			
	FA-FP-002	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-FP-003	FLOOD PLAIN	LEAD	SOIL	8/1/2007	1			
	FA-FP-003	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-001	SOIL	LEAD	SOIL	8/1/2007	1			

Special Instructions: Run samples selected for "Asbestos (PLM)" via CARB 435 - 1000 Point Count with analytical sensitivity below 0.25%. Following review of the results by WESTON, several samples will be selected for TEM analysis. ONE WEEK VERBAL TAT.	SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #
---	--

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
<i>ALL SWIP / TLAD</i>	<i>[Signature]</i>	<i>8/2/07</i>	<i>[Signature]</i>	<i>8/2/07</i>	<i>1600</i>						

Oh. 724

EMSL

Attn: Scott Ross
RFP No. 036
PO No. 0059547

CHAIN OF CUSTODY RECORD

Weston Solutions, Inc.
1090 King Georges Post Road
Edison, NJ 08837

No: FRANK080207

Contact Name: John Brennan

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MSD
	FA-S-007	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-008	SOIL	LEAD	SOIL	8/1/2007	1			
	FA-S-008	SOIL	TCL SVOCs	SOIL	8/1/2007	1			
	FA-S-008	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-009	SOIL	LEAD	SOIL	8/1/2007	1			
	FA-S-009	SOIL	TCL SVOCs	SOIL	8/1/2007	1			
	FA-S-009	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-010	SOIL	LEAD	SOIL	8/1/2007	1			
	FA-S-010	SOIL	TCL SVOCs	SOIL	8/1/2007	1			
	FA-S-010	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-011	SOIL	LEAD	SOIL	8/1/2007	1			
	FA-S-011	SOIL	TCL SVOCs	SOIL	8/1/2007	1			
	FA-S-011	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-012	SOIL	LEAD	SOIL	8/1/2007	1			
	FA-S-012	SOIL	TCL SVOCs	SOIL	8/1/2007	1			
	FA-S-012	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-013	SOIL	LEAD	SOIL	8/1/2007	1			
	FA-S-013	SOIL	TCL SVOCs	SOIL	8/1/2007	1			
	FA-S-013	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			

Special Instructions: Run samples selected for "Asbestos (PLM)" via CARB 435 - 1000 Point Count with analytical sensitivity below 0.25%. Following review of the results by WESTON, several samples will be selected for TEM analysis. ONE WEEK VERBAL TAT.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All SIMP PLM	[Signature]	8/2/07	[Signature]	8/2/07	1000						

Precautionary Measures Against Hidden Hazards in Laboratory Samples

Notice to Laboratory Personnel

Background

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980, as amended, Section 311 of the Clean Water Act (CWA), as amended, by the Oil Pollution Act of 1990 (OPA), Subtitle I of the Resource Conservation and Recovery Act (RCRA), and pursuant to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and Presidential Decision Document (PDD) #39, the Environmental Protection Agency (EPA) has been delegated the responsibility to undertake response actions with respect to, as a general matter, the release or threat of release of oil, petroleum products, hazardous substances, or pollutants and contaminants, that pose an actual or potential threat to human health or welfare, or to the environment. EPA is responsible for conducting evaluations and cleanups of uncontrolled hazardous substance disposal sites and placing those that are considered to pose a significant threat to the public health or the environment on the National Priorities List (NPL).

EPA's successful implementation of these emergency response action responsibilities requires that technical support capabilities be provided in the form of a contracted Removal Support Team (RST) for EPA. The WESTON RST Contract 68-W-00-113, provides this support to EPA Region II.

Hazard Communication

The samples which accompany this notice were shipped to your laboratory for analysis in accordance with applicable D.O.T. or IATA Regulations and were collected by the WESTON RST and tentatively designated by the field response team, as either environmental or hazardous material samples.

In general, *Environmental Samples* are collected from streams, farm ponds, small lakes, wells, and off-site soil locations that are not reasonably expected to be contaminated with hazardous materials. Samples of on-site soils or water, and materials collected from drums, bulk storage tanks, obviously contaminated ponds, impoundments, lagoons, pools, and leachates from hazardous waste sites are considered *Hazardous Samples*. Samples which are obtained from a known radioactive material contamination site or which demonstrate beta or gamma activity greater than three times average background as scanned with a radiation survey meter are considered *Radioactive Samples*.

The samples which accompany this notice were tentatively classified by the field response team as:

___ Environmental Hazardous ___ Comb. (Envir.&Haz.) ___ Radioactive

The field team which collected the samples, used the following Level(s) of personal protection as designated by EPA and OSHA conventions to provide protection against possible radiological or chemical exposure:

___ Level A ___ Level B Level C ___ Level D

This information is intended for use as a guide for the safe handling of these laboratory samples in accordance with EPA and OSHA regulations. The Sample classification(s) and Levels of personal protection used by the WESTON RST are not represented to be, nor are they adequate or applicable in all situations, nor are they intended to serve as substitutes for professional/personal judgement

Laboratory Name: EMSL ANALYTICAL RFP No. 036

Prepared by: JH Date 8/2/07

WESTON Office: Region II RST, Edison, NJ; Phone: 732-225-6116 FAX: 732-225-7037

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DATE: SEP 20 2007

SUBJECT: Request for a Removal Action at the Frankfort Asbestos Site, Frankfort, Herkimer County, New York

FROM: Jack D. Harmon, On-Scene Coordinator
Removal Action Section

M. J. Harmon
for

TO: George Pavlou, Director
Emergency and Remedial Response Division

THRU: Joseph D. Rotola, Chief
Removal Action Branch

Site ID: ZG

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed removal action described herein for the Frankfort Asbestos Site ("Site"), located at 3720 Southside Road in Frankfort, Herkimer County, New York, 13340.

The total project ceiling requested in this Action Memorandum is \$144,000 of Direct Extramural Funds, of which \$115,000 will be funded from the Regional removal advice of allowance to address threats posed by illegal dumping and abandonment of asbestos containing material ("ACM") on the Site. Conditions at the Site meet the criteria for a removal action under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, ("CERCLA"), 42 U.S.C. §9601 to 9675, as documented in Section 300.415(b)(2) of the National Contingency Plan ("NCP").

The Site is not on the National Priorities List ("NPL") and there are no nationally significant or precedent-setting issues associated with the proposed response.

II. SITE CONDITIONS AND BACKGROUND

The Comprehensive Environmental Response, Compensation, and Liability Information System identification number for the Site is NYN000206203. The proposed removal action is considered time-critical.

A. Site Description

1. Removal site evaluation ("RSE")

The United States Environmental Protection Agency's ("EPA's") Removal Action Branch ("RAB") received a request from the EPA Office of Criminal Enforcement, Criminal Investigations Division ("CID") on June 5, 2007 to determine whether conditions at the Site warranted a CERCLA removal action (see Appendix A). The Site is located in a rural area at 3720 Southside Road in Frankfort, New York (see Figure 1 in Attachment 1). The 1.75-acre Site is part of a larger 192-acre former dairy farm. The Site consists of a large pile of shredded building debris, approximately 50,000 square feet in area and up to 20 feet high. Upon this pile are 12 to 15 smaller piles of the same material. The entire pile of shredded building debris has been determined to represent approximately 56,000 cubic yards of material and is known to contain ACM. This material was disposed of on the property illegally in 2006.

On November 14, 2006, EPA-CID and representatives from the National Enforcement Investigations Center ("NEIC") collected samples of the debris piles at the Site. Samples were collected from broken tiles, transite, shingles, cement sheeting as well as dirt and other miscellaneous debris. A total of 16 representative samples were collected during the sampling event. Of the 16 samples, nine were found to contain asbestos at concentrations greater than 1%, with the highest concentration being 21% chrysotile asbestos. All of these samples were made up of either tile fragments or cementitious wallboard. According to the National Emissions Standards for Hazardous Air Pollutants ("NESHAPs"), tile is considered to be Category I non friable ACM. This material becomes Regulated Asbestos Containing Material ("RACM") if: 1) it has become friable or 2) if it will be or has been subjected to sanding, grinding, cutting or abrading. Because of the condition of the building materials and the demolition process the material was put through, it is reasonable and appropriate to assume that the material in the pile has become friable.

There is a release or a potential release and a continuing threat of release of CERCLA designated hazardous substances at the Site, which is a facility under section 101(9) of CERCLA. The ACM in the pile presents a potential public health threat. Persons visiting or trespassing on the Site could be exposed to the asbestos in the pile. The property is not fenced and access is unrestricted. The ACM pile is located within 100 feet of Southside Road and in the flood plain of the Mohawk River. Reportedly the pile was subject to erosion during the spring floods this year. The Site experiences frequent moderate to heavy winds from the west and, because the pile is not covered, exposure to these windy conditions may be resulting in the transportation of asbestos fibers to properties and receptors downwind. The density of residential properties increases to the east into the Village of Frankfort approximately one-half mile away. Frankfort

Township contains approximately 7,500 residents. The closest residence to the Site is across Southside Road approximately 100 feet to the south.

Between July 31 and August 2, 2007, EPA's RAB conducted a removal assessment of the Site and noted the presence of leachate emanating from the northwest toe of the pile. This leachate had a strong sulfurous odor and had caused stressed vegetation and a bird kill in its path. EPA's removal assessment included the collection of soil samples around the pile to determine if contaminants suspected of being in the pile had migrated into surrounding areas via wind or water pathways. EPA is currently awaiting the results of the analysis of these samples.

Based on the available information, a CERCLA removal action is warranted at the Site. The known key problem areas at the Site include a large volume of exposed, friable ACM.

2. Physical location

The debris disposal area is located at 3720 Southside Road (Old NYS Route 5S), approximately 1.25 miles northwest of Frankfort, Herkimer County, New York. Southside Road is a heavily traveled highway between the Town of Ilion and Utica. The debris disposal area forms a wedge-shaped area approximately 500 feet x 150 feet and 20 feet at its deepest point. This area extends through the flood plain and into the Mohawk River (see Figure 2 in Attachment 1). Surrounding land use is a mixture of farmland and residential. The population within one-half mile of the Site is approximately 2,537 persons.

3. Site characteristics

The Site is located in a rural area outside the Village of Frankfort, New York. The Site includes a portion of a parcel of land adjacent to the Erie Canal that has been filled in with construction and demolition debris. The area of fill containing ACM encompasses approximately 1.75-acres and has an estimated volume of 56,000 cubic yards. The area is mainly flat except for the presence of 12 to 15 small to medium sized debris piles. The disposal area extends to the bank of the Mohawk River.

The removal action proposed in this Action Memorandum is the first for the Site.

4. Release or threatened release into the environment of a hazardous substance, or pollutant, or contaminant

The following hazardous substance has been identified by analysis:

Hazardous Substance

Chrysotile Asbestos

**Statutory Source for Designation as
a Hazardous Substance Under CERCLA**Clean Water Act - Section 307(a)
Clean Air Act - Section 112

When friable, asbestos is designated as a CERCLA hazardous substance under 40 CFR Table 302.4. Friability is the ease with which a material can be crumbled, pulverized or reduced to powder when dry, by hand pressure. The degree of friability of the asbestos containing material determines the potential for fiber release to the air. Once released, asbestos fibers have the ability to remain entrained in the air for extended periods of time.

Samples of the suspect ACM were collected by the NEIC on November 14, 2006. Representative samples of floor tiles, transite, corrugated cement sheeting, shingles, soil and debris were selected for sampling. A total of 16 samples were collected during this sampling event. Of the 16 samples, nine samples had asbestos in amounts greater than 1%, with the highest concentration being 21% chrysotile asbestos.

The Site contains an estimated 56,000 cubic yards of uncovered ACM. The ACM in the pile presents a potential public health threat to persons visiting or trespassing on the Site. The property is currently not fenced and access is unrestricted. The ACM pile is located within 100 feet of Southside Road and in the flood plain of the Mohawk River. Reportedly the pile was subject to erosion during the spring floods this year. The Site experiences frequent moderate to heavy winds from the west and, because the pile is not covered, exposure to these windy conditions may have resulted in the transport of asbestos fibers to adjacent properties and receptors downwind. The closest residential dwelling is located approximately 100 feet to the east.

5. NPL status

At the present time, the Site is not on the NPL and there are no efforts underway to include the Site on the NPL.

6. Maps, pictures and other graphic representations

Figures 1 and 2, as well as site photographs, are included as Appendix B.

B. Other Actions to Date**1. Previous actions**

EPA-CID, NEIC and NYSDEC visited the Site on November 14, 2006 to collect samples of suspected ACM from demolition debris illegally disposed along an embankment along Southside Road. The analytical results obtained from the demolition debris, which included suspected floor tiles, transite, corrugated cement sheeting, shingles, soil and debris revealed nine samples containing up to 21% chrysotile asbestos.

2. Current actions

There have been no current actions to secure or remediate the Site. The proposed removal action is an interim measure to stabilize the threats posed by the Site while negotiations continue with responsible parties. EPA's work will consist of leveling the 12 to 15 debris piles and installing a durable synthetic liner cover over the entire demolition debris disposal area to prevent continued migration of ACM.

C. State and Local Authorities' Roles

1. State and local actions to date

There are no actions being undertaken by either the State or local agencies.

2. Potential for continued State/local response

There are no actions by any State or local agency anticipated at the Site.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the Site meet the requirements of Section 300.415(b)(2) of the NCP for the undertaking of a CERCLA removal action. Factors from the NCP that support conducting a removal action at the Site are provided below.

A. Threats to Public Health or Welfare

(i) Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances, or pollutants, or contaminants;

There is a potential threat to human health posed by the ACM that has been disposed of on the Site. The property is currently unfenced and access unrestricted. Persons

trespassing on the Site will come in direct contact with ACM present in the debris disposal area resulting in possible inhalation of asbestos fibers and the contamination of personnel clothing.

The ACM disposal area is located within 100 feet of Southside Road and in the flood plain of the Mohawk River. Reportedly, portions of the debris pile have been subject to erosion during the spring floods this year. The Site experiences frequent moderate to heavy winds from the west and, because the pile is not covered, exposure to these windy conditions may be resulting in the transportation of asbestos fibers to properties and receptors downwind. During periods of excessive wind, the potential exists for passing motorists traveling Old Route 5S to be exposed to asbestos-containing dust migrating across the roadway.

Friable asbestos is a known human carcinogen. Inhalation of asbestos is the primary route of exposure. Two types of cancers are associated with asbestos; mesothelioma, cancer of the pleural lining, and lung cancer, a malignant tumor of the bronchi. In addition to the cancer threat, asbestos may cause asbestosis, which is a scarring of lung tissue that diminishes the elasticity of the tissue, resulting in poor respiratory function.

(iv) High levels of hazardous substances, or pollutants, or contaminants in soils largely at or near the surface, that may migrate;

Sampling within various portions of the demolition debris fill area indicated the presence of chrysotile asbestos at concentrations as high as 21%. The perimeter of the fill area is located within close proximity to the Mohawk River or adjacent pastures. Because of seasonal climatic conditions (i.e., rain, snow, wind), the potential exists for asbestos-contaminated material to migrate into non-impacted portions of the property. EPA is currently awaiting the analytical results from samples collected adjacent to the identified fill area.

(v) Weather conditions that may cause hazardous substances, or pollutants, or contaminants to migrate or be released; and

Migration pathways exist from surface water runoff via rain and snowmelt as well as from airborne ACM fibers transported by the prevailing westerly winds. The ACM disposal area is located within 100 feet of Southside Road and in the flood plain of the Mohawk River. Reportedly, portions of the debris pile have been subject to erosion during the spring floods this year. Additional flooding events could result in the transport of asbestos and asbestos-containing debris further downstream. If deposited along the shoreline, the ACM fibers can become airborne after drying.

(vii) The availability of other appropriate Federal or State response mechanisms to respond to the release.

EPA is the only government agency capable of taking timely and appropriate action to respond to the threat posed by the presence of hazardous substances at the Site.

B. Threats to the Environment

The Site lies in a flood plain that drains north to the Mohawk River less than 1,500 feet away. Dense vegetation surrounds the Site to the east and west and farmland borders the Site to the South. Should a release occur, the natural flora and fauna in these areas will be negatively impacted. A release may also result in hazardous substances being transported via surface water runoff or by entering the groundwater or an airborne release.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health or welfare or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COST

A. Proposed Actions

1. Proposed action description

An estimated 56,000 cubic yards of ACM has been dumped over a 1.75-acre area. Other than 12 to 15 small piles, the area is flat. The proposed removal action is to:

- Level the 12 to 15 small piles and grade the disposal area to facilitate surface water drainage and minimize the presence of jagged or sharp object protrusions;
- Install a durable and weather resilient synthetic polyethylene fabric liner, to cover and secure the entire area where ACM was disposed; and
- Install a six-foot high security fence along the perimeter of the disposal area.

The purpose of this proposed action is to eliminate the potential for direct contact with ACM that is present at the Site. The proposed action of covering the ACM and fencing

the Site will effectively accomplish the goal of mitigating the immediate threats to public health and provide a temporary solution to migration of material. It is designed to achieve a timely response and protect human health by stabilizing the source of contamination at the Site. A decision regarding the ultimate disposition of the ACM and any associated contaminated soils will be considered in conjunction with the results or an ongoing criminal investigation against potentially responsible parties at the Site. Pending the results of that investigation (which may ultimately involve a criminal case with PRP performance of a removal, or restitution for EPA), the Agency will perform periodic inspections to ensure that perimeter fencing and the synthetic cover remain intact.

2. Contribution to remedial performance

The response measures proposed in this Action Memorandum will address the threats posed to public health through the securing of hazardous substances and wastes. The proposed action will contribute to any long-term action with respect to the release of threatened release of hazardous substances at the Site. There are no long-term remedial actions planned for this Site.

3. Description of alternative technologies

Alternative technologies will be considered so long as the technology provides timely response and protection of human health and the environment. The proposed removal action has been selected based upon the criteria of effectiveness, implementability and cost.

4. Engineering evaluation/cost analysis (EE/CA)

Because of the time critical nature of this removal action, an EE/CA will not be prepared.

5. Applicable and relevant and appropriate requirements (ARARs)

ARARs within the scope of this project, including the Resource Conservation and Recovery Act regulations that pertain to the disposal of hazardous wastes, will be met to the extent practicable. The Occupational Safety and Health Act regulations, that pertain to health and safety, will be met to the extent practicable.

6. Project schedule

The removal action will be initiated once approval for this response action is received. It is expected that the removal action can be completed in one month. No time extension

is anticipated at this time. However, because of the on-going enforcement case and its ultimate outcome, there is the possibility additional actions may be required.

B. Estimated Costs

Extramural Costs:

<u>Regional Removal Allowance Costs:</u>	<u>Proposed Costs</u>
Total Cleanup Contractor Costs (This cost category includes estimates for: ERRS, subcontractors, Notices to Proceed, and Interagency Agreements with Other Federal Agencies.	\$100,000
Cleanup Contractor Costs Contingency (15%)	<u>\$ 15,000</u>
Total Cleanup Contractor Costs (ERRS)	\$115,000

Other Extramural Costs Not Funded from the Regional Allowance:

Total RST, including multiplier costs	\$ 5,000
Total CLP, ERT, AST	<u>\$ 0</u>
Subtotal	\$ 5,000
 Subtotal, Extramural Costs	 \$120,000
Extramural Costs Contingency (20% of Subtotal, Extramural Costs, rounded to nearest thousand)	\$24,000
 TOTAL, REMOVAL ACTION PROJECT CEILING	 <u>\$ 144,000</u>

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action, or no action, could result in the further release of hazardous substances into the environment, exposing persons nearby and causing further contamination of the soil.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

EPA has identified potentially responsible parties ("PRPs") for the Site. There has been no CERCLA Request for Information Letters or Notice of Potential Liability Letter issued to date. EPA is evaluating whether to pursue the responsible parties for performance of the work or to fund the action.

The total EPA cost for this removal action based on full-cost accounting practices that will be eligible for cost recovery is estimated to be \$203,792 and was calculated as follows:

EPA's Total Estimated Project-Related Costs

Direct Costs = \$144,000 (direct extramural) + \$16,000 (direct intramural) = \$160,000

Indirect Costs = 27.36% (Region II Indirect Cost Rate) x \$160,000 (Direct Costs) = \$43,776

Estimated EPA Costs for the Removal Action = Direct Costs + Indirect Costs = \$203,776

This estimate includes direct costs, which include direct extramural costs and direct intramural costs, and indirect costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with full cost accounting methodology which became effective on October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of the removal action. The estimates are for illustrative purposes only and their use in this Action Memorandum may not be relied upon by any third party as binding upon EPA. Neither the lack of a total cost estimate nor deviation of actual costs from this estimate will affect the United States' right to cost recovery.

IX. RECOMMENDATION


This decision document represents the selected removal action for the Frankfort Asbestos Site located in Frankfort, Herkimer County, New York, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the Site. Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a removal action.

The total project ceiling requested in this Action Memorandum is \$144,000, of which \$115,000 is for Direct Extramural Funds and will be funded from the Regional removal advice of allowance.

There are sufficient monies in our current Advice of Allowance to fund this project.

Please indicate your authorization of funding for the Frankfort Asbestos Site, as per the current delegation of authority by signing below.

Approved: _____


George Pavlou, Director
Emergency and Remedial Response Division

Date: _____

9/20/07

Disapproved: _____

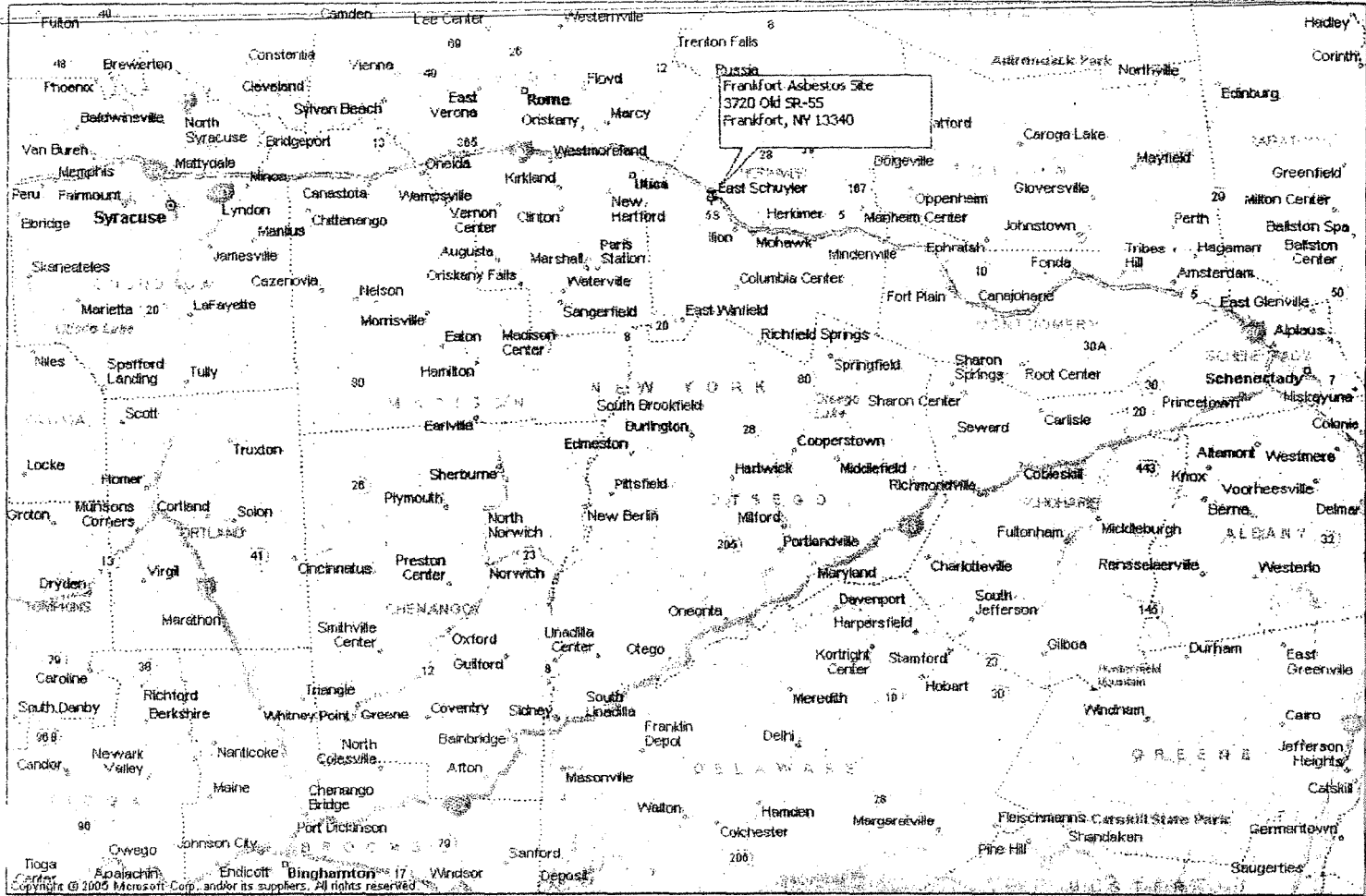
George Pavlou, Director
Emergency and Remedial Response Division

Date: _____

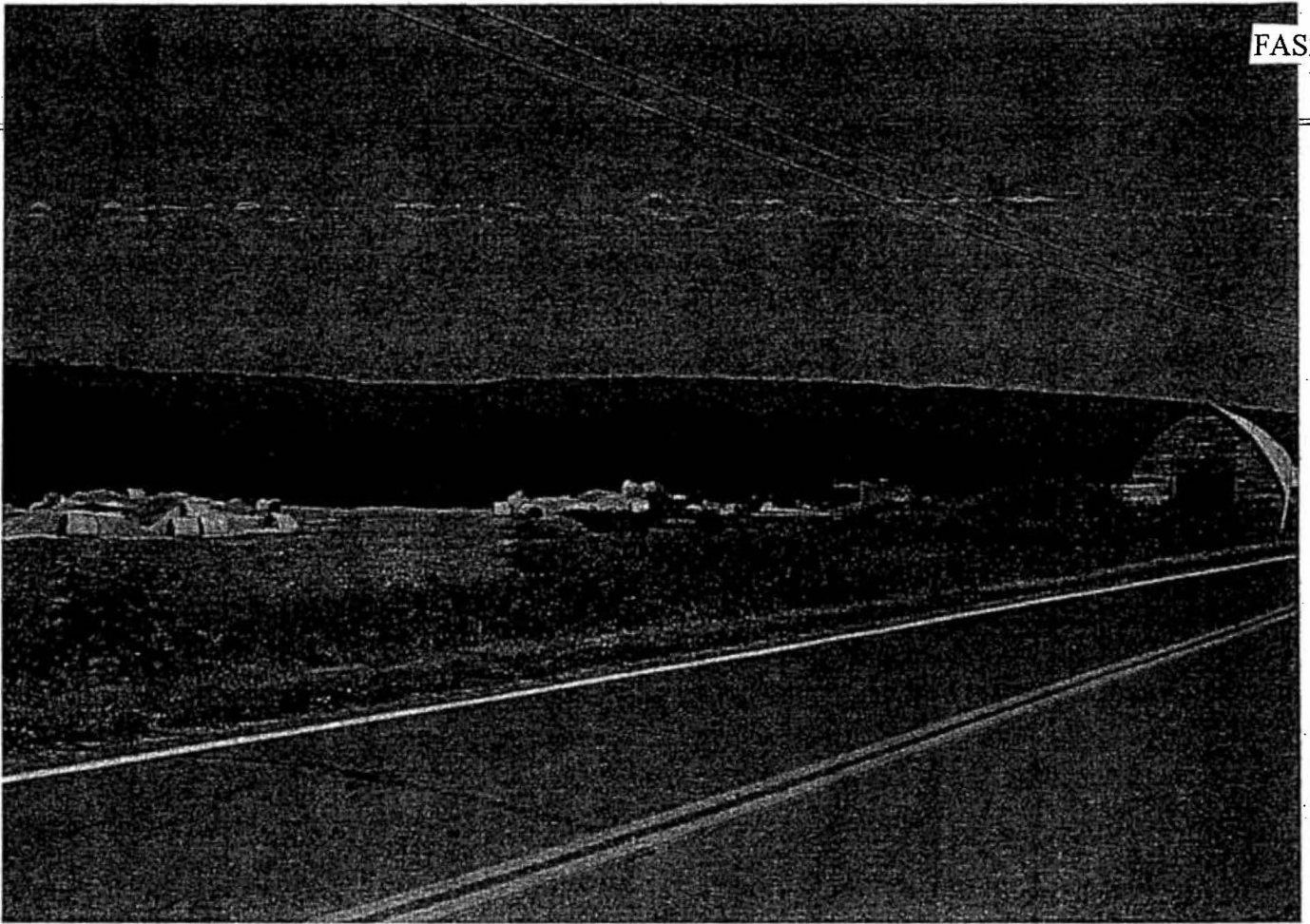
cc: (after approval is obtained)

G. Pavlou, ERRD-D
W. McCabe, ERRD-DD
J. Rotola, ERRD-RAB
D. Harkay, ERRD-RAB
N. Magriples, ERRD-RAB
B. Grealish, ERRD-RAB
J. LaPadula, ERRD-NYRB
T. Lieber, ORC-NYSFB
P. Brandt, PAD
R. Manna, OPM-FMB
T. Grier, 5202G
P. McKechnie, OIG
A. English, NYSDEC
A. Raddant, USDOJ
L. Roseman, NOAA
L. Battes, NYSEMO
C. Kelley, RST

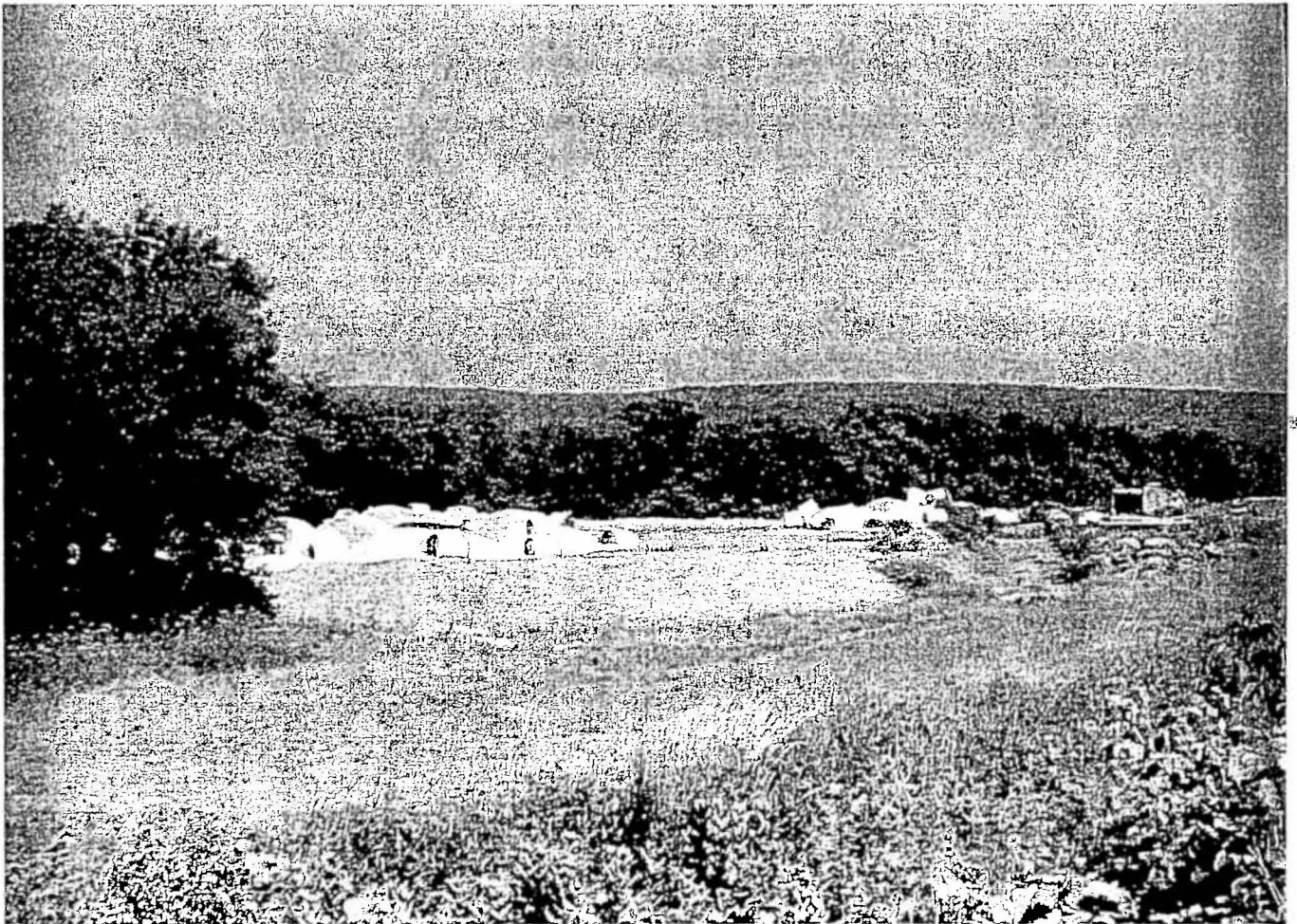
ATTACHMENT 1

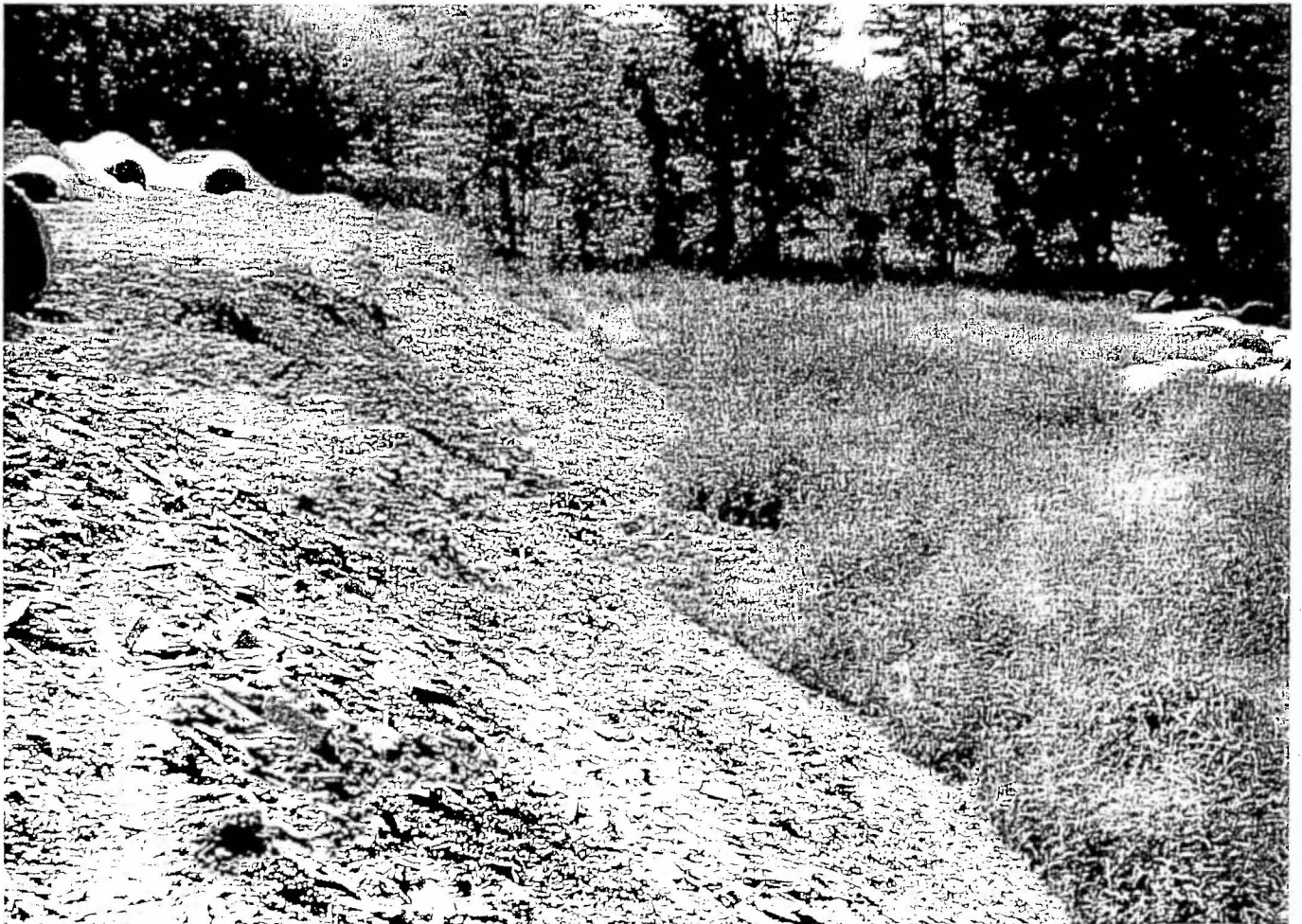


FRANKFORT ASBESTOS SITE
FIGURE 1



FAS2.5016





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www.westonsolutions.com

REMOVAL SUPPORT TEAM 2
EPA CONTRACT EP-W-06-072

July 18, 2007

Mr. David Rosoff, OSC
U.S. Environmental Protection Agency
Removal Action Branch
2890 Woodbridge Avenue
Edison, NJ 08837

EPA CONTRACT NO: EP-W-06-072
TDD NO: TO-0007-0019
DOCUMENT CONTROL NO: RST 2-02-F-0280
**SUBJECT: HEALTH AND SAFETY PLAN – FRANKFORT ASBESTOS SITE,
HERKIMER COUNTY, NEW YORK**

Dear Mr. Rosoff:

Enclosed please find the Health and Safety Plan (HASP) for the Frankfort Asbestos Site located at 3720 Southside Road, Frankfort, Herkimer County, New York.

If you have any questions, please do not hesitate to call me at (732) 585-4440.

Sincerely,

Weston Solutions, Inc.

Sayed Iqbal
Site Project Manager

Enclosure

cc: TDD File TO-0007-0019



REGION II RST HEALTH AND SAFETY PLAN
EMERGENCY RESPONSE/SITE INVESTIGATION
(Revised 21 February 2006)

TDD No.: 0007-0019

Site Name: Frankfort Asbestos Site
Site Address: Street No. 3720 Southside Road
City Frankfort,
County/State Herkimer County, New York

Directions to Site: (Map Attached): Take Garden State Parkway North or Route 287 North. Continue onto New York State Thruway (Rt. 87) North. Take exit 30 for RT-28 toward Herkimer/Mohawk. Slight right toward Mohawk St/RT-28 South. Turn left at St/RT-28 South and continue to follow RT-5S. Turn right at RT-5S W. Take the exit toward Acme Rd/Old NY-5S. Turn right at Acme Rd/Old NY-5S than continue to follow Old NY-5S.

Historical/Current Site Information:

Site is a farm where illegal surface dumping of asbestos containing construction/building materials has taken place. A debris pile of approximately 6,000 tons is currently present on site.

RST 2 Scope of Work:

RST 2 will provide personnel to collect and ship multi-media samples. The sample media will consist of debris samples for semi-volatile organic compounds and lead, and soil/sediment samples for asbestos, lead and semi-volatile organic compounds. Debris samples will be collected from 10 locations on the pile to investigate the presence of semi-volatile organic compounds and lead. Subsurface debris samples will be collected from 0-6" from the surface using hand auger and shovels. Debris samples will be sieved and homogenized in the field prior to placing into sample jars for shipment to the laboratory. Surface soil samples around the debris pile (at the foot of the pile) will be collected from 12 locations to investigate whether asbestos fibers, lead and semi-volatile organic compounds are present in the surface soils. The debris sampling and sample preparation will be performed in PPE Level C. In addition, surface soil samples of the adjacent farm, river and flood zone area will be collected at 24 locations to investigate migration of the asbestos and lead from the debris pile. All surface soil samples will be collected from 0 to 1".

Incident Type: Air Release -
 Spill -
 Fire -
 HW Site - Abandoned dump site

Location Class: Industrial Commercial Urban/Residential Rural

USEPA Contact: David Rosoff
Original HASP: Yes or No Yes
Lead RST: Sayed Iqbal

Date of Initial Site Activities: 07/30/2007
Modification Number: 0
Site Health & Safety Coordinator: S. Iqbal
Health & Safety Alternate: John Brennan

Response Activities/Dates of Response (fill in as applicable)

Emergency Response:	<input type="checkbox"/> Perimeter Recon.	
	<input type="checkbox"/> Site Entry	
	<input type="checkbox"/> Visual Documentation	
	<input type="checkbox"/> Multi-Media Sampling	
	<input type="checkbox"/> Decontamination	
Assessment:	<input checked="" type="checkbox"/> Perimeter Recon.	<u>Week of July 30, 2007</u>
	<input checked="" type="checkbox"/> Site Entry	<u>Week of July 30, 2007</u>
	<input checked="" type="checkbox"/> Visual Documentation	<u>Week of July 30, 2007</u>
	<input checked="" type="checkbox"/> Multi-Media Sampling	<u>Week of July 30, 2007</u>
	<input checked="" type="checkbox"/> Decontamination	<u>Week of July 30, 2007</u>

Physical Safety Hazards to Personnel

Heat Cold Precipitation Confined Space Terrain
 Walking/Working Surfaces Fire & Explosion Oxygen Deficiency
 Underground Utilities Overhead Utilities Heavy Equipment
 Unknowns in Drums, Tanks, Containers Ponds, Lagoons, Impoundments
 Rivers, Streams Pressurized Containers, Systems Noise
 Illumination Nonionizing Radiation Ionizing Radiation

Biological Hazards to Personnel

Infectious/Medical/Hospital Waste Non-domesticated Animals Insects
 Poisonous Plants/Vegetation Raw Sewage

Training Requirements

40 Hour General Site Worker Course with three days supervised experience
 24 Hour Course for limited, specific tasks with one day supervised experience
 24 Hour Course for Level D site with one day supervised experience
 8 Hour Annual Refresher Health and Safety Training
 8 Hour Management/Supervisor Training in addition to basic training course
 Site Specific Health and Safety Training
 Pre-entry training for emergency response skilled support personnel

Medical Surveillance Requirements

Baseline initial physical examination with physician certification
 Annual medical examination with physician certification
 Site Specific medical monitoring protocol (Radiation, Pesticide, PCB, Metals)
 Asbestos Worker medical protocol
 Exempt from medical surveillance
 Examination required in event of chemical exposure or trauma

Vehicle Use Assessment and Selection

Driving is one of the most hazardous and frequent activities for Weston Employees. As such, Weston Employees are required to adhere to established safe operating practices in order to maintain their eligibility to drive Weston owned, leased, or rented vehicles. All drivers and passengers riding in a Weston vehicle must maintain a commitment for a safe journey. This means being attentive while in the vehicle and helping the driver to notice hazards ahead of and around the vehicle and ensure that their presence does not distract the driver from safely operating the vehicle.

A high percentage of vehicle accidents occur when operating in reverse. Anytime a vehicle is operated in reverse, e.g., backing out of a parking area, if there are passengers, at least one of them are to assist the driver by acting as a guide person during the reverse movement or during other vehicle operation where it would be prudent to have a guide person(s) participate in the vehicle movement. When practical, the preferred parking method would be to back into the parking area.

At a minimum, each Weston Driver must:

- Possess a current, valid drivers' license
- Obey posted speed limits and other traffic laws
- Wear seat belts at all times while the vehicle is in operation
- Conduct a 360 degree inspection around the vehicle before attempting to drive the vehicle
- Report accidents / incidents immediately and complete a Notice of Incident (NOI)
- Keep vehicles on approved roadways (FWD doesn't guarantee mobility on unapproved surfaces)

All Region II RST personnel are experienced and qualified to drive RST fleet vehicles (Trailblazers, Suburbans, Cargo Van, and 10' x 12' Box Truck). However, in the event that vehicle rental is required, each person must take the time to familiarize themselves with that particular vehicle. This familiarization includes adjustment of the dashboard knobs/controls, mirrors, steering wheel, seats, and a 360 degree external inspection of the vehicle.

1. The following vehicles are anticipated to be used on this project:

- Car
- Pickup Truck
- Intermediate / Standard SUV (e.g. Chevy Trailblazer, Chevy Tahoe, Jeep Liberty, Ford Explorer)
- Full Size SUV (e.g., Chevy Suburban, Ford Expedition, GMC Yukon)
- Minivan / Cargo Van
- Box Truck (Size: _____) or Emergency Response Vehicle (ERV)
- Other _____

2. Are there any on-site considerations that should be noted:

- Working/Driving Surfaces, Debris, Overhead Clearance, Obstructions, Tire Puncture Hazards, Vegetation, Terrain, Parking, Congestion, Site Entry/Exit Hazards, Local Traffic Volume, Security, Heavy Equipment, Time/Length of Work Day

Do any of the considerations above require further explanation?

No

3. Are there any seasonal considerations that should be noted (e.g., Anticipated Snowy Conditions):

No

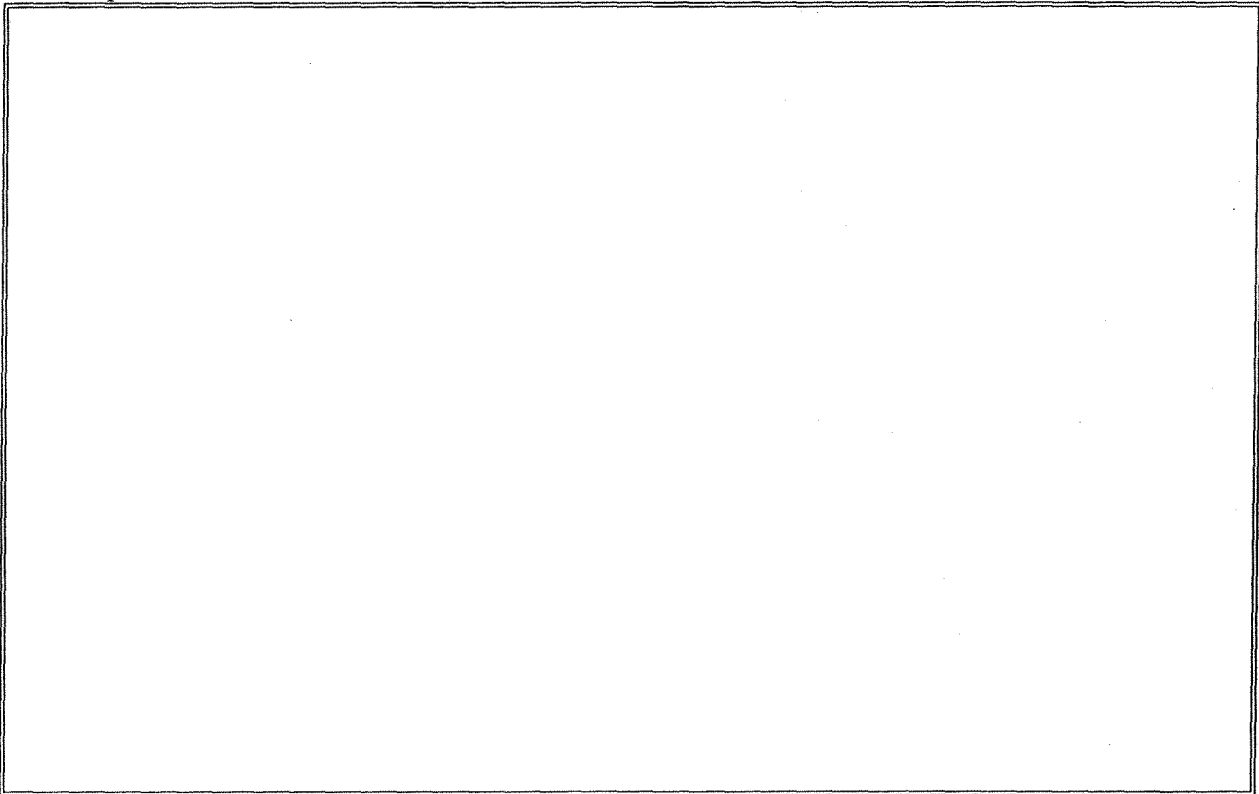
4. Is a Traffic Control Plan required? () Yes / (X) No.

If so, the Traffic Control Plan must be attached to this Health & Safety Plan.

Physical Parameters	Chemical Contaminant	Chemical Contaminant	Chemical Contaminant
	Asbestos	Lead	PAHs (Coal Tar Pitch Volatiles)
Exposure Limits IDLH Level	___ ppm <u>0.1</u> /cc PEL ___ ppm ___ mg/m ³ TLV ___ ppm ___ mg/m ³ IDLH	___ ppm <u>0.05</u> mg/m ³ PEL ___ ppm ___ mg/m ³ TLV ___ ppm <u>100</u> mg/m ³ IDLH	___ ppm <u>0.2</u> mg/m ³ PEL ___ ppm <u>0.1</u> mg/m ³ REL ___ ppm <u>80</u> mg/m ³ IDLH
Physical Form (Solid/Liquid/Gas) Color	<input checked="" type="checkbox"/> Solid ___ Liquid ___ Gas <u>White or greenish blue or gray-green fibrous solid</u> Color	<input checked="" type="checkbox"/> Solid ___ Liquid ___ Gas <u>Soft gray solid</u> Color	<input checked="" type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid Black or dark-brown amorphous residue. ___ Gas ___ Color
Odor	Odorless	Odorless	Aromatic odor
Flash Point Flammable Limits	<u>NA</u> Degrees F or C NA % UEL NA % LEL	<u>NA</u> Degrees F or C NA % UEL NA % LEL	Varies for compounds Degrees F ___ % UEL ___ % LEL
Vapor Pressure Vapor Density	<u>NA</u> mm/Hg ___ Air = 1	<u>0</u> mm/Hg ___ Air = 1	<u>N/A</u> mm/Hg ___ Air = 1
Specific Gravity	<u>NA</u> Water = 1	<u>11.34</u> Water = 1	Varies, depending upon the specific compound. ___ Water = 1
Solubility	Insoluble	Insoluble	Properties vary depending upon specific compound.
Incompatible Material	Varies	Strong oxidizers, hydrogen peroxide, acids	Strong oxidizers
Routes of Exposure	<input checked="" type="checkbox"/> Inh ___ Abs <input checked="" type="checkbox"/> Con <input checked="" type="checkbox"/> Ing	<input checked="" type="checkbox"/> Inh <input checked="" type="checkbox"/> Abs ___ Con <input checked="" type="checkbox"/> Ing	<input checked="" type="checkbox"/> Inh ___ Abs <input checked="" type="checkbox"/> Con ___ Ing
Symptoms of Acute Exposure	Asbestosis, restricted pulmonary function, finger clubbing, irritating to eyes, Mesothelioma	Inh - Irritated eyes, skin, nose Abs - Respiratory system, giddiness, headache, nausea Ing - Staggered gait, fatigue, anorexia Con - Lassitude, dermatitis, bone marrow depressant	Dermatitis, Bronchitis, potential occupational carcinogen
First Aid Treatment	Irrigate eyes immediately for 15 minutes, remove to fresh air, seek medical attention immediately	Irrigate eyes immediately, soap wash immediately, remove to fresh air, resuscitation if necessary, seek medical attention immediately	Irrigate eyes immediately, soap wash immediately, remove to fresh air, resuscitation if necessary, seek medical attention immediately
Ionization Potential	<u>NA</u> eV	<u>NA</u> eV	<u>N/A</u> eV
Instruments for Detection	___ PID w/ ___ Probe ___ FID ___ CGI ___ RAD Det Tube ___ pH Other <u>0.45 um MCEF, NIOSH 7400</u>	___ PID w/ ___ Probe ___ FID ___ CGI ___ RAD ___ Det Tube ___ pH Other <u>0.8 um MCEF, NIOSH 7300</u>	___ PID w/ ___ Probe ___ FID ___ CGI ___ RAD ___ Det Tube ___ pH Other <u>OSHA 58, NIOSH 5515</u>

Control Measures

Site Map with work zones:

**Work Zone Definitions:**

Exclusion Zone - the area where contamination is either known or expected to occur and the greatest potential for exposure exists. The outer boundary of the Exclusion Zone, called the Hotline, separates the area of contamination from the rest of the site.

Contamination Reduction Zone (CRZ) - the area in which decontamination procedures take place. The purpose of the CRZ is to reduce the possibility that the Support Zone will become contaminated or affected by the site hazards.

Support Zone - the uncontaminated area where workers are unlikely to be exposed to hazardous substances or dangerous conditions. The Support Zone is the appropriate location for the command post, medical station, equipment and supply center, field laboratory, and any other administrative or support functions that are necessary to keep site operations running efficiently.

Communications:

(X) Buddy System () Radio () Air Horn for emergencies
(X) Hand Signals (X) Visual Contact

Personnel Decontamination Procedures:

- Wet Decontamination (procedures as follows)
- Dry Decontamination (procedures as follows)

Used PPE and disposable sampling equipment will be cleaned on site of gross contamination and be disposed in accordance with applicable federal, state, and local regulations. PPE and sampling equipment that became grossly contaminated and can not be cleaned will be bagged and staged on site for disposal during the removal action.

Equipment Decontamination Procedures:

- None
- Wet Decontamination (procedures as follows)
- Dry Decontamination (procedures as follows)

All non disposable stainless steel equipment (i.e. sieves, hand augers, pick or shovel) involved in field sampling activities will be decontaminated in accordance to EPA/ERT SOP # 2006 before, during and after the sampling event. Following the dry removal of adhering soil to the greatest practical extent, decontamination will be conducted as: (1)- Alconox detergent and potable water scrub. (2) – Potable water rinse, distilled water rinse, 10% Nitric acid rinse followed by distilled water rinse. Equipment used for the semi-volatile sampling will also receive a hexane rinse followed by an air dry prior to use.

Adequacy of decontamination determined by: Site Health and Safety Supervisor

Personal Protective Equipment

TASK TO BE PERFORMED	ANTICIPATED LEVEL OF PROTECTION	TYPE OF CHEMICAL PROTECTIVE COVERALL	INNER GLOVE OUTER GLOVE BOOT COVER	TYPE OF APR CARTRIDGE OR CANISTER
Perimeter Recon	Level D	Coverall, steel toe boots, hard hat	N/A	N/A
Initial Entry	Level C	Saran or Tyvek	Blue Nitrile/Blue Nitrile/Booties	GME-P100 or equivalent
Debris Pile Sampling	Level C	Saran or Tyvek	Blue Nitrile/Blue Nitrile/Booties	GME-P100 or equivalent
Soil/Sediment Sampling (for lead, asbestos, and SVOCs)	Level D*	Saran or Tyvek	Blue Nitrile/Blue Nitrile/Booties	N/A

* - Upgrade to Level C if PACM debris is noted on the ground surface.

DIRECT READING INSTRUMENTS	MultiRAE CGI/O ₂ -H ₂ S-CO- PHOTO IONIZATION DETECTOR	Ludlum 19 Micro-R Meter/Ludlum Model 3 Survey Meter/Probe	Photovac MicroFID	Drager Chemical Detector Tube	OTHER
ID NUMBER					
CALIBRATION DATE					
RST MEMBER					
ACTION LEVEL	≥ 10 - 20% LEL (Confined space/non- Confined space) ≤ 19.5%, O ₂ Deficient ≥ 23% O ₂ - Enriched	3X BACKGROUND - CAUTION; 1 mR/HR - LEAVE	UNKNOWNNS: 1 - 5 UNITS - "C" 5-500 UNITS-"B"	PEL/TLV COMPARE WITH RESPONSE OF TUBE	

Emergency Telephone Numbers

Emergency Contact	Location	Phone Number	Notified
Hospital	St Luke's-Memorial Hospital Center: 1656 Champlin Avenue, Utica, NY 13502	(315) 624-6000 or 911	no
Ambulance		911	no
Police		911	no
Fire Department		911	no

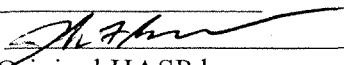
Chemical Trauma Capability? (X) Yes () No

If no, closest backup: _____ Phone: _____

Directions to Hospital (attach map) Route verified by: _____ Date: ___/___/___
See attached direction and maps.


Additional Emergency Phone Contacts

WESTON Medical Emergency Service: Dr. E. D. Walker	800-874-4676 or 770-541-8776 (Daytime) 1-404-202-6918 (for after hours emergency contact and consult with Dr. Walker)
Chemtrec	800-424-9300
ATSDR	404-639-0615
ATF (explosives information)	800-424-9555
National Response Center	800-424-8802
National Poison Control Center	800-764-7661

HASP prepared by: Sayed Iqbal Date: 07/09/2007
 Pre-Response/Entry Approval by:  Date: 07/10/07
 Verbal Approval/Modification to Original HASP by: _____ Date: ___/___/___

**Maps and Directions for Frankfort Site
And St Luke's-Memorial Hospital**

FAS2.8012

 **3720 Southside Rd**
Frankfort, NY 13340

Drive: 11.4 mi – about 23 mins

- 1. Head **northwest** on **Old NY-5S/Southside Rd** toward **Mucky Run Rd** 4.5 mi
8 mins
Continue to follow Southside Rd
- ➔ 2. Turn **right** at **Dyke Road Spur** 436 ft
- 3. Turn **left** at **Dyke Rd** 0.1 mi
- ➔ 4. Turn **right** to merge onto **RT-5S W** 4.0 mi
7 mins
- 5. Continue on **Oriskany St W/RT-5A W** 0.8 mi
2 mins
- 6. Turn **left** at **Jason St** 285 ft
- ➔ 7. Turn **right** at **Erie St** 0.7 mi
2 mins
- ➔ 8. Slight **right** at **Whitesboro St** 0.1 mi
- 9. Turn **left** at **Champlin Ave** 1.1 mi
3 mins

 **1656 Champlin Ave**
Utica, NY 13502

These directions are for planning purposes only. You may find that construction projects, traffic, or other events may cause road conditions to differ from the map results.

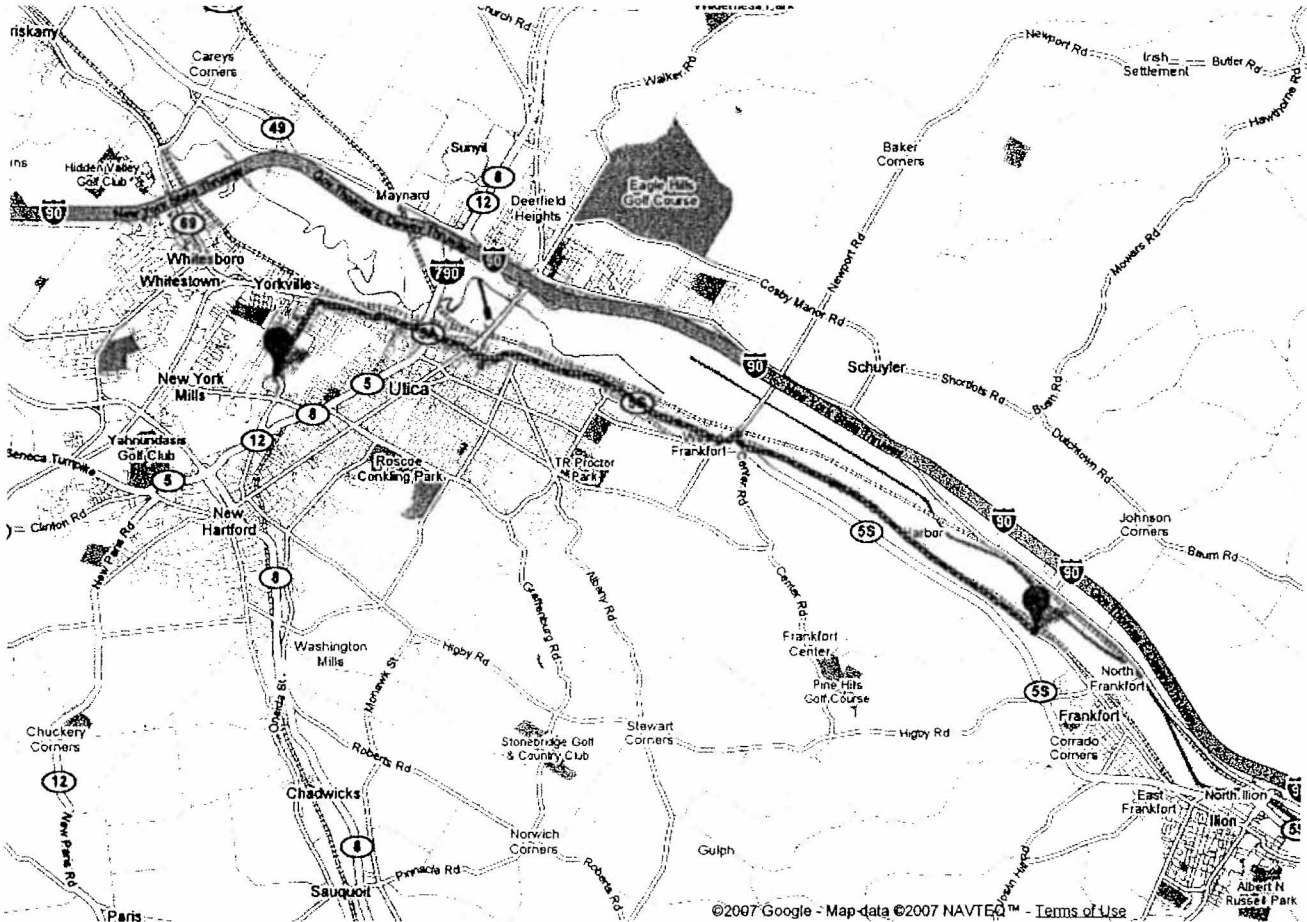
Map data ©2007 NAVTEQ™

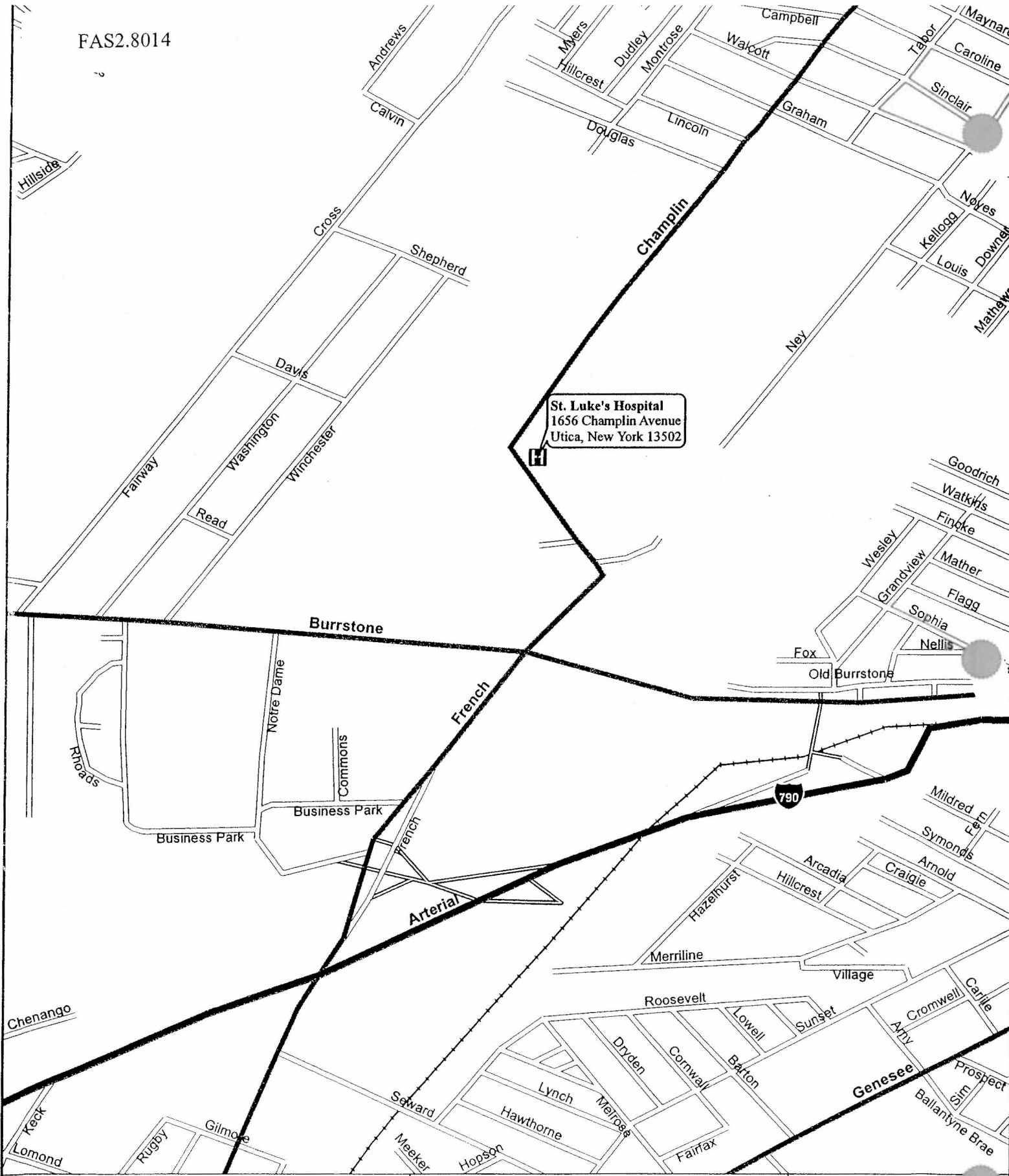


Start **3720 Southside Rd**
Frankfort, NY 13340

End **1656 Champlin Ave**
Utica, NY 13502


Travel **11.4 mi – about 23 mins**





St. Luke's Hospital
1656 Champlin Avenue
Utica, New York 13502

Legend

 Hospital Location



0 0.15 0.3 0.6 Miles

WESTON SOLUTIONS Weston Solutions, Inc.
Federal Programs Division

In Association With
Innovative Technical Solutions, Inc.,
Scientific and Environmental Associates, Inc.
and Avatar Environmental, LLC.

**Figure 2:
Hospital Location Map**

FRANKFORT ASBESTOS SITE
FRANKFORT, NEW YORK

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 2
CONTRACT # EP-W-06-072

GIS ANALYST	F CAMPBELL
EPA OSC	D ROSOFF
RST SPM	S IQBAL
FILENAME	FRANKFORT ASBESTOS.MXD

DATE MODIFIED: 07/10/2007

Description of Site and Response Activities

FAS2.8015

Size of Site: _____ Terrain: _____ Weather: _____

Distance to Nearest: _____

Residence _____ School _____ Hospital _____

Public Building _____ Nearest Waterway: _____ - (name)

Other _____

Evacuation: Yes No By Whom: _____

Condition	Observed	Potential	None	Comments/Observations
Surface Water Contamination				
Ground Water Contamination				
Drinking Water Contamination				
Air Release				
Soil Contamination				
Stressed Vegetation				
Dead Animal Species				

Action Taken On-Site:

Perimeter Monitoring: Yes No

Site entry by RST: Yes No

Tasks Conducted	Level of Protection/Specific PPE Used

Hazardous Waste Site and Environmental Sampling Activities

Off Site: (X) Yes () No

On Site: (X) Yes () No

Describe types of samples and methods used to obtain samples:

Sampling activities will include the sampling of debris, surface soil and sediment. Debris, soil, and sediment sampling will be conducted with dedicated and disposable equipment. Non-dedicated equipment (e.g. sieves) will be decontaminated in the field as per the approved RST 2 QAPP.

Was laboratory notified of potential hazard level of samples? (X) Yes () No

Note: The nature of the work assignment may require the use of the following procedures/programs which will be included as attachments to this HASP as applicable: Emergency Response Plan, Confined Space entry Procedures, Spill Containment Program.

Disclaimer: This Health and Safety Plan (HASP) was prepared for work to be conducted under the Removal Support Team 2 (RST 2) Contract EP-W-06-072 for Zone I. Use of this HASP by WESTON and its subcontractors is intended to fulfill the OSHA requirements found in 29 CFR 1910.120. Items not specifically covered in this HASP are included by reference to 29 CFR 1910 and 1926.

The signatures below indicate that the individuals have read and understood this Health and Safety Plan.

PRINTED NAME	SIGNATURE	AFFILIATION	DATE
SAMEB IQBAL	<i>[Signature]</i>	RST 2	7/31/07
JESS JAGER	<i>[Signature]</i>	RST 2	7/31/07

Final Submission of HASP by:		Date
Post Response Review by:		
Post Response Approval by:		
RST HSO Review by:		

COMMENTS/FOLLOW UP

[Empty rectangular box for comments and follow-up]

Air Monitoring Summary Log

FAS2.8018

Date: __/__/

Data Collected by:

Station/Location	CGI/O ₂ Meter	Radiation Meter	PID	FID	Other (____)

Summary/Comments (data to be summarized by a range of readings, i.e. "Low to High" and/or "Average" by location):

**FLD 05: HEAT STRESS PREVENTION
AND MONITORING**

FLD 05 HEAT STRESS PREVENTION AND MONITORING

[Return to top](#)

GENERAL

Heat stress may occur at any time work is performed at elevated temperatures. Wearing chemical protective clothing often decreases natural body heat loss and increases the risk of heat stress.

If the body's physiological processes fail to maintain a normal body temperature because of excessive heat, a number of physical reactions can occur, with symptoms ranging from mild (such as fatigue, irritability, anxiety, and decreased concentration or dexterity) to fatal. Because heat stress is one of the most common and potentially serious illnesses at hazardous waste sites, regular monitoring and other preventive measures are vital to ensure worker safety.

Employees who are taking prescription or over-the-counter medications should consult with their personal physician prior to working in high-temperature environments.

REFERENCES

OSHA 29 CFR 1910 and 1926

Related FLD OPS:

FLD02 – Inclement Weather

FLD03 – Hot Processes – Steam

FLD08 – Confined Space Entry

FLD36 – Welding, Cutting and Burning

FLD37 – Pressure Washing

APPENDICES

A Common Heat Stress Disorders and Their Prevention and Treatment

PROCEDURE

Recognition and Risk Assessment

In the planning stages of a project, the potential for heat stress disorders must be considered as a physical hazard in the site-specific Health and Safety Plan (HASP). Risk assessment can be accomplished in the development stages of a project by listing in the HASP the most likely heat stress disorders that may occur.

Revised 11/1999

The SHSC must make decisions on the proper safety procedures and recommend them to the site manager. Each worker must evaluate the risk associated with his or her work and be actively alert to these hazards. Any site worker may stop work if safety procedures are not followed or the risk is too great. In addition, all site personnel must be aware of these symptoms in both themselves and their co-workers.

Four common heat stress disorders and their associated prevention and treatment methods are provided in Appendix A.

Prevention and Protection Programs

Heat stress is affected by several interacting factors including, but not limited to, age, obesity, physical condition, substance abuse, level of personal protective equipment worn, and environmental conditions (temperature, shade, and humidity). Site workers must learn to recognize and treat the various forms of heat stress. The best approach is preventive heat stress management such as the examples given below.

Have workers drink 16 ounces of water before beginning work, at established breaks, and in the morning or after lunch. The body's normal thirst mechanism is not sensitive enough to ensure body fluid replacement, therefore, pre- and post-work fluid intake is necessary. Under heavy work and heat conditions, the body may lose up to 2 gallons of fluids per day. In order to prevent heat stress symptoms, the individual must ensure replacement of this moisture.

Provide disposable cups that hold about 4 ounces, and water that is maintained at 50 to 60°F. Have workers drink 16 ounces of water before beginning work, and a cup or two at each break period. Provide a shaded area for rest breaks. Discourage the intake of caffeinated drinks during working hours. Monitor for signs of heat stress.

Encourage workers to maintain a good diet during these periods. In most cases, a balanced diet and lightly salted foods should help maintain the body's electrolyte balance. Bananas are especially good for maintaining the body's potassium level. The most important measure to prevent heat-related illness is adequate fluid intake. Workers should drink 1/2 to 1 quarts of liquids per hour in high heat conditions. Most of this liquid should be water.

If utilizing commercial electrolyte mixes, double the amount of water called for in the package directions. Indications are that "full-strength" preparations taken under high heat stress conditions may actually decrease the body's electrolytes.

Acclimate workers to site work conditions by slowly increasing workloads, i.e., do not begin work activities with extremely demanding tasks. Rotate shifts of workers who are required to wear impervious clothing in hot weather. In extremely hot weather, conduct field activities in the early morning and evening.

Revised 11/1999

Provide cooling devices to aid natural body heat regulation. These devices, however, add weight and their use should be balanced against worker efficiency. An example of a cooling aid is long cotton underwear, which acts as a wick to absorb moisture and protect the skin from direct contact with heat-absorbing protective clothing.

Ensure that adequate shelter is available to protect personnel against heat and direct sunlight, which can decrease physical efficiency and increase the probability of heat stress. If possible, set up the command post in the shade.

Good hygienic standards must be maintained by frequent showering and changes of clothing. Clothing should be permitted to dry during rest periods. Persons who notice skin problems should immediately consult medical personnel.

Heat Stress Monitoring and Work Cycle Management

When strenuous field activities are part of on-going site work conducted in hot weather, the following guidelines should be used to monitor the body's physiological response to heat, and to manage the work cycle, even if workers are not wearing impervious clothing. These procedures should be instituted when the temperature exceeds 70°F and the tasks/risk analysis indicates an increased risk of heat stress problems. Consult the HASP and a safety professional (e.g., Division safety manager, safety officer) if questions arise as to the need for specific heat stress monitoring. In all cases, the site personnel must be aware of the signs and symptoms of heat stress and provide adequate rest breaks and proper aid as necessary.

Measure Heart Rate – Heart rate should be measured by the radial pulse for 30 seconds as early as possible in the rest period. The heart rate at the beginning of the rest period should not exceed 110 beats per minute. If the heart rate is higher, the next work period should be shortened by 33%, while the length of the rest period stays the same. If the pulse rate still exceeds 110 beats per minute at the beginning of the next rest period, the following work cycle should be further shortened by 33%. The procedure is continued until the rate is maintained below 110 beats per minute.

Measure Body Temperature – When ambient temperatures are over 90°F, body temperatures should be measured with a clinical thermometer as early as possible in the rest period. If the oral temperature exceeds 99.6°F (or 1 degree change from baseline) at the beginning of the rest period, the following work cycle should be shortened by 33%. The procedure is continued until the body temperature is maintained below 99.6°F (or 1 degree change from baseline). Under no circumstances should a worker be allowed to work if their oral temperature exceeds 100.6°F.

Measure Body Water Loss – Body water loss greater than 1.5% of total body weight is indicative of a heat stress condition. Body weight is measured before personal protective equipment (PPE) is donned and after the PPE is removed following a work cycle. Body water loss can be measured with an ordinary bathroom scale, however, the scale must be sensitive to one-half pounds increments. A worker is required to drink additional fluids and rest if their body water loss is greater than 1.5%.

Note: For purposes of this operating practice, a break is defined as a 15-minute period and/or until an individual's vital signs are within prescribed guidelines.

A physiological monitoring schedule is determined by following the steps below:

Measure the air temperature with a standard thermometer.

Estimate the fraction of sunshine by judging what percent the sun is out (refer to Table 1).

Calculate the adjusted temperature based on the following formula:

Adjusted Temperature = Actual Temperature + 13 X
(fraction of the percent sunshine factor)

Using Table 2, determine the physiological monitoring schedule for fit and acclimated workers.

The length of work period is governed by frequency of physiological monitoring (Table 2). The length of the rest period is governed by physiological parameters (heart rate and oral temperature). For example, site personnel anticipate wearing level C (impermeable clothing) during site activities.

The air temperature is 80°F and there are no clouds in the sky (100% sunshine). The adjusted temperature is calculated in the following manner:

Adjusted Temperature (Adj T °F) = Actual Temperature (Amb T °F) + (13 x fraction of the percent sunshine factor).

Adj T °F = 80°F + (13 x 1.0)

Adj T °F = 93°F

Using Table 2, the pulse rate, oral temperature and body water loss monitoring would be conducted after each 60 minutes of work. The adjusted temperature may need to be redetermined if the percent sunshine and ambient temperature changes drastically during site work.

If an individual's heart rate exceeds 110 beats per minute at the beginning of the rest period, that individual will continue to rest until his or her heart rate drops to baseline; the next work period is then decreased by 33%.

Revised 11/1999

TABLE 1

FLD05-4

**PERCENT SUNSHINE FACTORS
HEAT STRESS PREVENTION AND MONITORING**

Percent Sunshine (%)	Cloud Cover	Sunshine fraction
100	No cloud cover	1.0
50	50% cloud cover	0.5
0	Full cloud cover	0.0

TABLE 2

**PHYSIOLOGICAL MONITORING SCHEDULE
HEAT STRESS PREVENTION AND MONITORING**

Adjusted Temperature	Level D (Permeable clothing)	Level C, B, or A (Nonpermeable clothing)
90 ^o F (32.2 ^o C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5 ^o F (30.8 ^o -32.2 ^o C)	After each 60 minutes of work	After each 30 minutes of work
82.5 ^o -87.5 ^o F (28.1 ^o -32.2 ^o C)	After each 90 minutes of work	After each 60 minutes of work
77.5 ^o -82.5 ^o F (25.3 ^o -28.1 ^o C)	After each 120 minutes of work	After each 90 minutes of work
72.5 ^o -77.5 ^o F (22.5 ^o -25.3 ^o C)	After each 150 minutes of work	After each 120 minutes of work

Revised 11/1999

APPENDIX A

COMMON HEAT STRESS DISORDERS AND THEIR PREVENTION AND TREATMENT

Heat Rash

Heat rash is caused by continuous exposure to heat and humidity, and is aggravated by chafing clothes. The condition decreases an individual's ability to tolerate heat and can be extremely uncomfortable.

Symptoms – Mild red rash, especially in areas of the body that come into contact with protective gear.

Treatment – Decrease amount of time spent working in protective gear and provide body powder to help absorb moisture and decrease chafing.

Heat Cramps

Heat cramps are caused by inadequate electrolyte intake. The individual may be receiving adequate water, however, if not combined with an adequate supply of electrolytes, the blood can thin to the point where it seeps into the active muscle tissue, causing cramping.

Symptoms – Acute painful spasms of voluntary muscles, most notably the abdomen and extremities.

Treatment – Move the victim to a cool area and loosen clothing. Have the victim drink 1 to 2 cups of lightly salted water or diluted commercial electrolyte solution immediately, and then every 20 minutes thereafter until symptoms subside. Electrolyte supplements can enhance recovery (e.g., Gatorade, Quench) however, it is best to double the amount of water required by the dry mix package directions or add water to the liquid form.

Heat Exhaustion

Heat exhaustion is a state of very definite weakness or exhaustion caused by the loss of fluids from the body. The condition is much less dangerous than heat stroke, but it nonetheless must be treated.

Symptoms – Pale, clammy, and moist skin, profuse perspiration, and extreme weakness. Body temperature is normal, pulse is weak and rapid, and breathing is shallow. The person may have a headache, may vomit, and may feel dizzy.

Treatment – Move the victim to a cool, air-conditioned or temperature-controlled area, loosen clothing, place in a position with the head lower than the feet (shock prevention), and allow the victim to rest. Consult a physician, especially in severe cases. Have the victim drink 1 to 2 cups of water immediately, and every 20 minutes thereafter until symptoms subside.

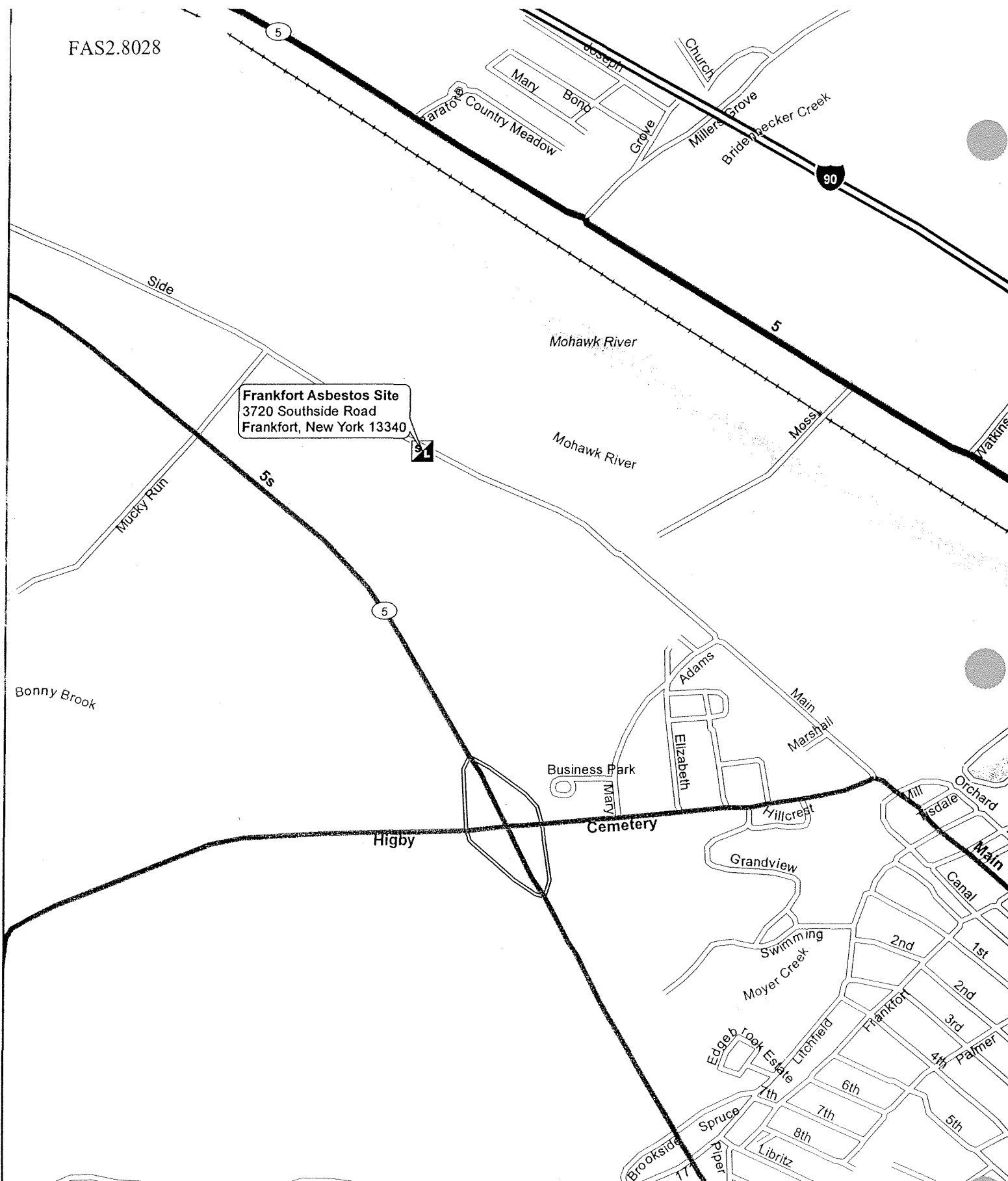
Heat Stroke

Heat stroke is an acute and dangerous reaction to heat stress caused by a failure of the body's heat regulating mechanisms, i.e., the individual's temperature control system (sweating) stops working correctly. Body temperature rises so high that brain damage and death may result if the person is not cooled quickly.

Symptoms – Red, hot, dry skin (although the person may have been sweating earlier); nausea, dizziness, confusion, extremely high body temperature, rapid respiratory and pulse rate, unconsciousness or coma.


Treatment – Remove the victim from the source of heat and cool the victim quickly. If the body temperature is not brought down quickly, permanent brain damage or death may result. Soak the victim in cool (not cold) water, sponge the body with cool water, or pour water on the body to reduce the temperature to a safe level (less than 102°F). Monitor the victim's vital signs and obtain immediate medical help. Do not give the victim coffee, tea, or alcoholic beverages.

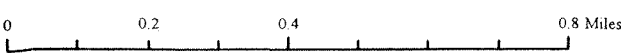
**SITE LOCATION MAP AND DRIVING
DIRECTIONS**



Frankfort Asbestos Site
 3720 Southside Road
 Frankfort, New York 13340

Legend

 Site Location



WESTON SOLUTIONS Weston Solutions, Inc.
 Federal Programs Division

In Association With
 Innovative Technical Solutions, Inc.,
 Scientific and Environmental Associates, Inc.
 and Avatar Environmental, LLC.

Figure 1:
Site Location Map

FRANKFORT ASBESTOS SITE
 FRANKFORT, NEW YORK

U.S. ENVIRONMENTAL PROTECTION AGENCY
 REMOVAL SUPPORT TEAM 2
 CONTRACT # EP-W-06-072

GIS ANALYST:	F. CAMPBELL
EPA OSC:	D. ROSOFF
RST SPM:	S. IOBAL
FILENAME:	FRANKFORT ASBESTOS.MXD

DATE MODIFIED: 07/10/2007

**1090 King Georges Post Rd
Edison, NJ 08837**

Drive: 251 mi – about 4 hours 9 mins

- | | |
|--|--------------------------|
| 1. Head east on King Georges Post Rd toward New St | 1.5 mi
4 mins |
| 2. Take the ramp onto Garden State Pkwy N
Partial toll road
Entering New York | 46.5 mi
50 mins |
| 3. Continue on New York State Thruway N
Partial toll road | 196 mi
3 hours 2 mins |
| 4. Take exit 30 for RT-28 toward Herkimer/Mohawk | 0.4 mi
1 min |
| ➔ 5. Slight right toward Mohawk St/RT-28 S | 0.3 mi |
| ⬅ 6. Turn left at Mohawk St/RT-28 S
Continue to follow RT-28 S | 0.1 mi
1 min |
| ➔ 7. Turn right at RT-5S W | 2.9 mi
4 mins |
| 8. Take the exit toward Acme Rd/Old NY-5S | 0.3 mi |
| ➔ 9. Turn right at Acme Rd/Old NY-5S
Continue to follow Old NY-5S | 2.6 mi
5 mins |

**3720 Southside Rd
Frankfort, NY 13340**

These directions are for planning purposes only. You may find that construction projects, traffic, or other events may cause road conditions to differ from the map results.

Map data ©2007 NAVTEQ™



FAS2.8030



Start 1090 King Georges Post Rd
Edison, NJ 08837

End 3720 Southside Rd
Frankfort, NY 13340

Travel 251 mi – about 4 hours 9 mins



**FRANKFORT
ASBESTOS SITE
Frankfort, N.Y.**

**TRIP REPORT
Soil and Debris Sampling
September 2007**

Prepared for:

**David Rosoff
On-Scene Coordinator
U.S. Environmental Protection Agency
Region II**

Prepared by:

Weston Solutions, Inc.





Weston Solutions, Inc.
Federal Programs Division
Suite 201
1090 King Georges Post Road
Edison, New Jersey 08837-3703
732-585-4400 • Fax 732-225-7037
www.westonsolutions.com

REMOVAL SUPPORT TEAM 2
EPA CONTRACT EP-W-06-072

September 19, 2007

Mr. David Rosoff, On Scene Coordinator
U.S. Environmental Protection Agency
Removal Action Branch
2890 Woodbridge Avenue
Edison, NJ 08837

EPA CONTRACT NO: EP-W-06-072

TDD NO: TO-0007-0019

DOCUMENT CONTROL NO: RST 2-02-F-0318

**SUBJECT: REVISED TRIP REPORT - Multimedia Sampling Event at the Frankfort
Asbestos Site, Frankfort, Herkimer County, New York.**

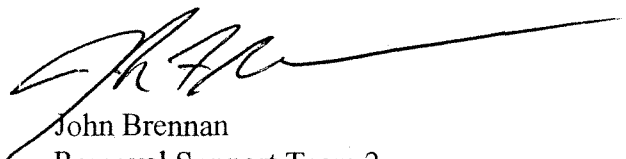
Dear Mr. Rosoff:

Enclosed please find the revised Trip Report for soil and debris sampling event conducted at the Frankfort Asbestos Site, Frankfort, Herkimer County, New York. The sampling event was conducted from July 31 to August 2, 2007.

If you have any questions, please do not hesitate to call me at (732) 585-4425.

Sincerely,

Weston Solutions, Inc.



John Brennan
Removal Support Team 2
Group Leader

Enclosure

cc: TDD File No.: TO-0007-0019
S. Sumbaly, Chemist / QA/QC Specialist



SAMPLING TRIP REPORT

SITE NAME: Frankfort Asbestos Site
 DCN No.: RST 2-02-F-0303
 TDD No.: TO-0007-0019

EPA SITE I.D. NO.: ZG

SAMPLE DATES: July 31 through August 2, 2007

1. Site Location: Southside Road
 Frankfort, Herkimer County, New York
 (Refer to Attachment A, Figure 1)

2. Sample Locations and Descriptions: Refer to Attachment A, Figure 2, Sample Location Map and Attachment B, Table 1 – Sample Collection Information and Attachment D, Table 2 – Locational Data

3. Laboratories Receiving Samples:

Sample Matrix	Analyses	Laboratory
Debris Pile (Fines)	TCL Semi-VOCs, Lead	EMSL Analytical, Inc. 107 Haddon Avenue Westmont, NJ 08108
Soils Surrounding The Debris Pile	TCL Semi-VOCs, Lead, Asbestos (CARB 435)	
Soils From The Farm Area	Lead, Asbestos (CARB 435)	
Soils From The Flood Plain Area	Lead, Asbestos (CARB 435)	
Soils Surrounding The Debris Pile (Leachate Area)	Full TCL Organics, TAL Metals	Compuchem Labs 501 Madison Avenue Cary, NC 27513

4. Sample Dispatch Data:

On August 2, 2007, 11 debris, 20 soil and one rinsate blank sample were shipped to EMSL Analytical, Inc., for asbestos, lead and Target Compound List Semi-Volatile Organic Compounds (TCL-SVOCs) analyses under FedEx Airbill No. 8598 0210 1567 by RST 2 personnel.

On August 3, 2007, 20 soil samples were transferred to a courier and delivered to EMSL Analytical, Inc., for asbestos and lead analyses.

On August 7, 2007, one soil sample was shipped to Compuchem Labs for full TCL Organics and TAL Metals analyses under FedEx Airbill No. 8598 0210 1578 by RST 2 personnel.

For further details, refer to the Chain of Custody Records and FedEx Airbills in Attachment C.

5. On-Site Personnel:

<u>Name</u>	<u>Representing</u>	<u>Duties on Site</u>
David Rosoff	U.S. EPA	On-Scene Coordinator
Sayed Iqbal	Region II RST 2	Site Project Manager, Sample Collection and Management
John Brennan	Region II RST	Site QA/QC, Sample Collection and Management, Site H&S, Locational Data Collection
Jeffrey Jager	Region II RST	Sample Collection

6. Investigation Summary:

The goal of this Removal Assessment was to follow up on an investigation conducted by EPA’s National Enforcement Investigation Center (NEIC) and to determine the levels, if any, of asbestos, lead, and Target Compound List Semi-Volatile Organic Compounds (TCL-SVOCs) possibly present within the debris pile (fines), surface soils surrounding the debris pile, surface soils located on three adjacent properties (string bean field and residential property), and surface soils in the flood plain of the Mohawk River. These areas are depicted in Figure 2, Sample Location Map, located in Attachment A.

7. Investigation Review and Methodology:

Debris Pile

A visual inspection of the debris pile demonstrated that the entire pile appeared to be comprised of two distinct sections. The “old” portion of the debris pile appeared to be made up of construction and concrete debris. The “new” portion of the debris pile appears to have been added later and is comprised of shredded construction debris. RST 2 used Global Positioning System (GPS) technology to measure the perimeter of the entire debris pile. Based on these measurements, RST 2 calculated the perimeter of the new debris pile to be 900 feet and the area to be 48,000 square feet. The perimeter of the entire debris pile (old and new sections) was measured at 1,200 feet and the area at 75,500 square feet.

Debris Sampling

RST 2 collected a total of 11 debris samples from the exposed sides of the debris pile, including one duplicate sample (FA-DF-011). Each sample was analyzed for TCL-SVOCs and lead. Two samples (FA-DF-005 and FA-DF-010) were also submitted for asbestos analysis, California Air Resources Board (CARB) Method 435 (Refer to Table 1). Preliminary analytical data for these samples can be found in Tables 3, 4, and 5, Attachment E.

The debris pile was electronically measured using GPS technology. The approximate exposed perimeter of the debris pile was than calculated as 500 feet. Based on this, the OSC decided to collect a debris sample from the exposed sidewall of the debris pile at intervals of 100 feet. This totaled seven debris samples including one duplicate sample. Three additional debris samples were collected from random locations, running west to east, on top of the debris piles and one additional debris sample were collected from one of the newer, unlevelled piles of debris (Refer to Figure 2).

The debris pile consisted of shredded construction debris. The debris pile samples were screened through a 10um sieve prior to homogenization and collection. The material that passed through the sieve (fines) was submitted for analysis. The larger material was discarded.

Soil Sampling

RST 2 collected surface soil samples from several locations, including around the debris pile, the flood plain of the Mohawk River and from three adjacent properties. Samples were collected using new, clean plastic scoops and homogenized in new, clean plastic bags before being placed in glass sample jars. In each situation, RST 2 collected the soil sample from 0 to 1 inches below the surface, in areas where the soil was exposed with little vegetative growth. Since these exposed areas were normally small in size, RST 2 collected each sample as a composite from at least five locations of exposed soils in the direct vicinity of the documented sample location (see Table 2, Attachment D).

Surface Soil Sampling – Soil Surrounding The Debris Pile

RST 2 collected a total of 13 surface soil samples, including one duplicate sample (FA-S-013) from the soils located directly adjacent to the exposed sides of the debris pile (Refer to Table 1 and Figure 2). The purpose of collecting these samples was to determine if asbestos, lead, or semi-volatile organic compounds were migrating from the debris pile into the nearby soils. Each soil sample was analyzed for asbestos, lead, and SVOCs. Preliminary analytical data for these samples can be found in Tables 3, 4, and 5, Attachment E.

The debris pile was measured using GPS technology. The approximate exposed perimeter of the debris pile was calculated by RST 2 to be 500 feet. Based on this calculation, 12 soil samples including one duplicate (FA-S-013) were collected from below the exposed sidewall of the debris pile at intervals of 50 feet. One additional soil sample (FA-S-012) was collected from an area of oily,

white, leachate material that exhibited a strong sulfur odor. The area also was surrounded by several dead birds. Based on these observations, the OSC requested that RST 2 return to the Site and collect an additional sample from FA-S-012 for full TCL Organics and TAL Metals analysis. RST 2 returned to the Site and collected the additional sample (FA-S-012A) on August 7, 2007. A photograph of the leachate material can be found in Attachment F, Photographic Documentation, page 27. Preliminary analytical data for this sample is provided in Table 6, Attachment E.

Surface Soil Sampling – Farm Area

RST 2 collected a total of 18 surface soil samples, including two duplicate samples (FA-FARM-013 and FA-FARM-018). Refer to Table 1 and Figures 2 for details. These samples were collected to determine if asbestos or lead potentially contained in the debris pile were migrating onto downwind adjacent properties. The predominant wind direction along Southside Road is reportedly west to east.

Three soil samples were collected from the string bean field, located directly east of the debris pile and seven soil samples were collected from the open property located to the east of the string bean field. Two soil samples were collected from the residential property (No. 3761 Southside Road) which adjoins the open property to the east. In addition, three soil samples were collected from the surface of what was believed to be an older portion of the debris pile and one sample was collected at the western entrance of the barn on the Site. These samples (FA-FARM-001 to -003; FA-FARM-017) were grouped as Farm Area samples for the purpose of analytical classification. Each sample was analyzed for asbestos and lead. Soil samples FA-FARM-016 and -017 were analyzed for asbestos only. Preliminary analytical data for these samples can be found in Tables 3 and 4, Attachment E.

Surface Soil Sampling – Flood Plain

RST 2 collected a total of nine surface soil samples from the area classified during this sampling event as the Flood Plain. The Flood Plain was identified as the property north of the Site between the debris pile and the Mohawk River. The edge of the Mohawk River is approximately 300 feet from the debris pile. Three samples (FA-FP-001 to FA-FP-003) were collected from along the banks of the Mohawk River at the base of run-off areas, three samples (FA-FP-004 to FA-FP-006) were collected from within the mowed path that runs parallel to the Mohawk River and three samples (FA-FP-007 to FA-FP-009) were collected from the walking path between the break in the tree line that is located approximately 70 feet to the northeast of the debris pile (Refer to Table 1 and Figure 2). The purpose of collecting these samples was to determine if asbestos or lead were being transported from the debris pile into the flood plain and perhaps into the Mohawk River. Each sample was analyzed for asbestos via CARB 435 and lead. Preliminary analytical data for these samples can be found in Tables 3 and 4, Attachment E.

Rinsate Blank

One Rinsate Blank (RIN-001) was collected from the stainless steel sieves on August 1, 2007, using Distilled / De-ionized water. The sample was submitted for asbestos, lead and TCL-SVOCs analyses.

8. Discussion of Draft Analytical Results:**Asbestos**

Asbestos was not detected in any of the 42 debris or soil samples that were submitted for Polarized Light Microscopy (PLM) analysis by CARB 435. Eleven samples were then selected for asbestos analysis via Transmission Electron Microscopy (TEM) analysis. All eleven samples were reported below 0.1% asbestos. Preliminary analytical data can be found in Table 3, Attachment E.

Lead

Forty-nine debris and soil samples were submitted for total lead analysis. A breakdown of the preliminary analytical data is as follows:

Sample Matrix	Total Samples	Preliminary Analytical Data Range
Debris Pile	11	270 to 7,700 mg/kg
Old Debris Pile	3	36 to 110 mg/kg
Soil Surrounding The Debris Pile	13	7.2 to 88 mg/kg
Flood Plain	3	7.3 to 10 mg/kg
Mowed Path	3	22 to 26 mg/kg
Walking Path	3	54 to 120 mg/kg
No. 3761 Southside Road	2	23 to 82 mg/kg
Open Field	7	24 to 43 mg/kg
String Bean Field	4	19 to 28 mg/kg

Preliminary analytical data can be found in Table 4, Attachment E. The New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) No. 4046 (see Attachment G) lists the Recommended Soil Cleanup Objective for lead as site background levels.

Semi-Volatile Organic Compounds**Debris Samples**

Numerous SVOCs were detected in the debris pile samples. SVOCs that exceeded TAGM 4046 (see Attachment G) levels included Dimethylphthlate (up to 3,900 ug/kg), Benzo(k)fluoranthene (up to 6,900 ug/kg), Benzo(a)anthracene (up to 7,600 ug/kg), Benzo(a)pyrene (up to 7,600 ug/kg), and Dibenzo(a,h)anthracene (up to 1,400 ug/kg). The later three were exceeded in all eleven debris samples. It should be noted that not every SVOC that was detected had a corresponding TAGM 4046 level. Further details are located in Table 5.

Soil Samples – Soil Surrounding The Debris Pile

Numerous SVOCs were detected in the soil samples that were collected around the debris pile. SVOCs that exceeded TAGM 4046 (see Attachment G) levels included Benzo(a)anthracene (up to 540 ug/kg), Benzo(a)pyrene (up to 570 ug/kg), and Dibenzo(a,h)anthracene (up to 190 ug/kg). Benzo(a)pyrene was exceeded in every soil sample. It should be noted that not every SVOC that was detected had a corresponding TAGM 4046 level. Further details are located in Table 5.

9. Locational Data:

RST 2 used GPS technology to electronically document sample locations and the locations of significant features on the Site. Locational data was collected using a Trimble Geo-XT® GPS. A minimum of four satellites were used to collect location data, with a maximum positional dilution of precision (PDOP) of seven. Data were differentially corrected and projected to and displayed in Latitude / Longitude, WGS 1984 datum, decimal degrees. Refer to Table 2, Attachment D for details.

10. Removal Assessment Photographic Documentation:

Photographic documentation of the sampling event can be found in Attachment F.

List of Attachments

Attachment A contains the Figure 1, Site Location Map and Figure 2, Sample Location Map;

Attachment B contains Table 1 – Sample Collection Information;

Attachment C contains the Chain of Custody Records and FedEx Airbills;

Attachment D contains Table 2 – Locational Data;

Attachment E contains the Analytical Data Tables:

Table 3 – Draft Asbestos Data

Table 4 – Draft Lead Data

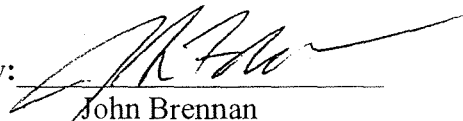
Table 5 – Draft Semi-Volatile Organic Compound Data

Table 6 – Sample FA-S-012A, Detected Values (Draft);

Attachment F contains the Photographic Documentation and;

Attachment G contains NYSDEC TAGM No. 4046.

11. Report Prepared by:

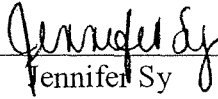


John Brennan
RST 2 Group Leader

Date:

9/19/07

Report Reviewed by:



Jennifer Sy
RST 2 Readiness Coordinator

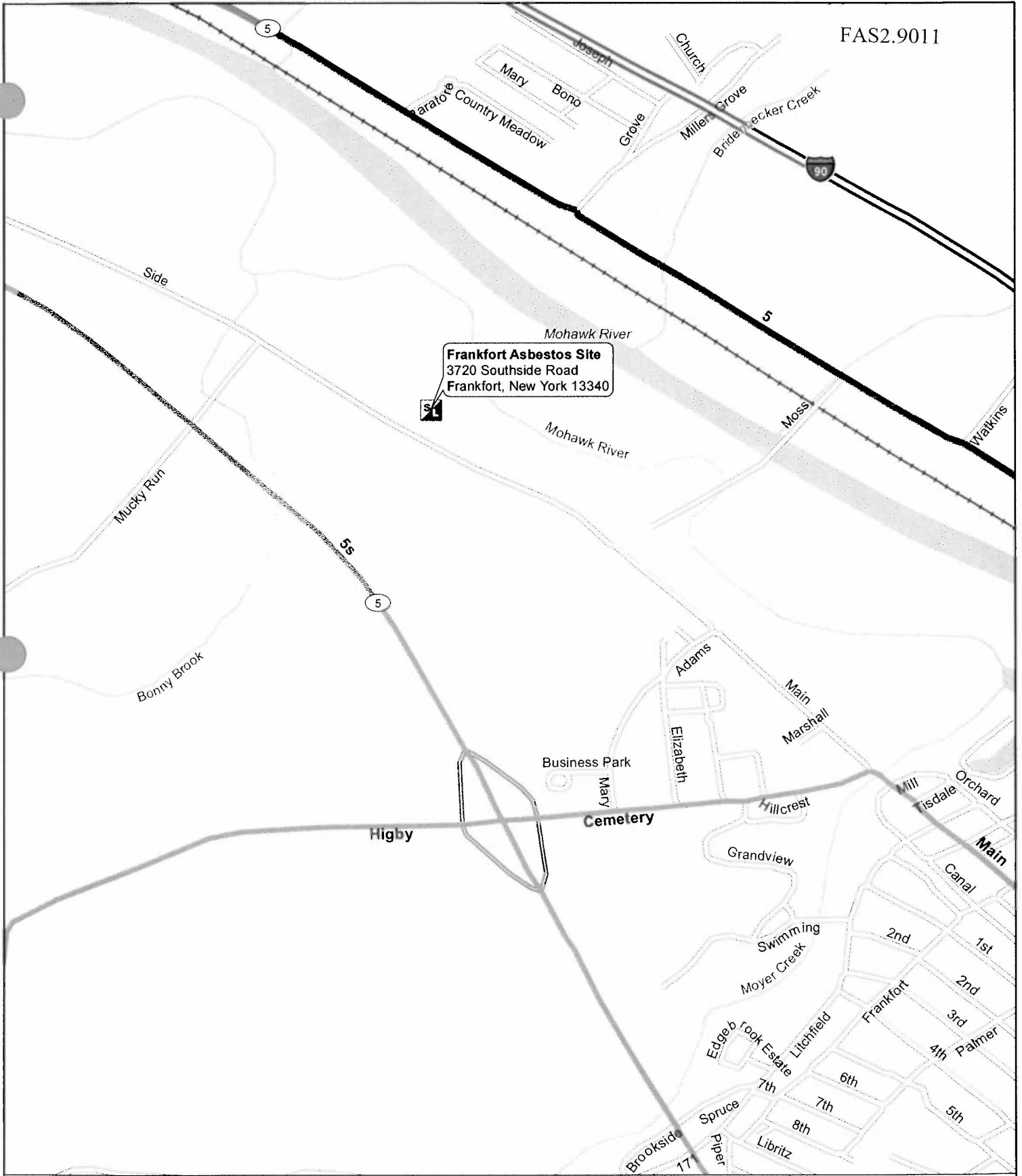
Date:

9/19/07

ATTACHMENT A


SITE FIGURES

Figure 1 – Site Location Map
Figure 2 – Sample Location Map



Frankfort Asbestos Site
 3720 Southside Road
 Frankfort, New York 13340

Legend

 Site Location



0 0.2 0.4 0.8 Miles



Weston Solutions, Inc.
 Federal Programs Division

In Association With
 Innovative Technical Solutions, Inc.,
 Scientific and Environmental Associates, Inc.
 and Avatar Environmental, LLC.

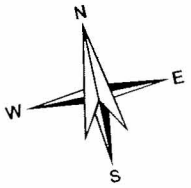
Figure 1:
Site Location Map

FRANKFORT ASBESTOS SITE
 FRANKFORT, NEW YORK

U.S. ENVIRONMENTAL PROTECTION AGENCY
 REMOVAL SUPPORT TEAM 2
 CONTRACT # EP-W-06-072

DATE MODIFIED: 07/10/2007	GIS ANALYST: F. CAMPBELL
EPA OSC: J. HARMON	RST SPM: S. IOBAL
FILENAME: FRANKFORT ASBESTOS.MXD	

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SCALE

1:1,460

LEGEND

- ◆ Debris Pile Samples (Fines)
- ◆ Farm Area and Older Debris Pile Soil Samples
- ◆ Flood Plane Soil Samples
- ◆ Soil Samples Surrounding the Debris Pile
- Mowed Path
- Path
- Concrete Pile
- Debris Pile (Shredded Material)
- Older Debris Pile (Construction Material)
- Open Field
- String Bean Field
- Residential Property



**FIGURE 2:
SAMPLE LOCATION MA**

FRANKFORT ASBESTOS SITE
FRANKFORT, NEW YORK

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
REMOVAL SUPPORT TEAM 2
CONTRACT # EP-W-06-072

Weston Solutions, Inc.
Federal Programs Division

In Association With
Scientific and Environmental Associates, I
Innovative Technical Solutions, Inc. &
Avatar Environmental, LLC

GIS ANALYST	F. CAMPBELL
EPA OSC	D. ROSOFF
RST 2 SEM	J. BRENNAN
FILENAME	FRANKFORT ASBESTOS.MX
FIGURE	2
REVISION	0
DATE MODIFIED	08/07/2007



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ATTACHMENT B

**TABLE 1
SAMPLE COLLECTION INFORMATION**

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Frankfort Asbestos Site
Table 1
Sample Collection Information

Sample ID	Location	Sample Date	Sample Time	Analysis	Notes
FA-DF-001	Debris Pile	8/1/2007	0710	Lead	None
FA-DF-001	Debris Pile	8/1/2007	0710	TCL SVOCs	None
FA-DF-002	Debris Pile	8/1/2007	0725	Lead	None
FA-DF-002	Debris Pile	8/1/2007	0725	TCL SVOCs	None
FA-DF-003	Debris Pile	8/1/2007	0745	Lead	None
FA-DF-003	Debris Pile	8/1/2007	0745	TCL SVOCs	None
FA-DF-004	Debris Pile	8/1/2007	0820	Lead	None
FA-DF-004	Debris Pile	8/1/2007	0820	TCL SVOCs	None
FA-DF-005	Debris Pile	8/1/2007	0920	Lead	None
FA-DF-005	Debris Pile	8/1/2007	0920	TCL SVOCs	None
FA-DF-005	Debris Pile	8/1/2007	0920	Asbestos (PLM)	None
FA-DF-006	Debris Pile	8/1/2007	0950	Lead	MS/MSD Analysis
FA-DF-006	Debris Pile	8/1/2007	0950	TCL SVOCs	MS/MSD Analysis
FA-DF-007	Debris Pile	8/1/2007	1000	Lead	None
FA-DF-007	Debris Pile	8/1/2007	1000	TCL SVOCs	None
FA-DF-008	Debris Pile	8/1/2007	1015	Lead	None
FA-DF-008	Debris Pile	8/1/2007	1015	TCL SVOCs	None
FA-DF-009	Debris Pile	8/1/2007	1030	Lead	None
FA-DF-009	Debris Pile	8/1/2007	1030	TCL SVOCs	None
FA-DF-010	Debris Pile	8/1/2007	1040	Lead	None
FA-DF-010	Debris Pile	8/1/2007	1040	TCL SVOCs	None
FA-DF-010	Debris Pile	8/1/2007	1040	Asbestos (PLM)	None
FA-DF-011	Debris Pile	8/1/2007	1055	Lead	Duplicate of FA-DF-005
FA-DF-011	Debris Pile	8/1/2007	1055	TCL SVOCs	Duplicate of FA-DF-005
FA-FARM-001	Old DebrisPile	8/1/2007	0935	Lead	None
FA-FARM-001	Old DebrisPile	8/1/2007	0935	Asbestos (PLM)	None
FA-FARM-002	Old DebrisPile	8/1/2007	0930	Lead	None
FA-FARM-002	Old DebrisPile	8/1/2007	0930	Asbestos (PLM)	None
FA-FARM-003	Old DebrisPile	8/1/2007	0925	Lead	None
FA-FARM-003	Old DebrisPile	8/1/2007	0925	Asbestos (PLM)	None
FA-FARM-004	String Bean Field	8/2/2007	0920	Lead	None
FA-FARM-004	String Bean Field	8/2/2007	0920	Asbestos (PLM)	None
FA-FARM-005	String Bean Field	8/2/2007	0915	Lead	MS/MSD Analysis
FA-FARM-005	String Bean Field	8/2/2007	0915	Asbestos (PLM)	None
FA-FARM-006	String Bean Field	8/2/2007	0922	Lead	None
FA-FARM-006	String Bean Field	8/2/2007	0922	Asbestos (PLM)	None
FA-FARM-007	Open Field	8/2/2007	0910	Lead	None
FA-FARM-007	Open Field	8/2/2007	0910	Asbestos (PLM)	None
FA-FARM-008	Open Field	8/2/2007	0910	Lead	None
FA-FARM-008	Open Field	8/2/2007	0910	Asbestos (PLM)	None
FA-FARM-009	Open Field	8/2/2007	0905	Lead	None
FA-FARM-009	Open Field	8/2/2007	0905	Asbestos (PLM)	None
FA-FARM-010	Open Field	8/2/2007	0910	Lead	None
FA-FARM-010	Open Field	8/2/2007	0910	Asbestos (PLM)	None
FA-FARM-011	Open Field	8/2/2007	0907	Lead	None
FA-FARM-011	Open Field	8/2/2007	0907	Asbestos (PLM)	None
FA-FARM-012	Open Field	8/2/2007	0912	Lead	None
FA-FARM-012	Open Field	8/2/2007	0912	Asbestos (PLM)	None
FA-FARM-013	Open Field	8/2/2007	0906	Lead	Duplicate of FA-FARM-006
FA-FARM-013	Open Field	8/2/2007	0906	Asbestos (PLM)	Duplicate of FA-FARM-006
FA-FARM-014	No.3761 Southside Road	8/2/2007	0900	Lead	None
FA-FARM-014	No.3761 Southside Road	8/2/2007	0900	Asbestos (PLM)	None
FA-FARM-015	No.3761 Southside Road	8/2/2007	0900	Lead	None
FA-FARM-015	No.3761 Southside Road	8/2/2007	0900	Asbestos (PLM)	None
FA-FARM-016	Open Field	8/2/2007	0905	Asbestos (PLM)	Additional Sample Added for only Asbestos Analysis
FA-FARM-017	West Exterior of Barn	8/1/2007	0920	Asbestos (PLM)	Additional Sample Added for only Asbestos Analysis
FA-FARM-018	String Bean Field	8/2/2007	0925	Lead	Duplicate of FA-FARM-004
FA-FARM-018	String Bean Field	8/2/2007	0925	Asbestos (PLM)	Duplicate of FA-FARM-004
FA-FP-001	Flood Plain	8/1/2007	0950	Lead	None

Frankfort Asbestos Site
Table 1
Sample Collection Information

Sample ID	Location	Sample Date	Sample Time	Analysis	Notes
FA-FP-001	Flood Plain	8/1/2007	0950	Asbestos (PLM)	None
FA-FP-002	Flood Plain	8/1/2007	0958	Lead	None
FA-FP-002	Flood Plain	8/1/2007	0958	Asbestos (PLM)	None
FA-FP-003	Flood Plain	8/1/2007	1010	Lead	None
FA-FP-003	Flood Plain	8/1/2007	1010	Asbestos (PLM)	None
FA-FP-004	Mowed Path	8/2/2007	0805	Lead	None
FA-FP-004	Mowed Path	8/2/2007	0805	Asbestos (PLM)	None
FA-FP-005	Mowed Path	8/2/2007	0810	Lead	None
FA-FP-005	Mowed Path	8/2/2007	0810	Asbestos (PLM)	None
FA-FP-006	Mowed Path	8/2/2007	0815	Lead	None
FA-FP-006	Mowed Path	8/2/2007	0815	Asbestos (PLM)	None
FA-FP-007	Path	8/2/2007	0820	Lead	None
FA-FP-007	Path	8/2/2007	0820	Asbestos (PLM)	None
FA-FP-008	Path	8/2/2007	0820	Lead	None
FA-FP-008	Path	8/2/2007	0820	Asbestos (PLM)	None
FA-FP-009	Path	8/2/2007	0818	Lead	None
FA-FP-009	Path	8/2/2007	0818	Asbestos (PLM)	None
FA-S-001	Soil Surrounding the Debris Pile	8/1/2007	0705	Lead	None
FA-S-001	Soil Surrounding the Debris Pile	8/1/2007	0705	TCL SVOCS	None
FA-S-001	Soil Surrounding the Debris Pile	8/1/2007	0705	Asbestos (PLM)	None
FA-S-002	Soil Surrounding the Debris Pile	8/1/2007	0710	Lead	MS/MSD Analysis
FA-S-002	Soil Surrounding the Debris Pile	8/1/2007	0710	TCL SVOCS	MS/MSD Analysis
FA-S-002	Soil Surrounding the Debris Pile	8/1/2007	0710	Asbestos (PLM)	None
FA-S-003	Soil Surrounding the Debris Pile	8/1/2007	0717	Lead	None
FA-S-003	Soil Surrounding the Debris Pile	8/1/2007	0717	TCL SVOCS	None
FA-S-003	Soil Surrounding the Debris Pile	8/1/2007	0717	Asbestos (PLM)	None
FA-S-004	Soil Surrounding the Debris Pile	8/1/2007	0721	Lead	None
FA-S-004	Soil Surrounding the Debris Pile	8/1/2007	0721	TCL SVOCS	None
FA-S-004	Soil Surrounding the Debris Pile	8/1/2007	0721	Asbestos (PLM)	None
FA-S-005	Soil Surrounding the Debris Pile	8/1/2007	0730	Lead	None
FA-S-005	Soil Surrounding the Debris Pile	8/1/2007	0730	TCL SVOCS	None
FA-S-005	Soil Surrounding the Debris Pile	8/1/2007	0730	Asbestos (PLM)	None
FA-S-006	Soil Surrounding the Debris Pile	8/1/2007	0737	Lead	None
FA-S-006	Soil Surrounding the Debris Pile	8/1/2007	0737	TCL SVOCS	None
FA-S-006	Soil Surrounding the Debris Pile	8/1/2007	0737	Asbestos (PLM)	None
FA-S-007	Soil Surrounding the Debris Pile	8/1/2007	0745	Lead	None
FA-S-007	Soil Surrounding the Debris Pile	8/1/2007	0745	TCL SVOCS	None
FA-S-007	Soil Surrounding the Debris Pile	8/1/2007	0745	Asbestos (PLM)	None
FA-S-008	Soil Surrounding the Debris Pile	8/1/2007	0750	Lead	None
FA-S-008	Soil Surrounding the Debris Pile	8/1/2007	0750	TCL SVOCS	None
FA-S-008	Soil Surrounding the Debris Pile	8/1/2007	0750	Asbestos (PLM)	None
FA-S-009	Soil Surrounding the Debris Pile	8/1/2007	0805	Lead	None
FA-S-009	Soil Surrounding the Debris Pile	8/1/2007	0805	TCL SVOCS	None
FA-S-009	Soil Surrounding the Debris Pile	8/1/2007	0805	Asbestos (PLM)	None
FA-S-010	Soil Surrounding the Debris Pile	8/1/2007	0815	Lead	None
FA-S-010	Soil Surrounding the Debris Pile	8/1/2007	0815	TCL SVOCS	None
FA-S-010	Soil Surrounding the Debris Pile	8/1/2007	0815	Asbestos (PLM)	None
FA-S-011	Soil Surrounding the Debris Pile	8/1/2007	0810	Lead	None
FA-S-011	Soil Surrounding the Debris Pile	8/1/2007	0810	TCL SVOCS	None
FA-S-011	Soil Surrounding the Debris Pile	8/1/2007	0810	Asbestos (PLM)	None
FA-S-012	Soil Surrounding the Debris Pile	8/1/2007	0733	Lead	None
FA-S-012	Soil Surrounding the Debris Pile	8/1/2007	0733	TCL SVOCS	None
FA-S-012	Soil Surrounding the Debris Pile	8/1/2007	0733	Asbestos (PLM)	None
FA-S-012A	Soil Surrounding the Debris Pile	8/7/2007	1030	TCL VOCS	Sample Re-collected on August 7 for Additional Analysis
FA-S-012A	Soil Surrounding the Debris Pile	8/7/2007	1030	TCL SVOCS	Sample Re-collected on August 7 for Additional Analysis

Frankfort Asbestos Site
Table 1
Sample Collection Information

Sample ID	Location	Sample Date	Sample Time	Analysis	Notes
FA-S-012A	Soil Surrounding the Debris Pile	8/7/2007	1030	TCL Pesticides	Sample Re-collected on August 7 for Additional Analysis
FA-S-012A	Soil Surrounding the Debris Pile	8/7/2007	1030	TCL PCBs	Sample Re-collected on August 7 for Additional Analysis
FA-S-012A	Soil Surrounding the Debris Pile	8/7/2007	1030	TCL-Herbicides	Sample Re-collected on August 7 for Additional Analysis
FA-S-012A	Soil Surrounding the Debris Pile	8/7/2007	1030	TAL Metals	Sample Re-collected on August 7 for Additional Analysis
FA-S-013	Soil Surrounding the Debris Pile	8/1/2007	0820	Lead	Duplicate of FA-S-009
FA-S-013	Soil Surrounding the Debris Pile	8/1/2007	0820	TCL SVOCS	Duplicate of FA-S-009
FA-S-013	Soil Surrounding the Debris Pile	8/1/2007	0820	Asbestos (PLM)	Duplicate of FA-S-009
RIN-001	Rinsate Blank	8/1/2007	1700	Lead	None
RIN-001	Rinsate Blank	8/1/2007	1700	TCL SVOCS	None
RIN-001	Rinsate Blank	8/1/2007	1700	Asbestos (PLM)	None

Notes:

PLM - Polarized Light Microscopy
TCL - Target Compound List
VOCs - Volatile Organic Compounds
SVOCs - Semivolatile Organic Compounds
PCBs - Polychlorinated Biphenyls
TAL - Target Analyte List

ATTACHMENT C
CHAIN OF CUSTODY RECORDS
AND
FEDEX AIRBILL

EMSL

Attn: Scott Ross
 RFP No. 036
 PO No. 0059547

CHAIN OF CUSTODY RECORD

Weston Solutions, Inc.
 1090 King Georges Post Road
 Edison, NJ 08837

No: FRANK080207

Contact Name: John Brennan

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MSD
	FA-DF-001	DEBRIS PILE	Lead	SOIL	8/1/2007	1			
	FA-DF-001	DEBRIS PILE	TCL SVOCs	SOIL	8/1/2007	1			
	FA-DF-002	DEBRIS PILE	Lead	SOIL	8/1/2007	1			
	FA-DF-002	DEBRIS PILE	TCL SVOCs	SOIL	8/1/2007	1			
	FA-DF-003	DEBRIS PILE	LEAD	SOIL	8/1/2007	1			
	FA-DF-003	DEBRIS PILE	TCL SVOCs	SOIL	8/1/2007	1			
	FA-DF-004	DEBRIS PILE	LEAD	SOIL	8/1/2007	1			
	FA-DF-004	DEBRIS PILE	TCL SVOCs	SOIL	8/1/2007	1			
	FA-DF-005	DEBRIS PILE	LEAD	SOIL	8/1/2007	1			
	FA-DF-005	DEBRIS PILE	TCL SVOCs	SOIL	8/1/2007	1			
	FA-DF-005	DEBRIS PILE	ASBESTOS PLM	SOIL	8/1/2007	1			
	FA-DF-006	DEBRIS PILE	LEAD	SOIL	8/1/2007	1			Y
	FA-DF-006	DEBRIS PILE	TCL SVOCs	SOIL	8/1/2007	1			Y
	FA-DF-007	DEBRIS PILE	LEAD	SOIL	8/1/2007	1			
	FA-DF-007	DEBRIS PILE	TCL SVOCs	SOIL	8/1/2007	1			
	FA-DF-008	DEBRIS PILE	LEAD	SOIL	8/1/2007	1			
	FA-DF-008	DEBRIS PILE	TCL SVOCs	SOIL	8/1/2007	1			
	FA-DF-009	DEBRIS PILE	LEAD	SOIL	8/1/2007	1			
	FA-DF-009	DEBRIS PILE	TCL SVOCs	SOIL	8/1/2007	1			

Special Instructions: Run samples selected for "Asbestos (PLM)" via CARB 435 - 1000 Point Count with analytical sensitivity below 0.25%. Following review of the results by WESTON, several samples will be selected for TEM analysis. ONE WEEK VERBAL TAT.

**SAMPLES TRANSFERRED FROM
 CHAIN OF CUSTODY #**

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
ALL/SMP R LABS	<i>[Signature]</i>	8/2/07	<i>[Signature]</i>	8/2/07	1000						

EMSL

Attn: Scott Ross
 RFP No. 036
 PO No. 0059547

CHAIN OF CUSTODY RECORD

Weston Solutions, Inc.
 1090 King Georges Post Road
 Edison, NJ 08837

No: FRANK080207

Contact Name: John Brennan

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MSD
	FA-S-001	SOIL	TCL SVOCs	SOIL	8/1/2007	1			
	FA-S-001	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-002	SOIL	LEAD	SOIL	8/1/2007	1			Y
	FA-S-002	SOIL	TCL SVOCs	SOIL	8/1/2007	1			Y
	FA-S-002	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-003	SOIL	LEAD	SOIL	8/1/2007	1			
	FA-S-003	SOIL	TCL SVOCs	SOIL	8/1/2007	1			
	FA-S-003	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-004	SOIL	LEAD	SOIL	8/1/2007	1			
	FA-S-004	SOIL	TCL SVOCs	SOIL	8/1/2007	1			
	FA-S-004	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-005	SOIL	LEAD	SOIL	8/1/2007	1			
	FA-S-005	SOIL	TCL SVOCs	SOIL	8/1/2007	1			
	FA-S-005	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-006	SOIL	LEAD	SOIL	8/1/2007	1			
	FA-S-006	SOIL	TCL SVOCs	SOIL	8/1/2007	1			
	FA-S-006	SOIL	ASBESTOS (PLM)	SOIL	8/1/2007	1			
	FA-S-007	SOIL	LEAD	SOIL	8/1/2007	1			
	FA-S-007	SOIL	TCL SVOCs	SOIL	8/1/2007	1			

Special Instructions: Run samples selected for "Asbestos (PLM)" via CARB 435 - 1000 Point Count with analytical sensitivity below 0.25%. Following review of the results by WESTON, several samples will be selected for TEM analysis. ONE WEEK VERBAL TAT.

SAMPLES TRANSFERRED FROM
 CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
ALL / SWEEP TO LABS	<i>[Signature]</i>	7/2/07	<i>[Signature]</i>	8/2/07	1000						

EMSL

Attn: Scott Ross
 RFP No. 036
 PO No. 0059547

CHAIN OF CUSTODY RECORD

Weston Solutions, Inc.
 1090 King Georges Post Road
 Edison, NJ 08837

No: FRANK080207

Contact Name: John Brennan

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MSD
	RIN-001	RINSATE	LEAD	RINSATE	8/1/2007	1		HNO ₃	
	RIN-001	RINSATE	TCL-SVOCs	RINSATE	8/1/2007	1			
	RIN-001	RINSATE	ASBESTOS (TEM)	RINSATE	8/1/2007	1			

Special Instructions: Run samples selected for "Asbestos (PLM)" via CARB 435 - 1000 Point Count with analytical sensitivity below 0.25%. Following review of the results by WESTON, several samples will be selected for TEM analysis. ONE WEEK VERBAL TAT.

SAMPLES TRANSFERRED FROM
 CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
ALL / STAMP ALL / TOLAN	<i>[Signature]</i>	8/1/07	<i>[Signature]</i>	8/2/07	10:00						

EMSL

Attn: Scott Ross

RFP No. 036

PO No. 0059547

CHAIN OF CUSTODY RECORD

Weston Solutions, Inc.

1090 King Georges Post Road

Edison, NJ 08837

No: FRANK080407

Contact Name: John Brennan

Lab #	Sample #	Location	Analyses	Matrix	Collected	Container	Preservative	Sample Time	MS/MSD
	FA-FARM-014	FARM	LEAD	SOIL	8/2/2007			09:00	
	FA-FARM-014	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:00	
	FA-FARM-015	FARM	LEAD	SOIL	8/2/2007			09:00	
	FA-FARM-015	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:00	
	FA-FARM-016	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:05	
	FA-FARM-018	FARM	LEAD	SOIL	8/2/2007			09:25	
	FA-FARM-018	FARM	ASBESTOS (PLM)	SOIL	8/2/2007			09:25	
	FA-FP-004	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:05	
	FA-FP-004	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:05	
	FA-FP-005	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:10	
	FA-FP-005	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:10	
	FA-FP-006	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:15	
	FA-FP-006	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:15	
	FA-FP-007	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:20	
	FA-FP-007	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:20	
	FA-FP-008	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:20	
	FA-FP-008	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:20	
	FA-FP-009	FLOOD PLAIN	LEAD	SOIL	8/2/2007			08:18	
	FA-FP-009	FLOOD PLAIN	ASBESTOS (PLM)	SOIL	8/2/2007			08:18	

Special Instructions: Run samples selected for "Asbestos (PLM)" via CARB 435 - 1000 Point Count with analytical sensitivity below 0.25%. Following review of the results by WESTON, several samples will be selected for TEM analysis. ONE WEEK VERBAL TAT.	SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #
---	--

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All Lab. samples picked up	Capri JAM	8/2/07	Adh Cyr	8/3/07	2:40						

FedEx Express *US Airbill*

FedEx Tracking Number

8598 0210 1567

1 From Please print and press hard.

Date 8/2/07 Sender's FedEx Account Number _____

Sender's Name JOHN BRENNAN Phone (201) 585-4425

Company WESTON SOLUTIONS, INC.

Address 1090 King Georges Post Road Dept./Floor/Suite/Room _____

City EDISON State NJ ZIP 08837

2 Your Internal Billing Reference
First 24 characters will appear on invoice. 20401 015 001 1023 OPTIONAL

3 To

Recipient's Name SCOTT ROSS / RECEIVING Phone (800) 220-3675

Company EMSL ANALYTICAL

Recipient's Address 107 MADRON AVENUE Dept./Floor/Suite/Room _____

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address _____
To request a package be held at a specific FedEx location, print FedEx address here.

City WESTMONT State NJ ZIP 08108

4a Express Package Service

FedEx Priority Overnight
Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

FedEx Standard Overnight
Next business afternoon.* Saturday Delivery NOT available.

FedEx 2Day
Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected. FedEx Envelope rate not available. Minimum charge: One-pound rate.

FedEx Express Saver
Third business day.** Saturday Delivery NOT available.

4b Express Freight Service

FedEx 1Day Freight*
Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

FedEx 2Day Freight
Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

* Call for Confirmation.

5 Packaging

FedEx Envelope* **FedEx Pak*** **FedEx Box***

* Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.

6 Special Handling Include FedEx addn

SATURDAY Delivery
NOT Available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 2Day Freight.

HOLD Weekday at FedEx Location
NOT Available for FedEx First Overnight.

Does this shipment contain dangerous goods?
One box must be checked.

No Yes Yes Dry

As per attached Shipper's Declaration. Shipper's Declaration not required.

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

Sender **Recipient** **Third Party**

Sender Acct. No. in Section 1 will be billed.

FedEx Acct. No. 154581227

Credit Card No. _____

Total Packages 2 Total Weight _____ Total Decla: _____

*Our liability is limited to \$100 unless you declare a higher value. See back for details. By using this service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms.

8 NEW Residential Delivery Signature Options

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Anyone at recipient's address may sign for delivery. Fee applies.

Indirect Sign:
If no one is avail, recipient's address at a neighboring sign for delivery.



Store your addresses at fedex.com
 Simplify your shipping. Manage your account. Access all the tools you need.

FedEx US Airbill
Express

FedEx Tracking Number 8598 0210 1578

1 From Please print and press hard.
Date 8/7/06 Sender's FedEx Account Number
Sender's Name JOHN BRENNAN Phone (732) 585-4425
Company WESTON SOLUTIONS, INC.
Address 1090 King Georges Post Road Dept./Floor/Suite/Room
City EDISON State NJ ZIP 08837

2 Your Internal Billing Reference First 24 characters will appear on invoice. 204010250071023 OPTIONAL

3 To
Recipient's Name CARLY DOWD / RECEIVING Phone (919) 379-4089
Company COMPUchem LABS
Recipient's Address 501 MADISON AVE. Dept./Floor/Suite/Room
We call to P.O. boxes or P.O. ZIP codes.
Address
To request a package be held at a specific FedEx location, print FedEx address here.
City CARY State NC ZIP 27513



Schedule a pickup at fedex.com
Simplify your shipping. Manage your account. Access all the tools you need.

Sender's Copy

4a Express Package Service Packages up to 150 lbs.

FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
 FedEx Standard Overnight Next business afternoon.* Saturday Delivery NOT available.
 FedEx First Overnight Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
 FedEx 2Day Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
 FedEx Express Saver Third business day.* Saturday Delivery NOT available.
* To most locations. FedEx Envelope rate not available. Minimum charge: One-pound rate.

4b Express Freight Service Packages over 150 lbs.

FedEx 1Day Freight* Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
 FedEx 2Day Freight Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
 FedEx 3Day Freight Third business day.** Saturday Delivery NOT available.
* Call for Confirmation. ** To most locations.

5 Packaging
 FedEx Envelope* FedEx Pak* Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. FedEx Box FedEx Tube Other
* Declared value limit \$500.

6 Special Handling Include FedEx address in Section 3.

SATURDAY Delivery NOT Available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
 HOLD Weekday at FedEx Location NOT Available for FedEx First Overnight and FedEx 2Day to select locations.
 HOLD Saturday at FedEx Location Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
Does this shipment contain dangerous goods? One box must be checked.
 No Yes As per attached Shipper's Declaration. Yes Shipper's Declaration not required. Dry Ice Dry ice, 6, UN 1845 x _____ kg
Dangerous goods (including dry ice) cannot be shipped in FedEx packaging. Cargo Aircraft Only

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.
 Sender Acct. No. in Section 1 will be billed. Recipient Third Party Credit Card Cash/Check

FedEx Acct. No. 154581027 Exp. Date

Total Packages	Total Weight	Total Declared Value*
<u>1</u>	<u>34</u>	\$ <u> </u> .00

*Our liability is limited to \$100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability. FedEx Use Only

8 NEW Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

No Signature Required Package may be left without obtaining a signature for delivery.
 Direct Signature Anyone at recipient's address may sign for delivery. Fee applies.
 Indirect Signature If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. Fee applies.

520

ATTACHMENT D

**TABLE 2
LOCATIONAL DATA**

Frankfort Asbestos Site
Table 2
Locational Data

Sample ID	Longitude	Latitude
FA-FARM-001	-75.08448192	43.05096178
FA-FARM-002	-75.08454398	43.05089999
FA-FARM-003	-75.08462706	43.05079425
FA-FARM-004	-75.08412388	43.05022726
FA-FARM-005	-75.08401578	43.05033891
FA-FARM-006	-75.08390951	43.05044579
FA-FARM-007	-75.08354659	43.05010689
FA-FARM-008	-75.08338909	43.05027769
FA-FARM-009	-75.08345158	43.04990678
FA-FARM-010	-75.0831505	43.04988357
FA-FARM-011	-75.08294743	43.05001449
FA-FARM-012	-75.08306484	43.05025534
FA-FARM-014	-75.08303306	43.04978076
FA-FARM-015	-75.08280716	43.04985093
FA-FARM-016	-75.08327974	43.05008319
FA-FARM-017	-75.08529247	43.05067659
FA-FP-001	-75.08448216	43.05202832
FA-FP-002	-75.0838733	43.05177122
FA-FP-003	-75.08348439	43.05160271
FA-FP-004	-75.08360108	43.05153256
FA-FP-005	-75.0831515	43.0513615
FA-FP-006	-75.08276631	43.05120178
FA-FP-007	-75.08456131	43.05137773
FA-FP-008	-75.08436176	43.0512699
FA-FP-009	-75.0847636	43.05147782
FA-S-001	-75.08586512	43.05107564
FA-S-002	-75.08596564	43.05119517
FA-S-003	-75.08597689	43.05132775
FA-S-004	-75.08593786	43.05146267
FA-S-005	-75.08576097	43.05150597
FA-S-006	-75.08556828	43.05149535
FA-S-007	-75.08538986	43.05146603
FA-S-008	-75.08517164	43.05143458
FA-S-009	-75.08497486	43.05139217
FA-S-010	-75.08479079	43.05129565
FA-S-011	-75.08474802	43.05125184
FA-S-012	-75.08569367	43.0515085
FA-DF-001	-75.08582444	43.05109582
FA-DF-002	-75.08594385	43.05132879
FA-DF-003	-75.08575097	43.05147583
FA-DF-004	-75.08539938	43.05143484
FA-DF-005	-75.08499321	43.05136328
FA-DF-006	-75.08476743	43.05121713
FA-DF-007	-75.0857073	43.05126797
FA-DF-008	-75.08536072	43.05121857
FA-DF-009	-75.08507879	43.05112951
FA-DF-010	-75.08535165	43.05131553

•Data in Latitude / Longitude, WGS 1984, Decimal Degrees

- FA-FARM-013 is a duplicate sample of FA-FARM-006
- FA-FARM-018 is a duplicate sample of FA-FARM-004
- FA-S-013 is a duplicate sample of FA-S-009
- FA-DF-011 is a duplicate sample of FA-DF-005

ATTACHMENT E

ANALYTICAL DATA

Table 3 – Draft Asbestos Data

Table 4 – Draft Lead Data

Table 5 – Draft SVOCs Data

Table 6 – Sample FA-S-012A

**Frankfort Asbestos Site
Table 3
Draft Asbestos Analysis**

Sample ID	Location	Analysis	Results
FA-DF-005	Debris Pile	PLM(CARB 435)	None Detected
FA-DF-005	Debris Pile	TEM	<0.1%
FA-DF-010	Debris Pile	PLM(CARB 435)	None Detected
FA-DF-010	Debris Pile	TEM	<0.1%
FA-FARM-001	Old Debris Pile	PLM(CARB 435)	None Detected
FA-FARM-002	Old Debris Pile	PLM(CARB 435)	None Detected
FA-FARM-002	Old Debris Pile	TEM	<0.1%
FA-FARM-003	Old Debris Pile	PLM(CARB 435)	None Detected
FA-FARM-003	Old Debris Pile	TEM	<0.1%
FA-FARM-004	String Bean Field	PLM(CARB 435)	None Detected
FA-FARM-005	String Bean Field	PLM(CARB 435)	None Detected
FA-FARM-005	String Bean Field	TEM	<0.1%
FA-FARM-006	String Bean Field	PLM(CARB 435)	None Detected
FA-FARM-006	String Bean Field	TEM	<0.1%
FA-FARM-007	Open Field	PLM(CARB 435)	None Detected
FA-FARM-008	Open Field	PLM(CARB 435)	None Detected
FA-FARM-009	Open Field	PLM(CARB 435)	None Detected
FA-FARM-010	Open Field	PLM(CARB 435)	None Detected
FA-FARM-011	Open Field	PLM(CARB 435)	None Detected
FA-FARM-012	Open Field	PLM(CARB 435)	None Detected
FA-FARM-013	Open Field	PLM(CARB 435)	None Detected
FA-FARM-014	No.3761 Southside Road	PLM(CARB 435)	None Detected
FA-FARM-015	No.3761 Southside Road	PLM(CARB 435)	None Detected
FA-FARM-015	No.3761 Southside Road	TEM	<0.1%
FA-FARM-016	Open Field	PLM(CARB 435)	None Detected
FA-FARM-017	West Exterior of Barn	PLM(CARB 435)	None Detected
FA-FARM-018	String Bean Field	PLM(CARB 435)	None Detected
FA-FP-001	Flood Plain	PLM(CARB 435)	None Detected
FA-FP-002	Flood Plain	PLM(CARB 435)	None Detected
FA-FP-003	Flood Plain	PLM(CARB 435)	None Detected
FA-FP-004	Mowed Path	PLM(CARB 435)	None Detected
FA-FP-005	Mowed Path	PLM(CARB 435)	None Detected
FA-FP-006	Mowed Path	PLM(CARB 435)	None Detected
FA-FP-007	Path	PLM(CARB 435)	None Detected
FA-FP-007	Path	TEM	<0.1%
FA-FP-008	Path	PLM(CARB 435)	None Detected
FA-FP-009	Path	PLM(CARB 435)	None Detected
FA-S-001	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected
FA-S-001	Soil Surrounding the Debris Pile	TEM	<0.1%
FA-S-002	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected
FA-S-003	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected
FA-S-003	Soil Surrounding the Debris Pile	TEM	<0.1%
FA-S-004	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected
FA-S-005	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected
FA-S-006	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected
FA-S-006	Soil Surrounding the Debris Pile	TEM	<0.1%
FA-S-007	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected
FA-S-008	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected

Frankfort Asbestos Site
Table 3
Draft Asbestos Analysis

Sample ID	Location	Analysis	Results
FA-S-009	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected
FA-S-010	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected
FA-S-011	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected
FA-S-012	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected
FA-S-013	Soil Surrounding the Debris Pile	PLM(CARB 435)	None Detected

Notes:

PLM - Polarized Light Microscopy

CARB - California Air Resources Board

TEM- Transmission Electron Microscopy

Frankfort Asbestos Site
Table 4
Draft Lead Analysis

Sample ID	Location	Analysis	Results	Notes
FA-DF-001	Debris Pile	Total Lead	1900 mg/kg	None
FA-DF-002	Debris Pile	Total Lead	600 mg/kg	None
FA-DF-003	Debris Pile	Total Lead	490 mg/kg	None
FA-DF-004	Debris Pile	Total Lead	530 mg/kg	None
FA-DF-005	Debris Pile	Total Lead	1400 mg/kg	None
FA-DF-006	Debris Pile	Total Lead	970 mg/kg	MS/MSD Analysis
FA-DF-007	Debris Pile	Total Lead	760 mg/kg	None
FA-DF-008	Debris Pile	Total Lead	2100 mg/kg	None
FA-DF-009	Debris Pile	Total Lead	910 mg/kg	None
FA-DF-010	Debris Pile	Total Lead	270 mg/kg	None
FA-DF-011	Debris Pile	Total Lead	7700 mg/kg	None
FA-FARM-001	Old Debris Pile	Total Lead	48 mg/kg	None
FA-FARM-002	Old Debris Pile	Total Lead	110 mg/kg	None
FA-FARM-003	Old Debris Pile	Total Lead	36mg/kg	None
FA-FARM-004	String Bean Field	Total Lead	19 mg/kg	None
FA-FARM-005	String Bean Field	Total Lead	28 mg/kg	None
FA-FARM-006	String Bean Field	Total Lead	27 mg/kg	None
FA-FARM-007	Open Field	Total Lead	26 mg/kg	None
FA-FARM-008	Open Field	Total Lead	27 mg/kg	None
FA-FARM-009	Open Field	Total Lead	34 mg/kg	None
FA-FARM-010	Open Field	Total Lead	43 mg/kg	None
FA-FARM-011	Open Field	Total Lead	24 mg/kg	None
FA-FARM-012	Open Field	Total Lead	28 mg/kg	None
FA-FARM-013	Open Field	Total Lead	25 mg/kg	None
FA-FARM-014	No.3761 Southside Road	Total Lead	82 mg/kg	None
FA-FARM-015	No.3761 Southside Road	Total Lead	23 mg/kg	None
FA-FARM-018	String Bean Field	Total Lead	23 mg/kg	None
FA-FP-001	Flood Plain	Total Lead	10 mg/kg	None
FA-FP-002	Flood Plain	Total Lead	7.3 mg/kg	None
FA-FP-003	Flood Plain	Total Lead	8.9 mg/kg	None
FA-FP-004	Mowed Path	Total Lead	25 mg/kg	None
FA-FP-005	Mowed Path	Total Lead	26 mg/kg	None
FA-FP-006	Mowed Path	Total Lead	22 mg/kg	None
FA-FP-007	Path	Total Lead	77 mg/kg	None
FA-FP-008	Path	Total Lead	120 mg/kg	None
FA-FP-009	Path	Total Lead	54 mg/kg	None
FA-S-001	Soil Surrounding the Debris Pile	Total Lead	73 mg/kg	None
FA-S-002	Soil Surrounding the Debris Pile	Total Lead	34 mg/kg	MS/MSD Analysis
FA-S-003	Soil Surrounding the Debris Pile	Total Lead	55 mg/kg	None
FA-S-004	Soil Surrounding the Debris Pile	Total Lead	20 mg/kg	None
FA-S-005	Soil Surrounding the Debris Pile	Total Lead	7.2 mg/kg	None
FA-S-006	Soil Surrounding the Debris Pile	Total Lead	15 mg/kg	None
FA-S-007	Soil Surrounding the Debris Pile	Total Lead	20 mg/kg	None
FA-S-008	Soil Surrounding the Debris Pile	Total Lead	42 mg/kg	None
FA-S-009	Soil Surrounding the Debris Pile	Total Lead	45 mg/kg	None
FA-S-010	Soil Surrounding the Debris Pile	Total Lead	24 mg/kg	None
FA-S-011	Soil Surrounding the Debris Pile	Total Lead	9.4 mg/kg	None
FA-S-012	Soil Surrounding the Debris Pile	Total Lead	12 mg/kg	None
FA-S-013	Soil Surrounding the Debris Pile	Total Lead	88 mg/kg	None
RIN-001	Rinsate Blank	Total Lead	9.0 mg/kg	None

Notes:

mg/kg - milligrams per kilogram

Frankfort Asbestos Site
Table 5
Draft Semi-Volatile Organic Compounds Analysis

Compounds	TAGM 4046	FA-DF-001	FA-DF-002	FA-DF-003	FA-DF-004	FA-DF-005	FA-DF-006	FA-DF-007	FA-DF-008
N-nitrosodimethylamine	NC	210U	220U	210U	190U	200U	190U	2000U	200U
Phenol	30*	42U	45U	42U	38U	40U	38U	400U	39U
Benzyl alcohol	NC	210U	220U	210U	120J	200U	190U	2000U	200U
bis(2-Chloroethyl)ether	NC	201U	220U	201U	190U	200U	190U	2000U	200U
2-Chlorophenol	800	201U	220U	201U	190U	200U	190U	2000U	200U
1,3-Dichlorobenzene	NC	201U	220U	201U	190U	200U	190U	2000U	200U
1,4-Dichlorobenzene	NC	201U	220U	201U	190U	200U	190U	2000U	200U
1,2-Dichlorobenzene	NC	201U	220U	201U	190U	200U	190U	2000U	200U
2-Methylphenol	100*	42U	45U	42U	38U	40U	38U	400U	39U
bis(2-chloroisopropyl)ether	NC	210U	220U	210U	190U	200U	190U	2000U	200U
3+4-Methylphenol	NC	24J	220U	210U	190U	20J	34J	2000U	26J
N-Nitroso-Di-n-propylamine	NC	210U	220U	210U	190U	200U	190U	2000U	200U
Hexachloroethane	NC	210U	220U	210U	190U	200U	190U	2000U	200U
Benzoic Acid	NC	400J	600	440	480	580	470	4000U	540
Nitrobenzene	200*	210U	220U	210U	190U	200U	190U	2000U	200U
Isophorone	4400	210U	220U	210U	190U	200U	190U	2000U	200U
2-Nitrophenol	330*	210U	220U	210U	190U	200U	190U	2000U	200U
2,4-Dimethylphenol	NC	210U	220U	210U	190U	200U	190U	2000U	200U
bis(2-Chloroethoxy)methane	NC	210U	220U	210U	190U	200U	190U	2000U	200U
2,4 Dichlorophenol	400	210U	220U	210U	190U	200U	190U	2000U	200U
1,2,4-Trichlorobenzene	NC	210U	220U	210U	190U	200U	190U	2000U	200U
Napthalene	13000	140	160	16J	53	81	210	340	320
4-Chloroaniline	220*	210U	220U	210U	190U	200U	190U	2000U	200U
Hexachlorobutadiene	NC	210U	220U	210U	190U	200U	190U	2000U	200U
4-Chloro-3-methylphenol	240*	210U	220U	210U	190U	200U	190U	2000U	200U
2-Chloronaphthalene	NC	210U	220U	210U	190U	200U	190U	2000U	200U
2-Methylnaphthalene	36400	73	80	16J	35	48	130	200	180
Hexachlorocyclopentadiene	NC	210U	220U	210U	190U	200U	190U	2000U	200U
2,4,6-Trichlorophenol	NC	210U	220U	210U	190U	200U	190U	2000U	200U
2,4,5-Trichlorophenol	100	42U	45U	42U	38U	40U	38U	400U	39U
2-Nitroaniline	430*	210U	220U	210U	190U	200U	190U	200U	200U
Dimethylphthlate	2000	100J	49J	190J	93J	200U	190U	2000U	36J
Acenaphthylene	41000	750	550	62	160	680	1700	1300	670
2,4-Dinitrotoluene	1000	210U	220U	210U	190U	200U	190U	2000U	200U
3-Nitroaniline	500*	210U	220U	210U	190U	200U	190U	2000U	200U
Acenaphthene	50000	180	180	41	110	96	430	770	710
2,4-Dinitrophenol	200*	210U	220U	210U	190U	200U	190U	2000U	200U
4-Nitrophenol	100*	42U	45U	42U	38U	40U	38U	400U	39U
Dibenzofuran	6200	160J	150J	28J	55J	91J	300	530J	500
2,4-Dinitrotoluene	NC	210U	220U	210U	190U	200U	190U	2000U	200U
Diethylphthlate	71000	210U	220U	210U	81J	200U	190U	2000U	24J
Fluorene	50000	270	240	49	110	130	500	910	1100
4-Chlorophenyl-phenylether	NC	210U	220U	210U	190U	200U	190U	2000U	200U
4-Nitroaniline	NC	210U	220U	210U	190U	200U	190U	2000U	200U
4,6-Dintro-2-methylphenol	NC	210U	220U	210U	190U	200U	190U	2000U	200U
n-Nitrosodiphenylamine	NC	210U	220U	210U	190U	200U	190U	2000U	200U
1,2-Diphenylhydrazine)	NC	210U	220U	210U	190U	200U	190U	2000U	200U
4-Bromophenyl-phenylether	NC	210U	220U	210U	190U	200U	190U	2000U	200U

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Table 5

Draft Semi-Volatile Organic Compounds Analysis

Compounds	TAGM 4046	FA-DF-001	FA-DF-002	FA-DF-003	FA-DF-004	FA-DF-005	FA-DF-006	FA-DF-007	FA-DF-008
Hexachlorobenzene	410	210U	220U	210U	190U	200U	190U	2000U	200U
Pentachlorophenol	1000*	310	400	340	340	360	330	2000U	420
Phenanthrene	50000	2900	2600	450	1200	1800	5000	8500	8700D1
Anthracene	50000	980	860	170	380	650	1800	2800	3000
Carbazole	NC	610	490	120J	200	370	1100	1600J	1600
Di-n-butylphthalate	8100	280B	240B	310B	610B	260B	450B	1100JB	600B
Fluoranthene	50000	6300	5700	1200	2900	4700	11000D1	18000	16000D1
Benzidine	NC	210U	220U	210U	190U	200U	190U	2000U	200U
Pyrene	50000	3200	2900	570	1500	2500	5700D1	11000	8100D1
Butylbenzylphthalate	50000	830	1200	1400	380	2800	3200	2100	2100
Benzo[a]anthracene	224*	2600	2400	460	1100	1800	4300	7600	5600
3,3'-Dichlorobenzidine	NC	210U	220U	210U	190U	200U	190U	2000U	200U
Chrysene	400	2400	2300	490	1000	2000	3800	7200	4800
bis(2-Ethylhexyl)phthalate	50000	1900B	2100	2200B	1800	2400	2500	4600	2300
Di-n-octylphthalate	50000	460	270	1900	12000D1	790	550	1400J	710
Benzo[b]fluoranthene	1100	2500	2300	600	850	2300	4500	7000	5600
Benzo[k]fluoranthene	1100	2600	2300	430	1500	1600	4700	6900	4500
Benzo[a]pyrene	61*	2400	2200	510	1100	1900	4100	7600	5000
Indeno[1,2,3-cd]pyrene	3200	990	820	150	360	710	2000	3000	2100
Dibenzo[a,h]anthracene	14*	340	360	75	130	330	850	1400	960
Benzo[g,h,i]perylene	50000	1000	800	190	400	790	2100	2900	2100

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Table 5
Draft Semi-Volatile Organic Compounds Analysis

Compounds	TAGM 4046	FA-DF-009	FA-DF-010	FA-DF-011	FA-S-001	FA-S-002	FA-S-003	FA-S-004	FA-S-005
N-nitrosodimethylamine	NC	2000U	200U	200U	170U	180U	210U	300U	390U
Phenol	30*	400U	39U	40U	35U	35U	41U	61U	77U
Benzyl alcohol	NC	2000U	200U	200U	170U	180U	210U	300U	390U
bis(2-Chloroethyl)ether	NC	2000U	200U	200U	170U	180U	210U	300U	390U
2-Chlorophenol	800	2000U	200U	200U	170U	180U	210U	300U	390U
1,3-Dichlorobenzene	NC	2000U	200U	200U	170U	180U	210U	300U	390U
1,4-Dichlorobenzene	NC	2000U	200U	200U	170U	180U	210U	300U	390U
1,2-Dichlorobenzene	NC	2000U	200U	200U	170U	180U	210U	300U	390U
2-Methylphenol	100*	400U	39U	40U	35U	35U	41U	61U	77U
bis(2-chloroisopropyl)ether	NC	2000U	200U	200U	170U	180U	210U	300U	390U
3+4-Methylphenol	NC	2000U	200U	200U	170U	180U	210U	300U	390U
N-Nitroso-Di-n-propylamine	NC	2000U	200U	200U	170U	180U	210U	300U	390U
Hexachloroethane	NC	2000U	200U	200U	170U	180U	210U	300U	390U
Benzoic Acid	NC	4000U	660	480	4200	210	260J	610U	770U
Nitrobenzene	200*	2000U	200U	200U	170U	180U	210U	300U	390U
Isophorone	4400	2000U	200U	200U	170U	180U	210U	300U	390U
2-Nitrophenol	330*	2000U	200U	200U	170U	180U	210U	300U	390U
2,4-Dimethylphenol	NC	2000U	200U	200U	170U	180U	210U	300U	390U
bis(2-Chloroethoxy)methane	NC	2000U	200U	200U	170U	180U	210U	300U	390U
2,4 Dichlorophenol	400	2000U	200U	200U	170U	180U	210U	300U	390U
1,2,4-Trichlorobenzene	NC	2000U	200U	200U	170U	180U	210U	300U	390U
Napthalene	13000	160	36	80	17U	18U	21U	30U	39U
4-Chloroaniline	220*	2000U	200U	200U	170U	180U	210U	300U	390U
Hexachlorobutadiene	NC	2000U	200U	200U	170U	180U	210U	300U	390U
4-Chloro-3-methylphenol	240*	2000U	200U	200U	170U	180U	210U	300U	390U
2-Chloronaphthalene	NC	2000U	200U	200U	170U	180U	210U	300U	390U
2-Methylnaphthalene	36400	200U	51	49	17U	18U	21U	30U	39U
Hexachlorocyclopentadiene	NC	2000U	200U	200U	170U	180U	210U	300U	390U
2,4,6-Trichlorophenol	NC	2000U	200U	200U	170U	180U	210U	300U	390U
2,4,5-Trichlorophenol	100	400U	39U	40U	35U	35U	41U	61U	77U
2-Nitroaniline	430*	2000U	200U	200U	170U	180U	210U	300U	390U
Dimethylphthlate	2000	2000U	3900	200U	170U	180U	210U	300U	390U
Acenaphthylene	41000	2500	130	750	99	73	60	34	21J
2,4-Dinitrotoluene	1000	2000U	200U	200U	170U	180U	210U	300U	390U
3-Nitroaniline	500*	2000U	200U	200U	170U	180U	210U	300U	390U
Acenaphthene	50000	310	120	120	17U	18U	21U	30U	39U
2,4-Dinitrophenol	200*	2000U	200U	200U	170U	180U	210U	300U	390U
4-Nitrophenol	100*	400U	39U	40U	35U	35U	41U	61U	77U
Dibenzofuran	6200	270	47J	110	170U	180U	210U	300U	390U
2,4-Dinitrotoluene	NC	2000U	200U	200U	170U	180U	210U	300U	390U
Diethylphthlate	71000	2000U	21J	200U	170U	180U	210U	300U	390U
Fluorene	50000	440	110	190	17U	7.4J	9J	30U	39U
4-Chlorophenyl-phenylether	NC	2000U	200U	200U	170U	180U	210U	300U	390U
4-Nitroaniline	NC	2000U	200U	200U	170U	180U	210U	300U	390U
4,6-Dintro-2-methylphenol	NC	2000U	200U	200U	170U	180U	210U	300U	390U
n-Nitrosodiphenylamine	NC	2000U	200U	200U	170U	180U	210U	300U	390U
1,2-Diphenylhydrazine)	NC	2000U	200U	200U	170U	180U	210U	300U	390U
4-Bromophenyl-phenylether	NC	2000U	200U	200U	170U	180U	210U	300U	390U

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Table 5

Draft Semi-Volatile Organic Compounds Analysis

Compounds	TAGM 4046	FA-DF-009	FA-DF-010	FA-DF-011	FA-S-001	FA-DF-002	FA-DF-003	FA-DF-004	FA-DF-005
Hexachlorobenzene	410	2000U	200U	200U	170U	180U	210U	300U	390U
Pentachlorophenol	1000*	2000U	400	350	170U	180U	210U	300U	390U
Phenanthrene	50000	6700	1600	2000	130	140	110	68	36J
Anthracene	50000	2300	520	700	44	36	37	24J	39U
Carbazole	NC	1300J	280	410	20J	17J	210U	300U	390U
Di-n-butylphthalate	8100	780JB	580B	260B	56JB	57JB	62JB	93JB	110JB
Fluoranthene	50000	15000	4800	5200	380	300	250	150	84
Benzidine	NC	2000U	200U	200U	170U	180U	210U	300U	390U
Pyrene	50000	10000	3300	4100	320	290	200	130	76
Butylbenzylphthalate	50000	2400	1300	2200	110J	130J	140J	210J	390U
Benzo[a]anthracene	224*	6800	1800	2100	160	130	110	72	42
3,3'-Dichlorobenzidine	NC	2000U	200U	220U	170U	180U	210U	300U	390U
Chrysene	400	6700	1600	2000	200	170	130	77	44
bis(2-Ethylhexyl)phthalate	50000	4300	2600	3000	40J	43J	47J	97J	120J
Di-n-octylphthalate	50000	1300J	5100	1200	170U	110J	210U	200J	260J
Benzo[b]fluoranthene	1100	6600	2100	2300	170	150	130	110	110
Benzo[k]fluoranthene	1100	5700	1600	2200	180	130	94	63	37J
Benzo[a]pyrene	61*	6900	1800	2100	200	170	140	110	93
Indeno[1,2,3-cd]pyrene	3200	3200	670	980	150	100	78	36	39U
Dibenzo[a,h]anthracene	14*	1400	210	430	60	46	37	25	24U
Benzo[g,h,i]perylene	50000	3200	700	1100	190	140	110	73	35J

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Table 5
Draft Semi-Volatile Organic Compounds Analysis

Compounds	TAGM 4046	FA-S-006	FA-S-007	FA-S-008	FA-S-009	FA-S-010	FA-S-011	FA-S-012	FA-S-013
Hexachlorobenzene	410	280U	210U	200U	190U	190U	330U	410U	190U
Pentachlorophenol	1000*	390	210U	200U	290	190U	330U	410U	290
Phenanthrene	50000	62	75	350	320	130	90	37J	380
Anthracene	50000	19J	22	120	160	60	34	41U	190
Carbazole	NC	280U	210U	72J	80J	23J	330U	410U	94J
Di-n-butylphthalate	8100	120JB	77JB	74JB	84JB	68JB	100JB	130JB	89JB
Fluoranthene	50000	170	180	1100	1000	360	230	93	1200
Benzidine	NC	280U	210U	200U	190U	190U	330U	410U	190U
Pyrene	50000	130	140	870	520	280	190	78	660
Butylbenzylphthalate	50000	260J	140J	150J	150J	190U	210J	300J	150J
Benzo[a]anthracene	224*	78	76	540	470	160	100	45	550
3,3'-Dichlorobenzidine	NC	280U	210U	200U	190U	190U	330U	410U	190U
Chrysene	400	85	92	550	500	190	120	51	580
bis(2-Ethylhexyl)phthalate	50000	450	93J	130J	200	120J	52J	140J	220
Di-n-octylphthalate	50000	1300	230	130J	190U	190U	330U	300J	120J
Benzo[b]fluoranthene	1100	120	95	470	600	170	150	110	690
Benzo[k]fluoranthene	1100	58	76	500	490	160	97	36J	550
Benzo[a]pyrene	61*	120	110	570	550	210	160	100	640
Indeno[1,2,3-cd]pyrene	3200	26J	44	450	190	120	66	41U	260
Dibenzo[a,h]anthracene	14*	24	25	190	87	52	40	41U	110
Benzo[g,h,i]perylene	50000	56	73	500	220	140	110	41	290

Notes:

Bold - Non-Qualified Detection

Red - Result Exceeds Corresponding Criteria in TAGM No. 4046

J - Estimated Value

U - Not Detected At The Corresponding Detection Limit

B - Blank Contamination

D1 - Dilution Required

Data Presented in micrograms per kilogram (ug/kg)

TAGM 4046 - NYSDEC Technical and Administrative Guidance Memorandum No. 4046

*** - TAGM No. 4046 States To Use The Recommended Soil Cleanup Objective or MDL**

NC - No Criteria Established in TAGM No. 4046

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Table 5

Draft Semi-Volatile Organic Compounds Analysis

Compounds	TAGM 4046	FA-S-006	FA-S-007	FA-S-008	FA-S-009	FA-S-010	FA-S-011	FA-S-012	FA-S-013
N-nitrosodimethylamine	NC	280U	210U	200U	190U	190U	330U	410U	190U
Phenol	30*	56U	42U	40U	37U	37U	65U	81U	37U
Benzyl alcohol	NC	280U	210U	200U	190U	190U	330U	410U	190U
bis(2-Chloroethyl)ether	NC	280U	210U	200U	190U	190U	330U	410U	190U
2-Chlorophenol	800	280U	210U	200U	190U	190U	330U	410U	190U
1,3-Dichlorobenzene	NC	280U	210U	200U	190U	190U	330U	410U	190U
1,4-Dichlorobenzene	NC	280U	210U	200U	190U	190U	330U	410U	190U
1,2-Dichlorobenzene	NC	280U	210U	200U	190U	190U	330U	410U	190U
2-Methylphenol	100*	56U	42U	40U	37U	37U	65U	81U	37U
bis(2-chloroisopropyl)ether	NC	280U	210U	200U	190U	190U	330U	410U	190U
3+4-Methylphenol	NC	280U	210U	200U	190U	190U	71J	950	190U
N-Nitroso-Di-n-propylamine	NC	280U	210U	200U	190U	190U	330U	410U	190U
Hexachloroethane	NC	280U	210U	200U	190U	190U	330U	410U	190U
Benzoic Acid	NC	360J	270J	260J	320J	370U	650U	590J	310J
Nitrobenzene	200*	280U	210U	200U	190U	190U	330U	410U	190U
Isophorone	4400	280U	210U	200U	190U	190U	330U	410U	190U
2-Nitrophenol	330*	280U	210U	200U	190U	190U	330U	410U	190U
2,4-Dimethylphenol	NC	280U	210U	200U	190U	190U	330U	410U	190U
bis(2-Chloroethoxy)methane	NC	280U	210U	200U	190U	190U	330U	410U	190U
2,4 Dichlorophenol	400	280U	210U	200U	190U	190U	330U	410U	190U
1,2,4-Trichlorobenzene	NC	280U	210U	200U	190U	190U	330U	410U	190U
Napthalene	13000	28U	21U	13J	21	19U	33U	41U	21
4-Chloroaniline	220*	280U	210U	200U	190U	190U	330U	410U	190U
Hexachlorobutadiene	NC	280U	210U	200U	190U	190U	330U	410U	190U
4-Chloro-3-methylphenol	240*	280U	210U	200U	190U	190U	330U	410U	190U
2-Chloronaphthalene	NC	280U	210U	200U	190U	190U	330U	410U	190U
2-Methylnaphthalene	36400	28U	21U	20U	18J	19U	33U	41U	20
Hexachlorocyclopentadiene	NC	280U	210U	200U	190U	190U	330U	410U	190U
2,4,6-Trichlorophenol	NC	280U	210U	200U	190U	190U	330U	410U	190U
2,4,5-Trichlorophenol	100	56U	42U	40U	37U	37U	65U	81U	37U
2-Nitroaniline	430*	280U	210U	200U	190U	190U	330U	410U	190U
Dimethylphthlate	2000	37J	210U	200U	190U	190U	330U	410U	190U
Acenaphthylene	41000	20J	40	160	250	120	65	17J	280
2,4-Dinitrotoluene	1000	280U	210U	200U	190U	190U	330U	410U	190U
3-Nitroaniline	500*	280U	210U	200U	190U	190U	330U	410U	190U
Acenaphthene	50000	28U	21U	17J	16J	7.5J	33U	41U	18J
2,4-Dinitrophenol	200*	280U	210U	200U	190U	190U	330U	410U	190U
4-Nitrophenol	100*	56U	42U	40U	37U	37U	65U	81U	37U
Dibenzofuran	6200	280U	210U	200U	19J	190U	330U	410U	19J
2,4-Dinitrotoluene	NC	280U	210U	200U	190U	190U	330U	410U	190U
Diethylphthlate	71000	280U	210U	200U	190U	190U	330U	410U	190U
Fluorene	50000	28U	21U	14J	24	9.0J	33U	41U	31
4-Chlorophenyl-phenylether	NC	280U	210U	200U	190U	190U	330U	410U	190U
4-Nitroaniline	NC	280U	210U	200U	190U	190U	330U	410U	190U
4,6-Dintro-2-methylphenol	NC	280U	210U	200U	190U	190U	330U	410U	190U
n-Nitrosodiphenylamine	NC	280U	210U	200U	190U	190U	330U	410U	190U
1,2-Diphenylhydrazine)	NC	280U	210U	200U	190U	190U	330U	410U	190U
4-Bromophenyl-phenylether	NC	280U	210U	200U	190U	190U	330U	410U	190U

Frankfort Asbestos Site
Table 6
Sample FA-S-012A
Detected Values (Draft)

Compounds	TAGM 4046	FA-S-012A
Volatile Organic Compounds (ug/kg)		
Carbon Disulfide	2,700	2.5 J
Acetone	200	69 B
Methylene Chloride	100	5.3 JB
Semi-Volatile Organic Compounds (ug/kg)		
4-Methylphenol	900	120 J
Fluoranthene	50,000	98 J
Pesticides (ug/kg)		
Endrin Ketone	NC	170 P
gamma-Chlordane	540	460
alpha-Chlordane	NC	530
PCBs		
<i>None Detected</i>		
Herbicides (ug/kg)		
2,4-DB	NC	860 P
Pentachlorophenol	NC	8.2 JP
Metals (mg/kg)		
Aluminum	SB	8,340
Antimony	SB	1.2 J
Arsenic	7.5 or SB	11.6
Barium	300 or SB	259
Beryllium	0.16 or SB	0.36 J
Cadmium	1 or SB	0.37 J
Calcium	SB	13,300
Chromium	10 or SB	18.3
Cobalt	30 or SB	4.1 J
Copper	25 or SB	39.4
Iron	2,000 or SB	15,200
Lead	SB	38.4
Magnesium	SB	5,250
Manganese	SB	734
Mercury	0.1	0.093 J
Nickel	13 or SB	10.6
Potassium	SB	1,660
Selenium	2 or SB	0.97 J
Silver	SB	0.15 J
Sodium	SB	1,840
Vanadium	150 or SB	17.9
Zinc	20 or SB	109

Notes:**Bold** - Non-Qualified Detection**Red** - Result Exceeds Corresponding Criteria in TAGM No. 4046**J** - Estimated Value**P** - The difference between the two columns is greater than 25%.

The lower of the two values is reported.

B - Blank Contamination

TAGM 4046 - NYSDEC Technical and Administrative Guidance Memorandum No. 4046

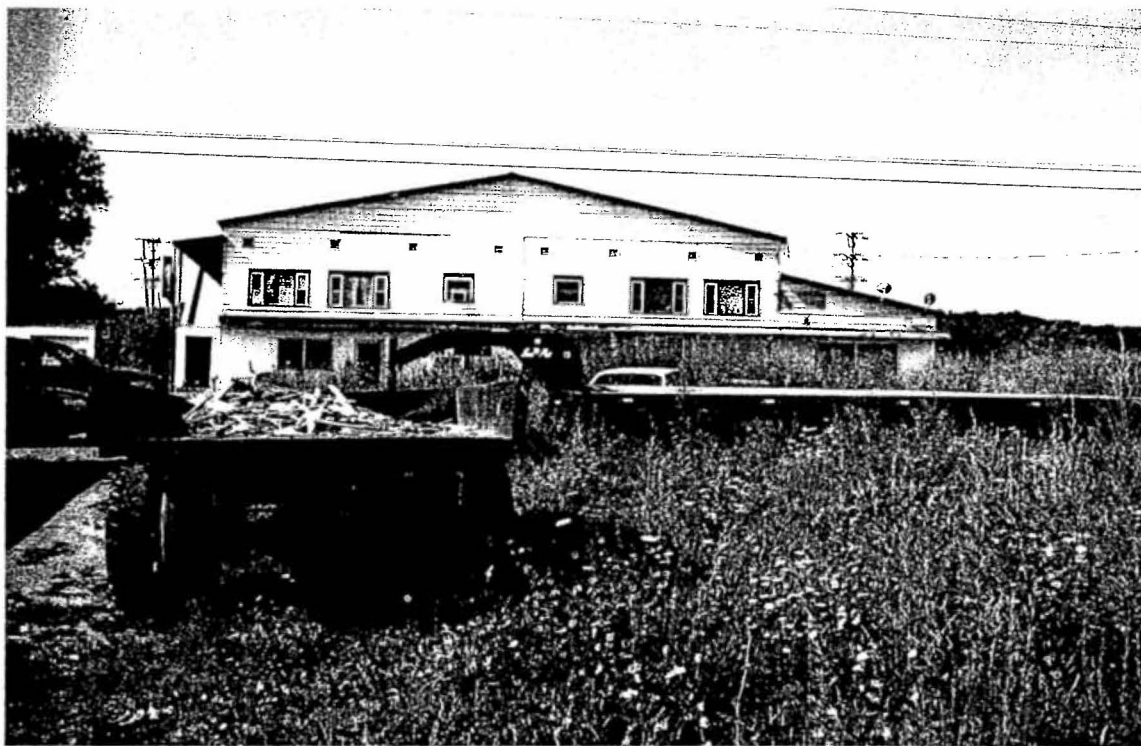
NC - No Criteria Established in TAGM No. 4046 / **SB** - Site Background

ATTACHMENT F

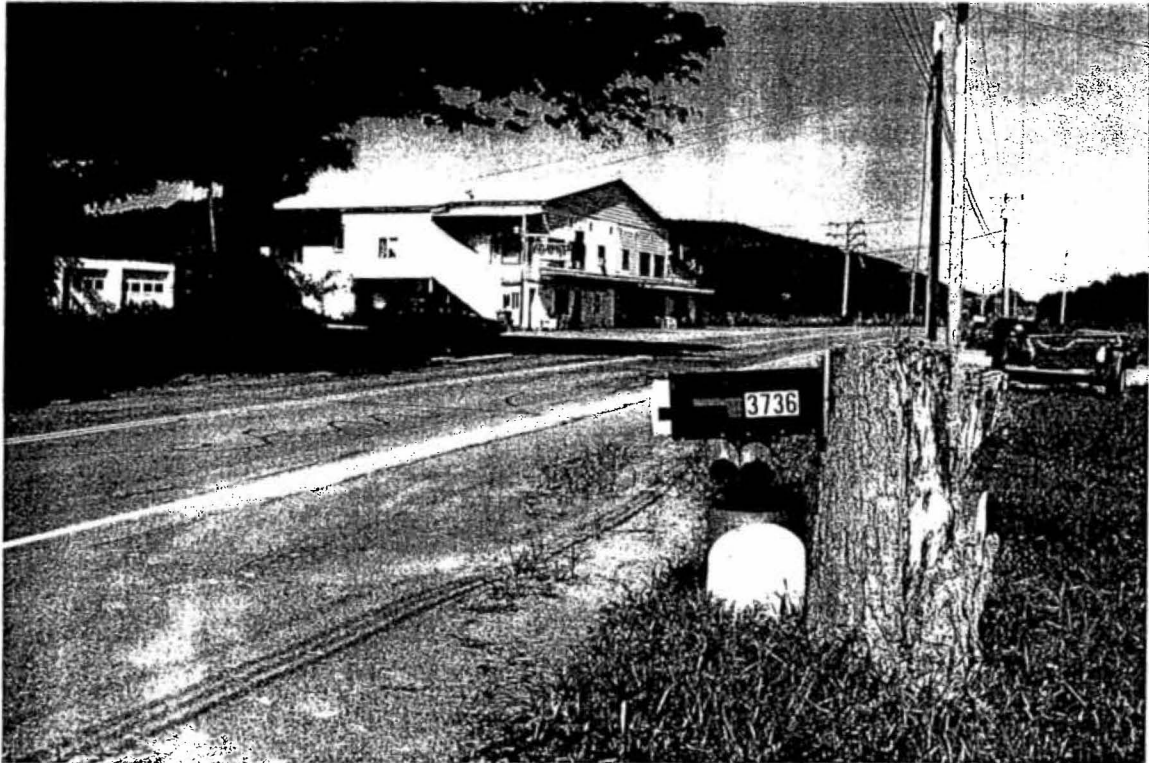
PHOTOGRAPHIC DOCUMENTATION



July 31, 2007: Riverside Farms located across Southside Road from the site.



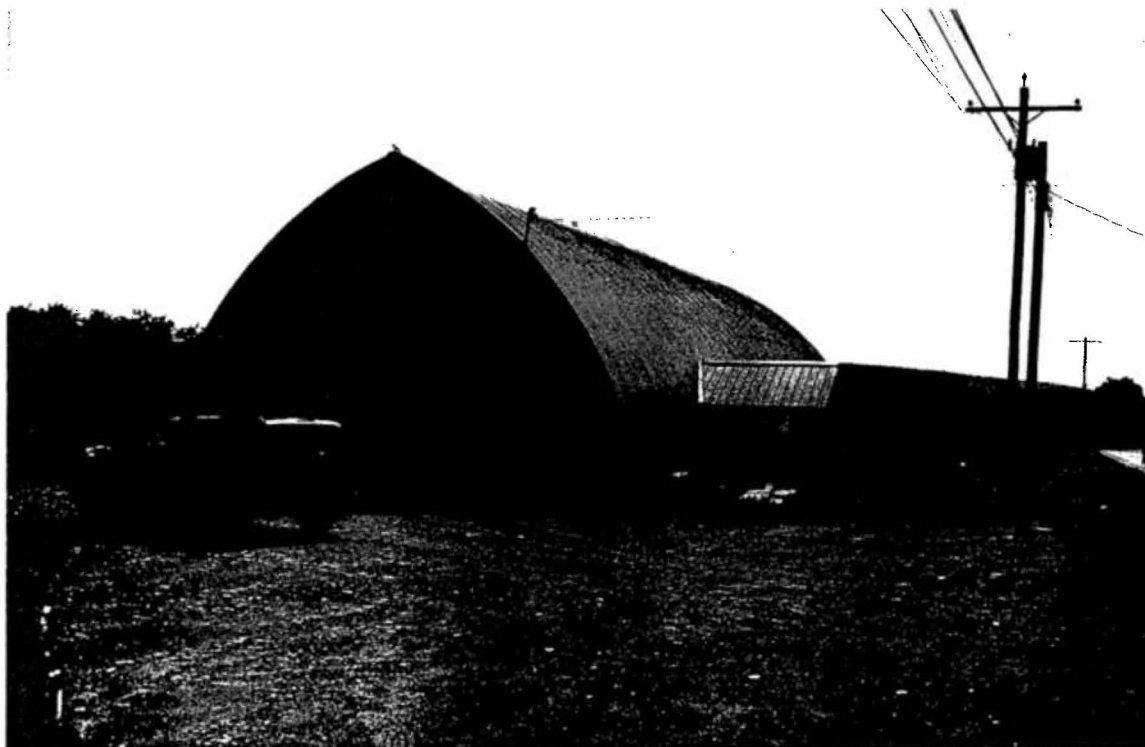
July 31, 2007: Grass field in front of the debris pile. Riverside Farms can be seen in the background.



July 31, 2007: View of Southside Road with Riverside Farms in the background.



July 31, 2007: Barn located adjacent to the debris pile.



July 31, 2007: Barn located adjacent to the debris pile.



July 31, 2007: Bales of hay holding down plastic tarps which cover some of the piles of construction debris.



July 31, 2007: Bales of hay holding down plastic tarps which cover some of the piles of construction debris.



July 31, 2007: Bales of hay holding down plastic tarps which cover some of the piles of construction debris.



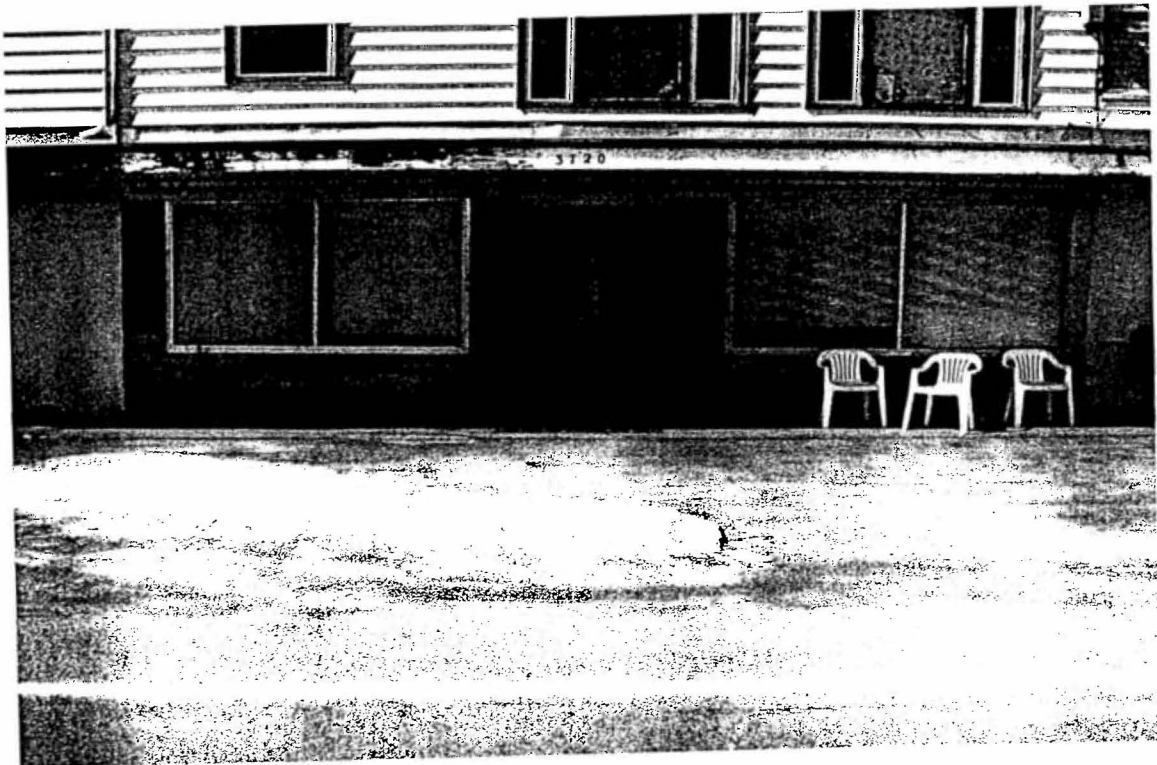
July 31, 2007: View of barn, looking west.



July 31, 2007: View of barn, looking east.



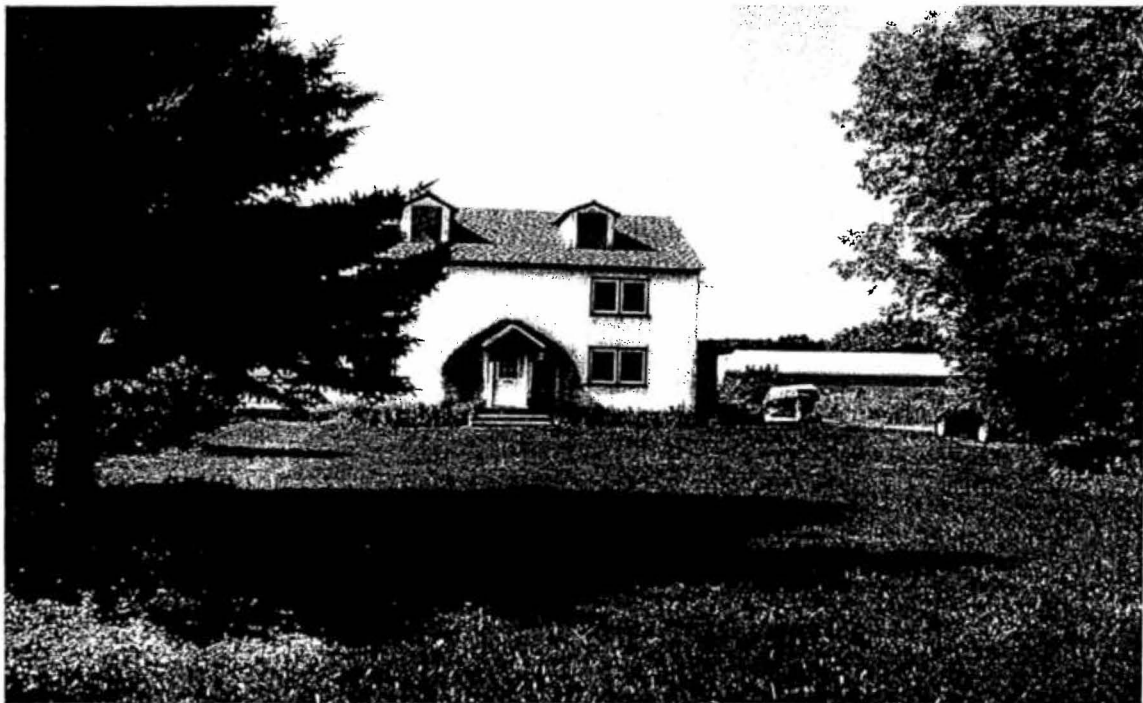
July 31, 2007: View from the debris pile, looking north toward the tree-line.



July 31, 2007: Riverside Farms located across Southside Road from the debris pile.



July 31, 2007: Looking east along Southside Road.



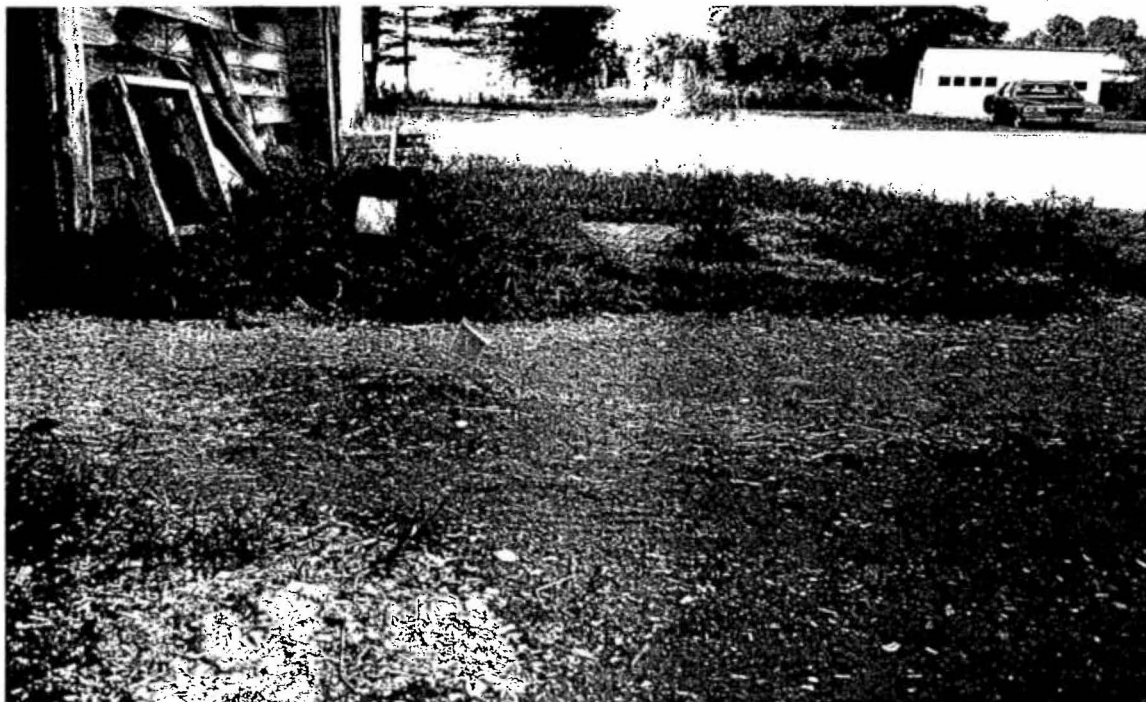
July 31, 2007: View of the home located at 3736 Southside Road.



July 31, 2007: View of the home located at 3761 Southside Road.



July 31, 2007: View of the home located at 3761 Southside Road.



August 1, 2007: Sample FA-S-017, located at the barn entrance.



August 1, 2007: Sample FA-FARM-003.



August 1, 2007: Sample FA-FARM-002.



August 1, 2007: Sample FA-FARM-001.



August 1, 2007: Sample FA-FARM-006, located in the string bean field, looking toward No.3761 Southside Road.



August 1, 2007: Sample FA-FARM-005, located in the string bean field, looking toward the barn.



August 1, 2007: Sample FA-FARM-004, located in the string bean field, looking toward Southside Road and No. 3736 Southside Road.



August 1, 2007: Sample FA-FARM-007, looking toward the home at No. 3761 Southside Road.



August 1, 2007: Sample FA-FARM-008.



August 1, 2007: Sample FA-FARM-012, looking towards the house located at No.3761 Southside Road.



August 1, 2007: Sample FA-FARM-016.



August 1, 2007: Sample FA-FARM-009.



August 1, 2007: Sample FA-FARM-010.



August 1, 2007: Sample FA-FARM-011.



August 1, 2007: Sample FA-FP-008.



August 1, 2007: Sample FA-FP-007. The debris pile can be seen in background.



August 1, 2007: Sample FA-FP-009. The barn can be seen in the background.



August 1, 2007: Sample FA-FP-001 at the Mohawk River.



August 1, 2007: Sample FA-FP-002 at the Mohawk River.



August 1, 2007: Sample FA-FP-003 at the Mohawk River.



August 1, 2007: Sample FA-FP-004 located in the mowed path adjacent to the Mohawk River.



August 1, 2007: Sample FA-FP-005 located in the mowed path adjacent to the Mohawk River.



August 1, 2007: Sample FA-FP-006 located in the mowed path adjacent to the Mohawk River.



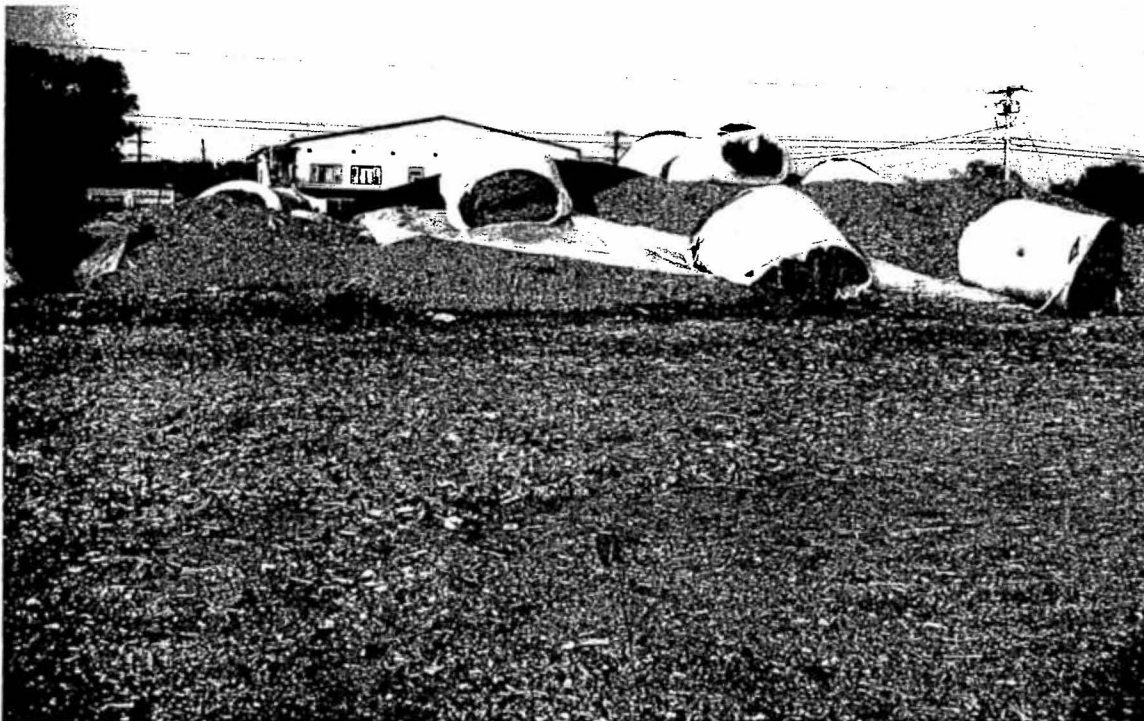
August 2, 2007: Sample FA-DF-007 collected from the top of the debris pile.



August 2, 2007: Sample FA-DF-008 collected from the top of the debris pile.



August 2, 2007: Sample FA-DF-010 collected from one of the piles of construction debris.



August 2, 2007: Sample FA-DF-009 collected from the top of the debris pile.



August 2, 2007: Samples FA-DF-001(left) and FA-S-001 located along the southwestern side of the debris pile.



August 2, 2007: Sample FA-S-001.



August 2, 2007: Sample FA-S-002 located along the side of the debris pile. Riverside Farms can be seen in the upper right portion of the photograph.



August 2, 2007: Sample FA-DF-002 (red flag), looking down the slope of the debris pile. Sample FA-S-003 can also be seen.



August 2, 2007: Sample FA-DF-003.



August 2, 2007: Sample FA-S-004.



August 2, 2007: Sample FA-S-006.



August 2, 2007: Sample FA-DF-004 looking down the slope of the debris pile.



August 2, 2007: Sample FA-S-007.



August 2, 2007: Sample FA-S-012. A foul sulfur odor was noted in this area. Stressed vegetation can be noted.



August 2, 2007: Samples FA-DF-003 (red flag) and FA-S-005.



August 2, 2007: Sample FA-S-005.



August 2, 2007: Sample FA-S-008.



August 2, 2007: Sample FA-DF-005.



August 2, 2007: Sample FA-S-009.



August 2, 2007: Sample FA-S-010 located between and below the bales of hay.



August 2, 2007: Sample FA-DF-006.



August 2, 2007: Sample FA-S-011, located between and below the bales of hay.

ATTACHMENT G

NYSDEC TAGM NO. 4046

New York State Department of Environmental Conservation

*** Proceed to Guidance Document | Contact the Division of Environmental Remediation ***

This document is a facsimile of an original Technical and Administrative Guidance Memorandum (TAGM) issued by the New York State Department of Environmental Conservation, Division of Environmental Remediation (formerly the Division of Hazardous Waste Remediation). This facsimile was reformatted for the Internet but maintains as much as possible of the original document. Changes were made to headers, footnote locations, paging, etc. to facilitate Internet delivery. Unless otherwise noted, none of these changes revise the content of the original TAGM.

This document was developed to provide Department staff with guidance on how to ensure compliance with statutory and regulatory requirements, including case law interpretations, and to provide consistent treatment of similar situations. This document may also be used by the public to gain technical guidance and insight regarding how the department staff may analyze an issue and factors in their consideration of particular facts and circumstances. This guidance document is not a fixed rule under the State Administrative Procedure Act section 102(2)(a)(i). Furthermore, nothing set forth herein prevents staff from varying from this guidance as the specific facts and circumstances may dictate, provided staff's actions comply with applicable statutory and regulatory requirements. This document does not create any enforceable rights for the benefit of any party.

Many procedures used by the Division of Environmental Remediation are undergoing revision as a result of our continual efforts to improve program implementation. In many cases, previously issued guidance documents are no longer completely consistent with current practice, but are provided here in their original form until final revisions are issued. Users of the posted guidance documents are urged to contact the Division of Environmental Remediation.

**TECHNICAL AND ADMINISTRATIVE
GUIDANCE MEMORANDUM #4046**

DETERMINATION OF SOIL CLEANUP OBJECTIVES AND CLEANUP LEVELS

TO: Regional Haz. Waste Remediation Engineers, Bureau Directors, and Section Chiefs
FROM: Michael J. O'Toole, Jr., Director, Division of Hazardous Waste Remediation
SUBJECT: DIVISION TECHNICAL AND ADMINISTRATIVE GUIDANCE
MEMORANDUM: DETERMINATION OF SOIL CLEANUP OBJECTIVES
AND CLEANUP LEVELS
DATE: JAN 24, 1994

Michael J. O'Toole, Jr. (signed)

Appendix A - Recommended Soil Cleanup Objectives | Appendix B - Total Organic Carbon (TOC)
Table 1 - Volatile Organic Contaminants
Table 2 - Semi-Volatile Organic Contaminants
Table 3 - Organic Pesticides / Herbicides and PCBs
Table 4 - Heavy Metals

The cleanup goal of the Department is to restore inactive hazardous waste sites to predisposal conditions, to the extent feasible and authorized by law. However, it is recognized that restoration to predisposal conditions will not always be feasible.

1. INTRODUCTION:

This TAGM provides a basis and procedure to determine soil cleanup levels at individual Federal Superfund, State Superfund, 1986 EQBA Title 3 and Responsible Party (RP) sites, when the Director of the DHWR determines that cleanup of a site to predisposal conditions is not possible or feasible.

The process starts with development of soil cleanup objectives by the Technology Section for the contaminants identified by the Project Managers. The Technology Section uses the procedure described in this TAGM to develop soil cleanup objectives. Attainment of these generic soil cleanup objectives will, at a minimum, eliminate all significant threats to human health and/or the environment posed by the inactive hazardous waste site. Project Managers should use these cleanup objectives in selecting alternatives in the Feasibility Study (FS). Based on the proposed selected remedial technology (outcome of FS), final site specific soil cleanup levels are established in the Record of Decision (ROD) for these sites.

It should be noted that even after soil cleanup levels are established in the ROD, these levels may prove to be unattainable when remedial construction begins. In that event,

alternative remedial actions or institutional controls may be necessary to protect the environment.

2. BASIS FOR SOIL CLEANUP OBJECTIVES:

The following alternative bases are used to determine soil cleanup objectives:

- a. Human health based levels that correspond to excess lifetime cancer risks of one in a million for Class A¹ and B² carcinogens, or one in 100,000 for Class C³ carcinogens. These levels are contained in USEPA's Health Effects Assessment Summary Tables (HEASTs) which are compiled and updated quarterly by the NYSDEC's Division of Hazardous Substances Regulation;
- b. Human health based levels for systemic toxicants, calculated from Reference Doses (RfDs). RfDs are an estimate of the daily exposure an individual (including sensitive individuals) can experience without appreciable risk of health effects during a lifetime. An average scenario of exposure in which children ages one to six (who exhibit the greatest tendency to ingest soil) is assumed. An intake rate of 0.2 gram/day for a five-year exposure period for a 16-kg child is assumed. These levels are contained in USEPA's Health Effects Assessment Summary Tables (HEASTs) which are compiled and updated quarterly by the NYSDEC's Division of Hazardous Substances Regulation;
- c. Environmental concentrations which are protective of groundwater/drinking water quality; based on promulgated or proposed New York State Standards;
- d. Background values for contaminants; and
- e. Detection limits.

A recommendation on the appropriate cleanup objective is based on the criterion that produces the most stringent cleanup level using criteria a, b, and c for organic chemicals, and criteria a, b, and d for heavy metals. If criteria a and/or b are below criterion d for a contaminant, its background value should be used as the cleanup objective. However, cleanup objectives developed using this approach must be, at a minimum, above the method detection limit (MDL) and it is preferable to have the soil cleanup objectives above the Contract Required Quantitation Limit (CRQL) as defined by NYSDEC. If the cleanup objective of a compound is "non-detectable", it should mean that it is not detected at the MDL. Efforts should be made to obtain the best MDL detection possible when selecting a laboratory and analytical protocol.

3. DETERMINATION OF SOIL CLEANUP GOALS FOR ORGANICS IN SOIL FOR PROTECTION OF WATER QUALITY

The water/soil partitioning theory is used to determine soil cleanup objectives which would be protective of groundwater/drinking water quality for its best use. This theory is conservative in nature and assumes that contaminated soil and groundwater are in direct contact. This theory is based upon the ability of organic matter in soil to adsorb organic chemicals. The approach predicts the maximum amount of contamination that may remain in soil so that leachate from the contaminated soil will not violate

groundwater and/or drinking water standards.

This approach is not used for heavy metals, which do not partition appreciably into soil organic matter. For heavy metals, eastern USA or New York State soil background values may be used as soil cleanup objectives. A list of values that have been tabulated is attached. Soil background data near the site, if available, is preferable and should be used as the cleanup objective for such metals. Background samples should be free from the influences of this site and any other source of contaminants. Ideal background samples may be obtained from uncontaminated upgradient and upwind locations.

Protection of water quality from contaminated soil is a two-part problem. The first is predicting the amount of contamination that will leave the contaminated media as leachate. The second part of the problem is to determine how much of that contamination will actually contribute to a violation of groundwater standards upon reaching and dispersing into groundwater. Some of the contamination which initially leaches out of soil will be absorbed by other soil before it reaches groundwater. Some portion will be reduced through natural attenuation or other mechanism.

PART A: PARTITION THEORY MODEL

There are many test and theoretical models which are used to predict leachate quality given a known value of soil contamination. The Water-Soil Equilibrium Partition Theory is used as a basis to determine soil standard or contamination limit for protection of water quality by most of the models currently in use. It is based on the ability of organic carbon in soil to adsorb contamination. Using a water quality value which may not be exceeded in leachate and the partition coefficient method, the equilibrium concentration (C_s) will be expressed in the same units as the water standards. The following expression is used:

$$\text{Allowable Soil Concentration } C_s = f \times K_{oc} \times C_w \dots (1)$$

Where: f = fraction of organic carbon of the natural soil medium.

K_{oc} = partition coefficient between water and soil media. K_{oc} can be estimated by the following equation:

$$\log K_{oc} = 3.64 - 0.55 \log S$$

S = water solubility in ppm

C_w = appropriate water quality value from TOGS 1.1.1

Most K_{oc} and S values are listed in the Exhibit A-1 of the USEPA Superfund Public Health Evaluation Manual (EPA/540/1-86/060). The K_{oc} values listed in this manual should be used for the purpose. If the K_{oc} value for a contaminant is not listed, it should be estimated using the above mentioned equation.

PART B: PROCEDURE FOR DETERMINATION OF SOIL CLEANUP OBJECTIVES

When the contaminated soil is in the unsaturated zone above the water table, many mechanisms are at work that prevent all of the contamination that would leave the contaminated soil from impacting groundwater. These mechanisms occur during transport and may work simultaneously. They include the following: (1) volatility, (2) sorption and desorption, (3) leaching and diffusion, (4) transformation and degradation, and (5) change in concentration of contaminants after reaching and/or mixing with the groundwater surface. To account for these mechanisms, a correction factor of 100 is used to establish soil cleanup objectives. This value of 100 for the correction is consistent with the logic used by EPA in its Dilution Attenuation Factor (DAF) approach for EP Toxicity and TCLP. (Federal Register/Vol. 55, No. 61, March 29, 1990/Pages 11826-27). Soil cleanup objectives are calculated by multiplying the allowable soil concentration by the correction factor. If the contaminated soil is very close (<3' - 5') to the groundwater table or in the groundwater, extreme caution should be exercised when using the correction factor of 100 (one hundred) as this may not give conservative cleanup objectives. For such situations the Technology Section should be consulted for site-specific cleanup objectives.

Soil cleanup objectives are limited to the following maximum values. These values are consistent with the approach promulgated by the States of Washington and Michigan.

1. Total VOCs \leq 10 ppm.
2. Total Semi VOCs \leq 500 ppm.
3. Individual Semi VOCs \leq 50 ppm.
4. Total Pesticides \leq 10 ppm.

One concern regarding the semi-volatile compounds is that some of these compounds are so insoluble that their Cs values are fairly large. Experience (Draft TOGS on Petroleum Contaminated Soil Guidance) has shown that soil containing some of these insoluble substances at high concentrations can exhibit a distinct odor even though the substance will not leach from the soil. Hence any time a soil exhibits a discernible odor nuisance, it shall not be considered clean even if it has met the numerical criteria.

4. DETERMINATION OF FINAL CLEANUP LEVELS:

Recommended soil cleanup objectives should be utilized in the development of final cleanup levels through the Feasibility Study (FS) process. During the FS, various alternative remedial actions developed during the Remedial Investigation (RI) are initially screened and narrowed down to the list of potential alternative remedial actions that will be evaluated in detail. These alternative remedial actions are evaluated using the criteria discussed in TAGM 4030, Selection of Remedial Actions at Inactive Hazardous Waste Sites, revised May 15, 1990, and the preferred remedial action will be selected. After the detailed evaluation of the preferred remedial action, the final cleanup levels which can be actually achieved using the preferred remedial action must be established. Remedy selection, which will include final cleanup levels, is the subject of TAGM 4030.

Recommended soil cleanup objectives that have been calculated by the Technology Section are presented in Appendix A. These objectives are based on a soil organic carbon content of 1% (0.01) and should be adjusted for the actual organic carbon content if it is known. For determining soil organic carbon content, use attached USEPA method (Appendix B). Please contact the Technology Section, Bureau of Program Management for soil cleanup objectives not included in Appendix A.

TAGM 4046 Footnotes:

1. Class A are proved human carcinogens.
 2. Class B are probable human carcinogens
 3. Class C are possible human carcinogens
-

APPENDIX A

TABLE 1
Recommended soil cleanup objectives (mg/kg or ppm)
Volatile Organic Contaminants

Contaminant	Partition Coefficient, K _{oc}	Groundwater Standards/ Criteria, C _w (ug/l or ppb)	a Allowable soil conc., C _s (ppm)	b ** Soil cleanup objectives to protect GW quality (ppm)	USEPA Health Based (ppm)		CRQL (ppb)	*** Rec. Soil Cleanup Objective (ppm)
					Carcinogens	Systemic Toxicants		
Acetone	2.2	50	0.0011	0.11	N/A	8,000	10	0.2
Benzene	83	0.7	0.0006	0.06	24	N/A	5	0.06
Benzoic Acid	54 *	50	0.027	2.7	N/A	300,000	5	2.7
2-Butanone	4.5 *	50	0.003	0.3	N/A	4,000	10	0.3
Carbon Disulfide	54 *	50	0.027	2.7	N/A	8,000	5	2.7
Carbon Tetrachloride	110 *	5	0.006	0.6	5.4	60	5	0.6
Chlorobenzene	330	5	0.017	1.7	N/A	2,000	5	1.7
Chloroethane	37 *	50	0.019	1.9	N/A	N/A	10	1.9
Chloroform	31	7	0.003	0.30	114	800	5	0.3
Dibromochloromethane	N/A	50	N/A	N/A	N/A	N/A	5	N/A
1,2-Dichlorobenzene	1,700	4.7	0.079	7.9	N/A	N/A	330	7.9
1,3-Dichlorobenzene	310 *	5	0.0155	1.55	N/A	N/A	330	1.6
1,4-Dichlorobenzene	1,700	5	0.085	8.5	N/A	N/A	330	8.5
1,1-Dichloroethane	30	5	0.002	0.2	N/A	N/A	5	0.2
1,2-Dichloroethane	14	5	0.001	0.1	7.7	N/A	5	0.1
1,1-Dichloroethene	65	5	0.004	0.4	12	700	5	0.4
1,2-Dichloroethene (trans)	59	5	0.003	0.3	N/A	2,000	5	0.3
1-3 dichloropropane	51	5	0.003	0.3	N/A	N/A	5	0.3
Ethylbenzene	1,100	5	0.055	5.5	N/A	8,000	5	5.5
113 Freon (1,1,2 Trichloro-1,2,2 Trifluoroethane)	1,230 *	5	0.060	6.0	N/A	200,000	5	6.0
Methylene chloride	21	5	0.001	0.1	93	5,000	5	0.1
4-Methyl-2-Pentanone	19 *	50	0.01	1.0	N/A	N/A	10	1.0

TABLE 1 (Continued)

Contaminant	Partition Coefficient, Koc	Groundwater Standards/ Criteria, Cw (ug/l or ppb)	a Allowable soil conc., Cs (ppm)	b ** Soil cleanup objectives to protect GW quality (ppm)	USEPA Health Based (ppm)		CRQL (ppb)	*** Rec. Soil Cleanup Objective (ppm)
					Carcinogens	Systemic Toxicants		
Tetrachloroethene	277	5	0.014	1.4	14	800	5	1.4
1,1,1-Trichloroethane	152	5	0.0076	0.76	N/A	7,000	5	0.8
1,1,2,2-Tetrachloroethane	118	5	0.006	0.6	35	N/A	5	0.6
1,2,3-trichloropropane	68	5	0.0034	0.34	N/A	80	5	0.4
1,2,4-trichlorobenzene	670 *	5	0.034	3.4	N/A	N/A	330	3.4
Toluene	300	5	0.015	1.5	N/A	20,000	5	1.5
Trichloroethene	126	5	0.007	0.70	64	N/A	5	0.7
Vinyl chloride	57	2	0.0012	0.12	N/A	N/A	10	0.2
Xylenes	240	5	0.012	1.2	N/A	200,000	--	1.2

a. Allowable Soil Concentration $C_s = f \times C_w \times K_{oc}$

b. Soil cleanup objective = $C_s \times$ Correction Factor (CF)

N/A is not available

* Partition coefficient is calculated by using the following equation:
 $\log K_{oc} = -0.55 \log S + 3.64$, where S is solubility in water in ppm.
 All other Koc values are experimental values.

** Correction Factor (CF) of 100 is used as per TAGM #4046

*** As per TAGM #4046, Total VOCs < 10 ppm.

Note: Soil cleanup objectives are developed for soil organic carbon content (f) of 1%, and should be adjusted for the actual soil organic carbon content if it is known.

APPENDIX A

TABLE 2
Recommended soil cleanup objectives (mg/kg or ppm)
Semi-Volatile Organic Contaminants

Contaminant	Partition Coefficient, Koc	Groundwater Standards/ Criteria, Cw (ug/l or ppb)	a Allowable soil conc., Cs (ppm)	b ** Soil cleanup objectives to protect GW quality (ppm)	USEPA Health Based (ppm)		CRQL (ppb)	*** Rec. Soil Cleanup Objective (ppm)
					Carcinogens	Systemic Toxicants		
Acenaphthene	4,600	20	0.9	90.0	N/A	5,000	330	50.0 ***
Acenaphthylene	2,056 *	20	0.41	41.0	N/A	N/A	330	41.0
Aniline	13.8	5	0.001	0.1	123	N/A	330	0.1
Anthracene	14,000	50	7.00	700.0	N/A	20,000	330	50.0 ***
Benzo(a)anthracene	1,380,000	0.002	0.03	3.0	0.224	N/A	330	0.224 or MDL
Benzo (a) pyrene	5,500,000	0.002 (ND)	0.110	11.0	0.0609	N/A	330	0.061 or MDL
Benzo (b) fluoranthene	550,000	0.002	0.011	1.1	N/A	N/A	330	1.1
Benzo (g,h,i) perylene	1,600,000	5	8.0	800	N/A	N/A	330	50.0 ***
Benzo (k) fluoranthene	550,000	0.002	0.011	1.1	N/A	N/A	330	1.1
bis(2-ethylhexyl)phthalate	8,706 *	50	4.35	435.0	50	2,000	330	50.0 ***
Butylbenzylphthlate	2,430	50	1.215	122.0	N/A	20,000	330	50.0 ***
Chrysene	200,000	0.002	0.004	0.4	N/A	N/A	330	0.4
4- Chloroaniline	43 ****	5	0.0022	0.22	200	300	330	0.220 or MDL
4-Chloro-3-methylphenol	47	5	0.0024	0.24	N/A	N/A	330	0.240 or MDL
2-Chlorophenol	15 *	50	0.008	0.8	N/A	400	330	0.8

TABLE 2 (Continued)

Contaminant	Partition Coefficient, K _{oc}	Groundwater Standards/ Criteria, C _w (ug/l or ppb)	a Allowable soil conc., C _s (ppm)	b ** Soil cleanup objectives to protect GW quality (ppm)	USEPA Health Based (ppm)		CRQL (ppb)	*** Rec. Soil Cleanup Objective (ppm)
					Carcinogens	Systemic Toxicants		
Dibenzofuran	1,230 *	5	0.062	6.2	N/A	N/A	330	6.2
Dibenzo(a,h)anthracene	33,000,000	50	1,650	165,000	0.0143	N/A	330	0.014 or MDL
3,3'-Dichlorobenzidine	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dichlorophenol	380	1	0.004	0.4	N/A	200	330	0.4
2,4-Dinitrophenol	38	5	0.002	0.2	N/A	200	1,600	0.200 or MDL
2,6 Dinitrotoluene	198*	5	0.01	1.0	1.03	N/A	330	1.0
Diethylphthlate	142	50	0.071	7.1	N/A	60,000	330	7.1
Dimethylphthlate	40	50	0.020	2.0	N/A	80,000	330	2.0
Di-n-butyl phthalate	162*	50	0.081	8.1	N/A	8,000	330	8.1
Di-n-octyl phthlate	2,346 *	50	1.2	120.0	N/A	2,000	330	50.0 ***
Fluoranthene	38,000	50	19	1900.0	N/A	3,000	330	50.0 ***
Fluorene	7,300	50	3.5	350.0	N/A	3,000	330	50.0 ***
Hexachlorobenzene	3,900	0.35	0.014	1.4	0.41	60	330	0.41
Indeno (1,2,3-cd)pyrene	1,600,000	0.002	0.032	3.2	N/A	N/A	330	3.2
Isophorone	88.31 *	50	0.044	4.40	1,707	20,000	330	4.40
2-methylnaphthalene	727 *	50	0.364	36.4	N/A	N/A	330	36.4
2-Methylphenol	15	5	0.001	0.1	N/A	N/A	330	0.100 or MDL
4-Methylphenol	17	50	0.009	0.9	N/A	4,000	330	0.9
Naphthalene	1,300	10	0.130	13.0	N/A	300	330	13.0
Nitrobenzene	36	5	0.002	0.2	N/A	40	330	0.200 or MDL

TABLE 2 (Continued)

Contaminant	Partition Coefficient, Koc	Groundwater Standards/ Criteria, Cw (ug/l or ppb)	a Allowable soil conc., Cs (ppm)	b ** Soil cleanup objectives to protect GW quality (ppm)	USEPA Health Based (ppm)		CRQL (ppb)	*** Rec. Soil Cleanup Objective (ppm)
					Carcinogens	Systemic Toxicants		
2-Nitroaniline	86	5	0.0043	0.43	N/A	N/A	1,600	0.430 or MDL
2-Nitrophenol	65	5	0.0033	0.33	N/A	N/A	330	0.330 or MDL
4-Nitrophenol	21	5	0.001	0.1	N/A	N/A	1,600	0.100 or MDL
3-Nitroaniline	93	5	0.005	0.5	N/A	N/A	1,600	0.500 or MDL
Pentachlorophenol	1,022	1	0.01	1.0	N/A	2,000	1,600	1.0 or MDL
Phenanthrene	4,365 *	50	2.20	220.0	N/A	N/A	330	50.0 ***
Phenol	27	1	0.0003	0.03	N/A	50,000	330	0.03 or MDL
Pyrene	13,295 *	50	6.65	665.0	N/A	2,000	330	50.0 ***
2,4,5-Trichlorophenol	89 *	1	0.001	0.1	N/A	8,000	330	0.1

a. Allowable Soil Concentration $C_s = f \times C_w \times K_{oc}$

b. Soil cleanup objective = $C_s \times$ Correction Factor (CF)

N/A is not available

MDL is Method Detection Limit

* Partition coefficient is calculated by using the following equation:

$\log K_{oc} = -0.55 \log S + 3.64$, where S is solubility in water in ppm.

Other Koc values are experimental values.

** Correction Factor (CF) of 100 is used as per TAGM #4046

*** As per TAGM #4046, Total VOCs < 10 ppm., Total Semi-VOCs < 500ppm. and Individual Semi-VOCs < 50 ppm.

**** Koc is derived from the correlation $K_{oc} = 0.63 K_{ow}$ (Determining Soil Response Action Levels.....

EPA/540/2-89/057). Kow is obtained from the USEPA computer database 'MAIN'.

Note: Soil cleanup objectives are developed for soil organic carbon content (f) of 1%, and should be adjusted for the actual soil organic carbon content if it is known.

APPENDIX A

TABLE 3
Recommended soil cleanup objectives (mg/kg or ppm)
Organic Pesticides / Herbicides and PCBs

Contaminant	Partition Coefficient, K _{oc}	Groundwater Standards/ Criteria, C _w (ug/l or ppb)	a Allowable soil conc., C _s (ppm)	b ** Soil cleanup objectives to protect GW quality (ppm)	USEPA Health Based (ppm)		CRQL (ppb)	*** Rec. Soil Cleanup Objective (ppm)
					Carcinogens	Systemic Toxicants		
Aldrin	96,000	ND (<0.01)	0.005	0.5	0.041	2	8	0.041
alpha- BHC	3,800	ND (<0.05)	0.002	0.2	0.111	N/A	8	0.11
beta - BHC	3,800	ND (<0.05)	0.002	0.2	3.89	N/A	8	0.2
delta - BHC	6,600	ND (<0.05)	0.003	0.3	N/A	N/A	8	0.3
Chlordane	21,305 *	0.1	0.02	2.0	0.54	50	80	0.54
2,4-D	104 *	4.4	0.005	0.5	N/A	800	800	0.5
4,4'- DDD	770,000 *	ND (<0.01)	0.077	7.7	2.9	N/A	16	2.9
4,4'-DDE	440,000 *	ND (<0.01)	0.0440	4.4	2.1	N/A	16	2.1
4,4'-DDT	243,000 *	ND (<0.01)	0.025	2.5	2.1	40	16	2.1
Dibenzo-P-dioxins (PCDD) 2,3,7,8 TCDD	1709800	0.000035	0.0006	0.06	N/A	N/A	N/A	N/A
Dieldrin	10,700 *	ND (<0.01)	0.0010	0.1	0.044	4	16	0.044
Endosulfan I	8,168 *	0.1	0.009	0.9	N/A	N/A	16	0.9
Endosulfan II	8,031 *	0.1	0.009	0.9	N/A	N/A	16	0.9
Endosulfan Sulfate	10,038 *	0.1	0.01	1.0	N/A	N/A	16	1.0
Endrin	9,157 *	ND (<0.01)	0.001	0.1	N/A	20	8	0.10

TABLE 3 (Continued)

Contaminant	Partition Coefficient, Koc	Groundwater Standards/ Criteria, Cw (ug/l or ppb)	a Allowable soil conc., Cs (ppm)	b ** Soil cleanup objectives to protect GW quality (ppm)	USEPA Health Based (ppm)		CRQL (ppb)	*** Rec. Soil Cleanup Objective (ppm)
					Carcinogens	Systemic Toxicants		
Endrin keytone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
gamma - BHC (Lindane)	1,080	ND (<0.05)	0.0006	0.06	5.4	20	8	0.06
gamma - chlordane	140,000	0.1	0.14	14.0	0.54	5	80	0.54
Heptachlor	12,000	ND (<0.01)	0.0010	0.1	0.16	40	8	0.10
Heptachlor epoxide	220	ND (<0.01)	0.0002	0.02	0.077	0.8	8	0.02
Methoxychlor	25,637	35.0	9.0	900	N/A	400	80	***
Mitotane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Parathion	760	1.5	0.012	1.2	N/A	500	8	1.2
PCBs	17,510 *	0.1	0.1	10.0	1.0	N/A	160	1.0 (Surface) 10 (sub-surf)
Polychlorinated dibenzo-furans (PCDF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Silvex	2,600	0.26	0.007	0.7	N/A	600	330	0.7
2,4,5-T	53	35	0.019	1.9	N/A	200	330	1.9

a. Allowable Soil Concentration $C_s = f \times C_w \times K_{oc}$

b. Soil cleanup objective = $C_s \times$ Correction Factor (CF)

N/A is not available

* Partition coefficient is calculated by using the following equation:
 $\log K_{oc} = -0.55 \log S + 3.64$, where S is solubility in water in ppm.
 All other Koc values are experimental values.

** Correction Factor (CF) of 100 is used as per TAGM #4046

*** As per TAGM #4046, Total VOCs < 10 ppm.

Note: Soil cleanup objectives are developed for soil organic carbon content (f) of 1% (5% for PCBs as per PCB Guidance Document), and should be adjusted for the actual soil organic carbon content if it is known.

APPENDIX A

TABLE 4
Recommended soil cleanup objectives (mg/kg or ppm)
Heavy Metals

Contaminants	Protect Water Quality (ppm)	Eastern USA Background (ppm)	* CRDL (mg/kg or ppm)	***** Rec. Soil Cleanup Objective (ppm)
Aluminum	N/A	33,000	2.0	SB
Antimony	N/A	N/A	0.6	SB
Arsenic	N/A	3-12 **	0.1	7.5 or SB
Barium	N/A	15-600	2.0	300 or SB
Beryllium	N/A	0-1.75	0.05	0.16 (HEAST) or SB
Cadmium	N/A	0.1-1	0.05	1 or SB
Calcium	N/A	130 - 35,000 ***	50.0	SB
Chromium	N/A	1.5 - 40 **	0.1	10 or SB
Cobalt	N/A	2.5 - 60 **	0.5	30 or SB
Copper	N/A	1 - 50	0.25	25 or SB
Cyanide	N/A	N/A	0.1	***
Iron	N/A	2,000 - 550,000	1.0	2,000 or SB
Lead	N/A	*****	0.03	SB *****
Magnesium	N/A	100 - 5,000	50.0	SB
Manganese	N/A	50 - 5,000	0.15	SB
Mercury	N/A	0.001 - 0.2	0.002	0.1
Nickel	N/A	0.5 -25	0.4	13 or SB
Potassium	N/A	8,500 - 43,000 **	50.0	SB
Selenium	N/A	0.1 - 3.9	0.05	2 or SB
Silver	N/A	N/A	0.1	SB
Sodium	N/A	6,000 - 8,000	50.0	SB
Thallium	N/A	N/A	0.1	SB
Vanadium	N/A	1-300	0.5	150 or SB
Zinc	N/A	9-50	0.2	20 or SB

Note: Some forms of metal salts such as Aluminum Phosphide, Calcium Cyanide, Potassium Cyanide, Copper cyanide, Silver cyanide, Sodium cyanide, Zinc phosphide, Thallium salts, Vanadium pentoxide and Chromium (VI) compounds are more toxic in nature. Please refer to the USEPA HEASTs database to find cleanup objectives if such metals are present in soil.

SB is site background

N/A is not available

- * CRDL is contract required detection limit which is approx. 10 times the CRDL for water.
- ** New York State background
- *** Some forms of Cyanide are complex and very stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objective.
- **** Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
- ***** Recommended soil cleanup objectives are average background concentrations as reported in a 1984 survey of reference material by E. Carol McGovern, NYSDEC.

APPENDIX B

Conventional Sediment Variables
Total Organic Carbon (TOC)
March 1986

TOTAL ORGANIC CARBON (TOC)

USE AND LIMITATIONS

Total organic carbon is a measure of the total amount of nonvolatile, volatile, partially volatile, and particulate organic compounds in a sample. Total organic carbon is independent of the oxidation state of the organic compounds and is not a measure of the organically bound and inorganic elements that can contribute to the biochemical and chemical oxygen demand tests.

Because inorganic carbon (e.g., carbonates, bicarbonates, free CO₂) will interfere with total organic carbon determinations, samples should be treated to remove inorganic carbon before being analyzed.

FIELD PROCEDURES

Collection

Samples can be collected in glass or plastic containers. A minimum sample size of 25 g is recommended. If unrepresentative material is to be removed from the sample, it should be removed in the field under the supervision of the chief scientist and noted on the field log sheet.

Processing

Samples should be stored frozen and can be held for up to 6 months under that condition. Excessive temperatures should not be used to thaw samples.

LABORATORY PROCEDURES

Analytical Procedures

- Equipment
 - Induction furnace
e.g., Leco WR-12, Dohrmann DC-50, Coleman CH analyzer,
Perkin Elmer 240 elemental analyzer, Carlo-Erba 1106
 - Analytical balance
0.1 mg accuracy
 - Desiccator
 - Combustion boats
 - 10 percent hydrochloric acid (HCL)
 - Cupric oxide fines (or equivalent material)
 - Benzoic acid or other carbon source as a standard.
- Equipment preparation

- Clean combustion boats by placing them in the induction furnace at 950° C. After being cleaned, combustion boats should not be touched with bare hands.
 - Cool boats to room temperature in a desiccator.
 - Weigh each boat to the nearest 0.1 mg.
- Sample preparation
- Allow frozen samples to warm to room temperature.
 - Homogenize each sample mechanically, incorporating any overlying water.
 - Transfer a representative aliquot (5-10 g) to a clean container.
- Analytical procedures
- Dry samples to constant weight at $70 \pm 2^\circ\text{C}$. The drying temperature is relatively low to minimize loss of volatile organic compounds.
 - Cool dried samples to room temperature in a desiccator.
 - Grind sample using a mortar and pestle to break up aggregates.
 - Transfer a representative aliquot (0.2-0.5 g) to a clean, preweighed combustion boat.
 - Determine sample weight to the nearest 0.1 mg.
 - Add several drops of HCL to the dried sample to remove carbonates. Wait until the effervescing is completed and add more acid. Continue this process until the incremental addition of acid causes no further effervescence. Do not add too much acid at one time as this may cause loss of sample due to frothing. Exposure of small samples (i.e., 1-10 mg) having less than 50 percent carbonate to an HCL atmosphere for 24-48 h has been shown to be an effective means of removing carbonates (Hedges and Stern 1984). If this method is used for sample sizes greater than 10 mg, its effectiveness should be demonstrated by the user.
 - Dry the HCL-treated sample to constant weight at $70 \pm 2^\circ\text{C}$.
 - Cool to room temperature in a desiccator.
 - Add previously ashed cupric oxide fines or equivalent material (e.g., alumina oxide) to the sample in the combustion boat.
 - Combust the sample in an induction furnace at a minimum temperature of $950 \pm 10^\circ\text{C}$.
- Calculations
- If an ascarite-filled tube is used to capture CO_2 , the carbon content of the sample can be calculated as follows:

$$\text{Percent carbon} = \frac{A (0.2729) (100)}{B}$$

Where:

A = the weight (g) of CO₂ determined by weighing the ascarite tube before and after combustion

B = dry weight (g) of the unacidified sample in the combustion boat

0.2729 = the ratio of the molecular weight of carbon to the molecular weight of carbon dioxide

A silica gel trap should be placed before the ascarite tube to catch any moisture driven off during sample combustion. Additional silica gel should be placed at the exit end of the ascarite tube to trap any water that might be formed by reaction of the trapped CO₂ with the NaOH in the ascarite.

- If an elemental analyzer is used, the amount of CO₂ will be measured by a thermal conductivity detector. The instrument should be calibrated daily using an empty boat blank as the zero point and at least two standards. Standards should bracket the expected range of carbon concentrations in the samples.

QA/QC Procedures

It is critical that each sample be thoroughly homogenized in the laboratory before a subsample is taken for analysis. Laboratory homogenization should be conducted even if samples were homogenized in the field.

Dried samples should be cooled in a desiccator and held there until they are weighed. If a desiccator is not used, the sediment will accumulate ambient moisture and the sample weight will be overestimated. A color-indicating desiccant is recommended so that spent desiccant can be detected easily. Also, the seal on the desiccator should be checked periodically and, if necessary, the ground glass rims should be greased or the "O" rings should be replaced.

It is recommended that triplicate analyses be conducted on one of every 20 samples, or on one sample per batch if less than 20 samples are analyzed. A method blank should be analyzed at the same frequency as the triplicate analyses. The analytical balance should be inspected daily and calibrated at least once per week. The carbon analyzer should be calibrated daily with freshly prepared standards. A standard reference material should be analyzed at least once for each major survey.


DATA REPORTING REQUIREMENTS

Total organic carbon should be reported as a percentage of the dry weight of the unacidified sample to the nearest 0.1 unit. The laboratory should report the results of all samples (including QA replicates, method blanks, and standard reference measurements) and should note any problems that may have influenced sample quality. The laboratory should also provide a summary of the calibration procedure and results (e.g., range covered, regression equation, coefficient of determination).

United States Environmental Protection Agency Region II

Date: September 20, 2007

Subject: Removal Site Evaluation for the Frankfort Asbestos Site,
Frankfort, Herkimer County, New York

From: Dave Rosoff, On-Scene Coordinator 
Removal Action Branch

To: File

The United States Environmental Protection Agency's (EPA's) Removal Action Branch (RAB) received a request from the EPA Office of Criminal Enforcement, Criminal Investigations Division (CID) on June 5, 2007 to determine whether conditions at the Frankfort Asbestos Site (Site) warranted a CERCLA removal action. The Site is located in a rural area at 3720 Southside Road 1.25 miles outside of the Village of Frankfort, New York. The 1.75-acre Site is part of a larger 192-acre former dairy farm. The Site consists of a large pile of shredded building debris, approximately 50,000 square feet in area and up to 20 feet high. Based on sampling conducted by CID the shredded building debris is known to contain asbestos (ACM). This material was disposed of on the property illegally in 2006. The property is designated as Sheet 112.3-1-14.1 on the Herkimer County tax map. Residential properties are located within 200 feet of the Site across Southside Road to the south and within 800 feet to the east and west on the north side of Southside Road. The debris disposal area extends onto the flood plain of the Mohawk River. Surrounding land use is a mixture of farmland and residential. The population within one-half mile of the Site is approximately 2,537 persons.

On November 14, 2006, EPA-CID and representatives from the National Enforcement Investigations Center (NEIC) collected samples of the debris piles at the Site. Samples were collected from broken tiles, transite, shingles, cement sheeting as well as dirt and other miscellaneous debris. A total of 16 representative samples were collected during the sampling event. Of the 16 samples, nine were found to contain asbestos at concentrations greater than 1%, with the highest concentration being 21% chrysotile asbestos. All of these samples were made up of either tile fragments or cement wallboard. According to the National Emissions Standards for Hazardous Air Pollutants (NESHAPs), tile is considered to be Category I non friable ACM. This material becomes Regulated Asbestos Containing Material (RACM) if: 1) it has become friable or 2) if it will be or has been subjected to sanding, grinding, cutting or abrading. Because of the

CONCURRENCES

Name: Frankfort		Init: ss	Date: 10/1/07	Filename: Frankfort rse			
Symbol	ERRD-RAB	ERRD-RAB	ERRD-RAB				
Surname	ROSOFF	MAGRIPLES	ROGLA				
Date	DR 9/20/07	10/1/07	10/1/07				

condition of the building materials and the demolition process the material was put through, it is reasonable and appropriate to assume that the material in the pile has become friable.

As a follow-up to the CID investigation, between July 31 and August 2, 2007, EPA's RAB conducted a removal assessment of the Site. EPA's removal assessment included the collection of surface soil samples around the base of the pile, on the floodplain of the Mohawk River and in the adjacent properties downwind to the east to determine if contaminants suspected of being in the pile had migrated into surrounding areas via wind or water pathways. The assessment also included sampling of the shredded building material on the pile for lead and semi volatile organic compound (SVOC) analysis. The following is a summary of the results of the assessment sampling.

Asbestos was not detected in any of the 42 surface soil samples that were submitted for Polarized Light Microscopy (PLM) analysis by CARB 435. Eleven samples were then selected for asbestos analysis via Transmission Electron Microscopy (TEM) analysis. All eleven samples were reported at below 0.1% asbestos.

Forty-nine debris and soil samples were submitted for total lead analysis. A breakdown of the results is as follows:

Shredded construction debris pile (11 samples) 270 to 7,700 mg/kg
Old debris pile (3 samples) 36 to 110 mg/kg
Soil surrounding the debris pile (13 samples) 7.2 to 88 mg/kg
Flood plain (9 samples) 7.3 to 120 mg/kg
Residence at # 3761 Southside Road (2 samples) 23 to 82 mg/kg
Open Field adjacent to residence (7 samples) 24 to 43 mg/kg
String Bean Field adjacent to debris pile (4 samples) 19 to 28 mg/kg

Numerous SVOCs were detected in the debris pile samples including dimethylphthlate (up to 3,900 ug/kg), benzo(k)fluoranthene (up to 6,900 ug/kg), benzo(a)anthracene (up to 7,600 ug/kg), benzo(a)pyrene (up to 7,600 ug/kg), and dibenzo(a,h)anthracene (up to 1,400 ug/kg). Numerous SVOCs were detected in the soil samples that were collected around the debris pile including benzo(a)anthracene (up to 540 ug/kg), benzo(a)pyrene (up to 570 ug/kg), and dibenzo(a,h)anthracene (up to 190 ug/kg). Benzo(a)pyrene was found in every soil sample.

All of the analytical results from the sampling conducted during the removal assessment are presented in the Weston Solutions Removal Assessment Trip Report, dated September 2007.

A visual inspection of the debris pile demonstrated that the entire pile appears to be comprised of two distinct sections. The "old" portion of the debris pile appeared to be made up of construction and concrete debris. The "new" portion of the debris pile appears to have been added later and is comprised of the shredded construction debris. The perimeter of the new debris pile is 900 feet and the perimeter of the entire debris pile

(old and new sections) was measured at 1,200 feet. Total area of both sections is approximately 75,500 square feet.

During the removal assessment EPA observed leachate emanating from the northwest toe of the pile. This leachate had a strong sulfurous odor and had caused stressed vegetation and a bird kill in its path. Samples from this area did not show significantly elevated levels of heavy metals or organic compounds in the soil (full TCL Organics and TAL Metals analysis conducted).

Asbestos and lead are hazardous substances as defined in 40 CFR Table 302.4. The Site is defined as a facility under section 101(9) of CERCLA., 42 U.S.C. Section 9601(9). The abandonment of wastes containing these hazardous substances at the Site constitutes a "release," as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22). This release presents an imminent and substantial endangerment to public health and the environment. In addition, there is a threat of further releases of hazardous substances at and from the Site due to weather conditions.

Conditions at the Site meet the requirements of Section 300.415(b) of the National Contingency Plan (NCP) for the undertaking of a CERCLA removal action. Factors from the NCP Section 300.415(b)(2) that support conducting a removal action at the site are discussed below.

There is a potential exposure to a hazardous substance by nearby human populations (§300.415(b)(2)(i)).

There is a potential threat to human health posed by the ACM that has been disposed of on the Site. Currently, the Site is unsecured and open to vehicular and pedestrian traffic. Vehicles were observed driving on the pile during the assessment. Persons accessing the Site will come in direct contact with ACM present in the debris disposal area resulting in possible inhalation of asbestos fibers and the contamination of clothing.

The ACM pile is located within 100 feet of Southside Road and in the flood plain of the Mohawk River. Reportedly the pile was subject to erosion during the spring floods this year. The Site experiences frequent moderate to heavy winds from the west and, because the pile is not covered, exposure to these windy conditions could result in the transportation of asbestos fibers to properties and receptors downwind. The density of residential properties increases to the east into the Village of Frankfort approximately one-half mile away. During periods of excessive wind, the potential exists for passing motorists traveling Southside Road to be exposed to asbestos-containing dust migrating across the roadway.

Friable asbestos is a known human carcinogen. Inhalation of asbestos is the primary route of exposure. Two types of cancers are associated with asbestos; mesothelioma, cancer of the pleural lining and lung cancer a malignant tumor of the bronchi. In addition to the cancer threat, asbestos may cause asbestosis, which is a scarring of lung tissue that diminishes the elasticity of the tissue, resulting in poor respiratory function.

There are high levels of hazardous substances, or pollutants, or contaminants in soils largely at or near the surface, that may migrate (§300.415(b)(2)(iv)).

Sampling within various portions of the demolition debris fill area indicated the presence of chrysotile asbestos at concentrations as high as 21% and lead up to 7,700 ppm. The perimeter of the fill area is located within close proximity to the Mohawk River and adjacent farmland. Weather conditions at the Site (rain, snow, wind), could cause contaminated material to migrate into non-impacted areas.

There are no State/local response actions expected to mitigate the threats to public health or the environment on the Site (§300.415(b)(2)(vii)). EPA is the only government agency capable of taking timely and appropriate action to respond to the threat posed by the presence of hazardous substances at the Site.

A CERCLA removal action should be undertaken to remove the shredded building materials from the Site to prevent human exposure to the ACM and lead contaminated debris. These materials should be transported and properly disposed of at an appropriate facility. In the short term, while preparing for the removal of this large volume of material, the pile should be covered to prevent release of contamination to off-Site areas.

EPA REGIONAL GUIDANCE DOCUMENTS

The following documents are available for public review at the EPA Region II Field Office, 2890 Woodbridge Avenue, Edison, New Jersey 08837 during regular business hours.

- * Glossary of EPA Acronyms.
- * Superfund Removal Procedures--Revision #3. OSWER Directive 9360.0-03B, February 1988.
- * Hazardous Waste Operations and Emergency Response. Notice of Proposed Rule Making and Public Hearings. 29 CFR Part 1910, Monday, August 10, 1987.
- * Guidance on Implementation of Revised Statutory Limits on Removal Action. OSWER Directive 9260.0-12, May 25, 1988.
- * Redefinition of Authority under CERCLA and SARA. OSWER Directive 9012.10, May 25, 1988.
- * Removal Cost Management Manual. OSWER Directive 9360.0-02B, April, 1988.
- * Field Standard Operating Procedures (FSOP).
 - #4 Site Entry.
 - #6 Work Zones.
 - #8 Air Surveillance.
 - #9 Site Safety Plan.
- * Standard Operating Safety Guides -- U.S. EPA Office of Emergency and Remedial Response, July 5, 1988.
- * CERCLA Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund).
- * SARA: Superfund Amendments and Reauthorization Act of 1986.
- * NCP: National Oil and Hazardous Substances Pollution Contingency Plan. - Publication No. 9200.2-14.
- * Guidance on Implementation of the "Contribute to Efficient Remedial Performance" Provision - Publication No. 9360.0-13.

Additional Guidance Documents are listed below and are available for review at the EPA Region II Removal Records Center.

- * The Role of Expedited Response Actions (EPA) Under SARA - Publication No. 9360.0-15.
- * Guidance on Non-NPL Removal Actions Involving Nationally Significant or Precedent Setting Issues - Publication No. 9360.0-19.
- * ARARS During Removal Actions - Publication No. 9360.3-02.
- * Consideration of ARARS During Removal Actions -Publication No. 9360.3-02FS.
- * Public Participation for OSCs - Community Relations and the Administrative Record - Publication No.9360.3-05.
- * Superfund Removal Procedures - Removal Enforcement Guidance for On-Scene Coordinators - Publication No. 9360.3-06.
- * QA/QC for Removal Actions - Publication No. 9360.4-01.
- * Compendium for ERT Air Sampling Procedures - Publication No. 9360.4-05.