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WORKPLAN

FOR SITE INVESTIGATION

AND INTERIM REMEDIAL ACTIVITIES

Perx Property
68 South Broadway
Village Of Red Hook
Dutchess County, New York

Date of Preparation: September 4, 2002

ECOSYSTEMS STRATEGIES, INC.
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ESI File Number: DR99140.40

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Perx Property
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Date of Preparation: September 4, 2002

ESI File: DR99140.40

Prepared By:

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Prepared For:

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The undersigned has reviewed this Workplan for Site Investigation and Interim Remedial Activities and certifies to the Dutchess County Department of Planning that the information provided in this document is accurate as of the date of issuance by this office.

Any and all questions or comments, including requests for additional information, should be submitted to the undersigned.

Paul H. Ciminello
President

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Workplan for Site Investigation and Interim Remedial Activities (Workplan) is to provide specifications for investigative services to address known and/or potential environmental conditions (see Section 1.2.2, below) on the Perx Property located at 68 South Broadway, Village of Red Hook, Dutchess County, New York (hereafter referred to as the "Site"). It is the expressed intent of this Workplan to describe specific actions that will adequately address the recognized on-site environmental conditions so that the extent of any resulting impacts to the Site and/or the immediately surrounding area are documented and the need, if any, for investigative or remedial activities is established. This Workplan addresses specific concerns raised by the NYSDEC in previous correspondence on this Site.

Specifically, the objectives of the proposed Workplan are as follows:

1. To remove and to document the presence or absence of soil contamination near on-site underground storage tanks (USTs).
2. To remove and to document the presence or absence of soil contamination near on-site aboveground storage tanks (ASTs).
3. To remove drums located within the on-site building.
4. To identify all on-site, interior floor drains and determine their discharge points, if possible.
5. To further define residual contamination from pesticide usage on the Site, including additional soils, sediment and groundwater sampling.

For the purpose of the work detailed in these specifications, the "Municipality" is defined as the Dutchess County Department of Planning, which will contract with an environmental consultant to provide the services detailed in Section 2.0, below. For the purpose of the work detailed in these specifications, the designated environmental consultant will hereafter be referred to as the "Municipality's Consultant" or the "On-Site Coordinator" ("OSC").

1.2 Site Information

1.2.1 Site Identification and Location

The Perx Property facility located at 68 South Broadway in the Village of Red Hook, Dutchess County, New York (see Site Location Map, Attachment A). The property is approximately 20 acres in size. Frontage along the western side of South Broadway provides access to the Site. A chain-link fence surrounds the Site. For the purpose of this Workplan, the Site is defined as the northern portion of the 5.0-acre lot which contains a one-story warehouse and showroom structure (see below).

1.2.2 Site History and Environmental Conditions of Concern

Information obtained during the preparation of a previous Phase I ESA conducted by Ecosystems Strategies, Inc.. (ESI) indicates that the on-site structures had been present on the subject property since the mid-1950s. The subject property had been used as an apple processing facility since 1949 and was also a frozen food processing and packaging plant from 1955 to some time after 1981. Apple orchards were located on the western portion of the subject property during the 1950s and 1960s. It was believed that the subject property had been vacant for approximately 10 to 15 years.

Phase I and subsurface environmental investigations prepared by ESI have documented environmental conditions of concern, including the following:

- the presence of at least three, unregistered underground storage tanks (USTs) on the Site for which no records of tank or soil integrity were available;
- evidence of soil contamination in a former orchard area from metal-based pesticide usage. Arsenic in levels exceeding NYSDEC guidance values has been documented. However, a comprehensive investigation of the entire, former orchard area has not been conducted and the extent of pesticide and related metals contamination has not been fully documented, and Also, naturally-occurring background levels of metals have not been documented;
- three, empty, manifolded aboveground storage tanks (ASTs) near the maintenance garage;
- drums within the on-site structure containing undetermined liquids;
- no groundwater contamination has been identified. However, the existing three water supply wells are in close proximity to each other, and therefore not necessarily representative of conditions throughout the site. Additionally, the construction of the wells which were sampled is not known. Because the wells are supply wells, they are likely open boreholes and dilution of contaminated groundwater would likely occur;

- floor drains throughout the main processing/warehouse facility which may have received contaminants. The terminus of these drains and the integrity of surrounding soils and groundwater is not documented; and
- a wastewater treatment system, including a lagoon, may have received contaminants from apple processing activities, the integrity of the soils in this area has not been documented;

1.2.3 Proposed Future Site Re-Use

Cleanup of the Site would allow for the construction of affordable housing for seniors, the development of additional commercial space along Broadway, and the protection a significant aquifer over which the property is located.

2.0 PROPOSED INVESTIGATIVE AND REMEDIAL ACTIVITIES

This section of the Workplan details investigative activities which are proposed to address the known environmental conditions on the Site, as defined in Section 1.2.2, above.

Section 2.1 provides information on services to be conducted in anticipation of intrusive field work. Section 2.2 describes interim remedial measurements to be conducted on the Site. Section 2.3 provides detailed information on the investigative services that will be conducted by the OSC to assess Site conditions. A Proposed Field Work Map depicting relevant Site features and locations of proposed services is provided in Attachment A of this Workplan. Project deliverables (i.e., written reports) are described in Section 2.4.

2.1 Site Preparation Services

2.1.1 Project Management

The Municipality's Consultant will be responsible for the effective implementation of the services described in this Workplan, including adherence to the schedule set forth in Section 3.0 of this Workplan, barring unforeseen conditions. Prior to the initiation of work, the identities and qualifications of the project managers and associated staff will be supplied to the NYSDEC. The Municipality will ensure that qualified personnel are used. All on-site staff will be appropriately trained in accordance with Occupational Safety and Health Administration (OSHA) practices (29 CFR, Part 1910).

Prior to the initiation of field work, a Site Health and Safety Officer will be designated by the Municipality, and a complete Health and Safety Plan will be provided (see Section 2.1.2, below).

2.1.2 Health and Safety Plan

A Site-specific Health and Safety Plan (HASP) will be reviewed with Site personnel prior to the initiation of fieldwork. This HASP will be reviewed with the appropriate subcontractors prior to the initiation of field work. All proposed work will be performed in "Level D" personal protective equipment; however, field personnel (including subcontractors) will be prepared to continue services wearing more protective levels of equipment should field conditions warrant. A copy of the HASP is included as Attachment B of this Workplan.

2.1.3 Quality Assurance / Quality Control

Equipment

Prior to the initiation of field work, all field equipment to be used during the work will be properly decontaminated in accordance with NYSDEC guidelines, and all field instruments will be properly calibrated in accordance with procedures set forth by the equipment manufacturer(s). Unless otherwise specified, a MiniRAE 2000 (Model PGM 7600) photo-ionization detector (PID) will be used for Site-screening of organic vapors. The PID is calibrated to read parts per million calibration gas equivalents (ppm-cge) of isobutylene. The PID will be calibrated before each day of field work, not more than 24 hours prior to the commencement of field work, and a written record of calibration results will be provided in the project files.

Laboratory

All samples will be collected in accordance with applicable NYSDEC guidelines and will be submitted to a New York State Department of Health (NYSDOH) ELAP-certified laboratory using appropriate chain of custody procedures.

Dedicated, sterile glassware for sample collection will be provided by the laboratory for this project. One trip blank and one field blank will be supplied for the laboratory for each day of field work involving sample collection. Chain of custody forms will be completed by field personnel involved in sample collection, and completed custody forms will be provided in the Site Investigation Report (see Section 3.0). Also, laboratory reports will include detailed Quality Assurance/Quality Control (QA/QC) analyses which will be provided in the final Remedial Summary Report.

Category B deliverables will be submitted for confirmatory and final delineation samples. In addition, a Data Usability Summary Report (DUSR) will be prepared by a third, independent party which maintains NYSDOH ELAP CLP Certification.

2.1.4 Field Work Monitoring

An assessment of soil and groundwater characteristics, including soil type, the presence of foreign materials, field indications of contamination (e.g., unusual coloration patterns, or odors), and instrument indications of contamination (i.e., PID readings) will be made by the OSC during all Site remediation work.

The OSC will be responsible for identifying any soils which, in the opinion of the OSC, may contain elevated concentrations of contaminants and should, therefore, require special handling. The OSC will also ensure that any unforeseen environmental conditions are managed in accordance with applicable federal and state regulations.

2.1.5 Agency Notification/Communications

Agency Notification

All relevant project notifications from the Municipality and/or the Municipality's Consultant will be made to a designated representative of the NYSDEC. Unless otherwise specified or required by state regulations/local ordinances, no other public agency will be notified.

The NYSDEC will identify to the Municipality and the Municipality's Consultant a field work representative who will be contacted by the Municipality's Consultant prior to the initiation of field work. Notification of the date and time of field work services will be given to the NYSDEC representative in writing. A minimum of three working days will be provided to the NYSDEC representative, unless emergency conditions necessitate shorter notice. Every reasonable effort will be made to ensure that the NYSDEC representative is present during field work.

Scheduling Changes

A preliminary schedule of investigative services is provided in Section 3.0 of this Workplan. Any substantive changes to this schedule will be reviewed with the NYSDEC representative and, if appropriate, other NYSDEC personnel. To the extent possible, all substantive alterations to the project schedule will be provided to the NYSDEC in writing via facsimile transmission, and a response from the NYSDEC will be secured by the Municipality's Consultant prior to the adoption and implementation of scheduling changes.

2.1.6 Utility Markout

Prior to the initiation of field work, a request for a complete utility markout of the subject property will be submitted by ESI as required by New York State Department of Labor regulations. Confirmation of underground utility locations will be secured, and a field check of the utility markout will be conducted prior to any intrusive activities.

2.1.7 Subcontractors

Drilling, laboratory, and excavation/tank removal subcontractors will be used to complete the services proposed in this Workplan. The Municipality's Consultant will solicit unit price bids or quotes for all subcontracted work and will provide written quotations to the Municipality for review and subcontractor determination. A detailed scope of work, specified dollar amount, signatories to the agreement, and a time frame for performance will be included in all subcontracts.

Subcontractors will perform the requested services as specified by the Municipality's Consultant. All subcontracted work will be directly supervised by Municipality's Consultant personnel.

2.2 Interim Remedial Measures

2.2.1 UST Removal

All underground storage tanks will be removed in accordance with the procedure outlined below. Two gasoline tanks and one fuel oil tank are known to be present on the Site.

- Each tank and ancillary piping will be exposed with a backhoe. Excavated soils will be screened with a PID. Soils exhibiting field evidence of contamination (e.g., odor, discoloration, PID readings above background levels) will be segregated and stockpiled on plastic.
- Each tank will be opened and visually inspected. Encountered liquid will be identified (e.g., gasoline, fuel oil, etc.) and will be removed from the tank by a licensed liquid waste transporter/disposal firm. Proper manifests will be prepared and signed by the OSC as representative of the owner. Documentation will be provided to the owner in the Tank Closure Site Assessment.
- Each tank will be removed from the ground, and a photographic record will be made of the tank. The condition of the tank will be further documented by a visual inspection of the interior of the tank, if possible.
- Each tank will be cleaned of residual product and removed from the Site for off-site destruction. Documentation of tank destruction will be secured by the OSC and provided to the owner in the Tank Closure Site Assessment.

- Underlying and surrounding soils will be visually inspected and screened with the PID. In the event that no field evidence of contamination is identified, a minimum of five soil samples will be collected for laboratory analysis (one sample from each wall, at a point no shallower than the corresponding midpoint of the former tank, and one sample from the base of the tank "grave" at a point underneath the midpoint of the former tank). For excavated tanks greater than 2,000-gallons in capacity, a minimum of two samples will be collected from the base of the grave. Adjoining tanks will be considered located in one "grave", although base sampling would occur under each former tank in this situation.
- Should contaminated soils be encountered:
  - Soils will be excavated and stockpiled on 6-mil plastic until all such soils have been removed (in the opinion of the OSC) or until further excavation is not possible. Any stockpiled soils will be both underlain and overlain with plastic.
  - At the conclusion of excavation activities, the walls of the excavation will be sampled at a rate of one sample per 20 feet of exposed wall (minimum of one sample per wall) and one sample per 250 square feet of floor.
  - Downgradient groundwater sampling will be conducted (see Section 2.3.7, below).
  - Stockpiled soils will be sampled as per the requirements of the proposed repository. Disposition of soils will be in accordance with applicable NYSDEC regulations (e.g., Part 360).
- All samples will be analyzed as follows:

For gasoline tanks:	VOCs using Method ASP-1
	Total Weight Lead
For fuel oil tanks:	VOCs using Method ASP-1
	SVOCs (PAHs only) using Method ASP-2

- The property will be restored to approximate original grade using on-site soils from areas known to be acceptable for re-use (i.e., containing acceptable levels of metals and/or pesticides).
- All encountered tanks will be properly registered with the NYSDEC.
- Upon receipt of all data, a Tank Closure Site Assessment will be prepared for each individual tank area.
- Laboratory results which indicate a reportable release has occurred, or sufficient field evidence of a reportable spill, will be reported to the NYSDEC.

2.2.2 AST Removal

All aboveground storage tanks (ASTs) will be removed in accordance with the procedure outlined below. Three, empty, manifolded ASTs are present west of the maintenance garage in the southern portion of the Site. The northernmost tank is partially buried.

- Each tank will be visually inspected. Encountered liquid will be identified (e.g., gasoline, fuel oil, etc.) and will be removed from the tank by a licensed liquid waste transporter/disposal firm. Proper manifests will be prepared and signed by the OSC as representative of the owner. Documentation will be provided to the owner in the Tank Closure Site Assessment.
- A photographic record will be made of each tank and the condition of each tank will be recorded in field notebooks.
- Each tank will be cleaned of residual product and removed from the Site for off-site destruction. Documentation of tank destruction will be secured by the OSC and provided to the owner in the Tank Closure Site Assessment.
- Underlying and soils will be visually inspected and screened with the PID. In the event that no field evidence of contamination is identified, one confirmatory sample will be collected from underlying soils for laboratory analysis.
- Should contaminated soils be discovered:
  - Soils will be excavated and stockpiled on 6-mil plastic until all such soils have been removed (in the opinion of the OSC) or until further excavation is not possible. Any stockpiled soils will be both underlain and overlain with plastic.
  - At the conclusion of excavation activities, the walls of the excavation will be sampled at a rate of one sample per 20 feet of exposed wall (minimum of one sample per wall) and one sample per 250 square feet of floor.
  - Stockpiled soils will be sampled as per the requirements of the proposed repository. Disposition of soils will be in accordance with applicable NYSDEC regulations (e.g., Part 360).
- All samples will be analyzed as follows:

For gasoline tanks:	VOCs using Method ASP-1
	Total Weight Lead
For fuel oil or diesel tanks:	VOCs using Method ASP-1
	SVOCs (PAHs only) using Method ASP-2

- All encountered tanks will be properly registered with the NYSDEC.
- Upon receipt of all data, a Tank Closure Site Assessment will be prepared for each individual tank area
- Laboratory results which indicate a reportable release has occurred, or sufficient field evidence of a reportable spill, will reported to the NYSDEC.

2.2.3 Drum Removal

Drums will be removed by a licensed hauler subsequent to material identification and/or classification. The licensed contractor will conduct tests necessary to classify stored material and will secure all disposal documentation (including USEPA notification and generator numbers) and will prepare all manifests as agent for the owner. Manifests will be signed by the OSC as agent for the owner.

A photographic record of drum removal activities will be maintained and will be provided to the OSC by the drum removal firm as part of a final report. The final report, summarizing all drum disposition activities, will be prepared by the drum removal firm.

2.3 Field Investigative Services

The tasks detailed below will be performed by the Municipality's Consultant and designated subcontractors to achieve the project objectives listed in Section 1.1 of this Workplan.

2.3.1 Determination of Background Levels

Background levels of arsenic and pesticides will be determined through sample collection and analysis. Eight (8) background soil samples will be collected from four locations. At each location, a surface sample (upper 4" of soil) and a sample from the 20-24" depth will be collected. Each sample will be analyzed for arsenic and lead.

2.3.2 Surface Soil Sampling: Former Orchard

An additional twenty (20) soil samples will be collected from ten (10) locations within the former orchard area, to be located in the vicinity of previously collected samples that documented elevated arsenic (see Proposed Field Work Map).

Soil samples collected during field work conducted by the OSC will be obtained in a manner consistent with NYSDEC sample collection protocols. Soil samples will be collected from the upper 4" of soil and from the 20-24" depth where sufficient sampling material is present. Field conditions may warrant the relocation of samples; that is, the absence of measurable recovery in the sampling spoon will warrant sample relocation. Dedicated acetate sleeves and dedicated gloves will be used at each sample location to place the material into jars pre-cleaned at the

laboratory. Prior to and after the collection of each material sample, any reusable sample collection instrument will be decontaminated to avoid cross-contamination between samples. Decontamination procedures will be consistent with established USEPA and NYSDEC protocols.

2.3.3 Surface Soil Sampling: Former Wastewater Lagoon

Sixteen soil samples from eight locations will be collected from soils in the former lagoon area (see Proposed Field Work Map). Consistent with procedures outlined above, samples will be collected from the 0-4" and 20-24" depth and analyzed for total weight arsenic and lead.

2.3.4 Sediment Sampling: Wetland Areas

Six (6) soil samples will be collected at six locations within the wetland areas (see Proposed Field Work Map). Consistent with procedures outlined above, samples will be collected from the 0-4" depth and analyzed for pesticides (USEPA Method 8082) and total weight arsenic.

2.3.5 Test Pit Excavation

Debris areas are present in the eastern portion of the Site, in the vicinity of the on-site structures, and these areas appear to extend into the subsurface. The approximate locations of the debris are show in the Proposed Field Map, included in Attachment A.

Test pits will be extended using a standard rubber-tired backhoe with an extension of at least eleven feet. Test pits will be extended to a depth necessary to encounter underlaying clean soils, or the maximum extent of the backhoe. Material encountered will be characterized and suspect material will be isolated. Encountered debris will be screened using a photo-ionization detector (PID). Field observations will be recorded in test pit log, to be included in the final report.

Samples of intermixed and/or underlaying soils will be sampled and analyzed for VOCs (ASP-1), SVOCs (ASP-2, PAHs only), RCRA metals, and chlorinated pesticides.

2.3.6 Floor Drain Investigation

All interior floor drains will be identified and the direction of connected pipes will be determined, to the extent feasible. Using dye-testing, an attempt will be made to locate the terminus of these drains (it is suspected that drains are connected to the former wastewater treatment system). Drain outfalls other than the former wastewater lagoon (samples to be collected as specified in Section 2.3.3, above) will be sampled for chlorinated pesticides and RCRA metals.

2.3.7 Groundwater Monitoring

This Workplan proposes that four soil boreholes be completed as temporary groundwater monitoring wells. The locations for well placement are depicted on the Proposed Field Work Map, provided in Attachment A. In addition, should any evidence of leaking USTs be encountered during tank removal activities, groundwater monitoring wells will be installed downgradient of each tank in question.

Installation of Proposed Monitoring Wells

- Each well will be constructed of one-inch PVC casing and 0.01-inch slotted PVC well screening across the water table. No glue will be used to thread the casing lengths. A locked riser cap with vent will be installed at the top of the PVC riser. Wells will extend above grade.
- Wells will be constructed such that a minimum of 1.0 foot of screening will extend above the water table and approximately 9.0 feet of screening will extend below the water level.
- The annular space between well screen and the borehole will be backfilled with clean/ #1 silica sand to a depth of one to two feet above the well screen. A one-foot thick bentonite seal will be poured down the borehole above the sand pack and allowed to hydrate before grouting the remaining annular space with cement.

Groundwater Monitoring Well Development

Subsequent to installation, each well will be developed with a properly decontaminated mechanical pump and dedicated polyethylene tubing in order to clear fine-grained material that may have settled around the well screen and to enhance the natural hydraulic connection between the well screen and the surrounding soils. Prior to development, each monitoring well casing will be opened and the well column immediately screened with a PID to document the presence of any volatile organic vapors. Water removed from each monitoring well will be visually inspected for indications of petroleum contamination. Well water removed in the course of development will be containerized, as necessary.

Well development will begin at the top of the saturated portion of the screening to prevent clogging of the pump within the casing. The pump will be raised and lowered one to two feet within various portions of the screened interval to force water back and forth through the screen. Repeated surging and pumping at intervals of less than five feet will be performed to the bottom of the screen until the discharged water appears clear. Upon completion, the pump assembly will be removed while the pump is still running to avoid discharge of purged water back into the well. The well will be considered developed when turbidity is determined to be less than 50 Ntus.

Groundwater Monitoring Well Sampling

Provided below is a description of the proposed sampling protocol.

1. Basic climatological data (e.g., temperature, precipitation, conductivity, etc.) will be recorded in the field logbook.
2. The protective casing on the well will be unlocked.
3. The air in the well head will be screened for organic vapors using the PID.
4. The well's static water level will be measured to the nearest 0.01 foot with a decontaminated Solinst water level meter, and the measurement will be recorded in the logbook. The measurement will be made relative to the top of the PVC casing.
5. From the well diameter, total well depth, and the measured depth of the standing water, the volume of standing water in the well will be calculated to determine the amount of water to be purged from the well prior to sampling. This volume will be recorded in the logbook.
6. The well will be purged a minimum of three well volumes by hand, using properly sized bailers. The purged volumes will be calculated by discharging the well water into a container of known volume. Purged water will be collected in on-site storage containers and disposed of in accordance with applicable regulations, based on analytical data of the groundwater samples taken from the respective wells. The time at the beginning and the end of purging will be recorded in the logbook. All observations, including turbidity, odor, presence of a sheen, etc., will also be recorded in the field logbook.
7. Groundwater samples will be collected from the well using a dedicated, disposal bailer in accordance with procedures outlined according to NYSDEC protocol. During sample collection, the bailer will not touch the ground or any object except for the well casing).
8. Each groundwater sample will be placed in a one liter, amber jar for analysis for both RCRA metals and chlorinated pesticides.
9. All samples will be stored on ice and the sample information recorded in the field logbook, as well as on the laboratory's Chain of Custody forms.
10. The protective cap on the well will be replaced and locked. The field sampling crew will move to the next most contaminated well and the process will be repeated.

After sample collection the containers will be placed in a cool (4°C) dry place prior to their transport via overnight delivery to a New York State Department of Health-approved laboratory. All samples will be accompanied by proper chain of custody documentation.

Groundwater Sample Analysis

Samples obtained from the on-site groundwater monitoring wells and from off-site potable supply wells will be submitted for laboratory analysis chlorinated pesticides using NYSDEC Method ASP-95-3. In addition, samples will be analyzed for RCRA metals.

Groundwater Flow Calculations

After the installation of monitoring wells is completed, well elevations will be surveyed relative to a identifiable benchmark allowing for relative groundwater elevation determinations. The direction of groundwater flow will be determined based on elevations of static groundwater, measured prior to water quality sample collection. Measurements will be collected with an electronic depth meter with an accuracy of measuring depth to the nearest 0.01 foot. Data will be recorded in field logs for use in generating a Direction of Groundwater Flow Map in the final project Report (see Section 2.3, below).

2.4 Site Investigation Report

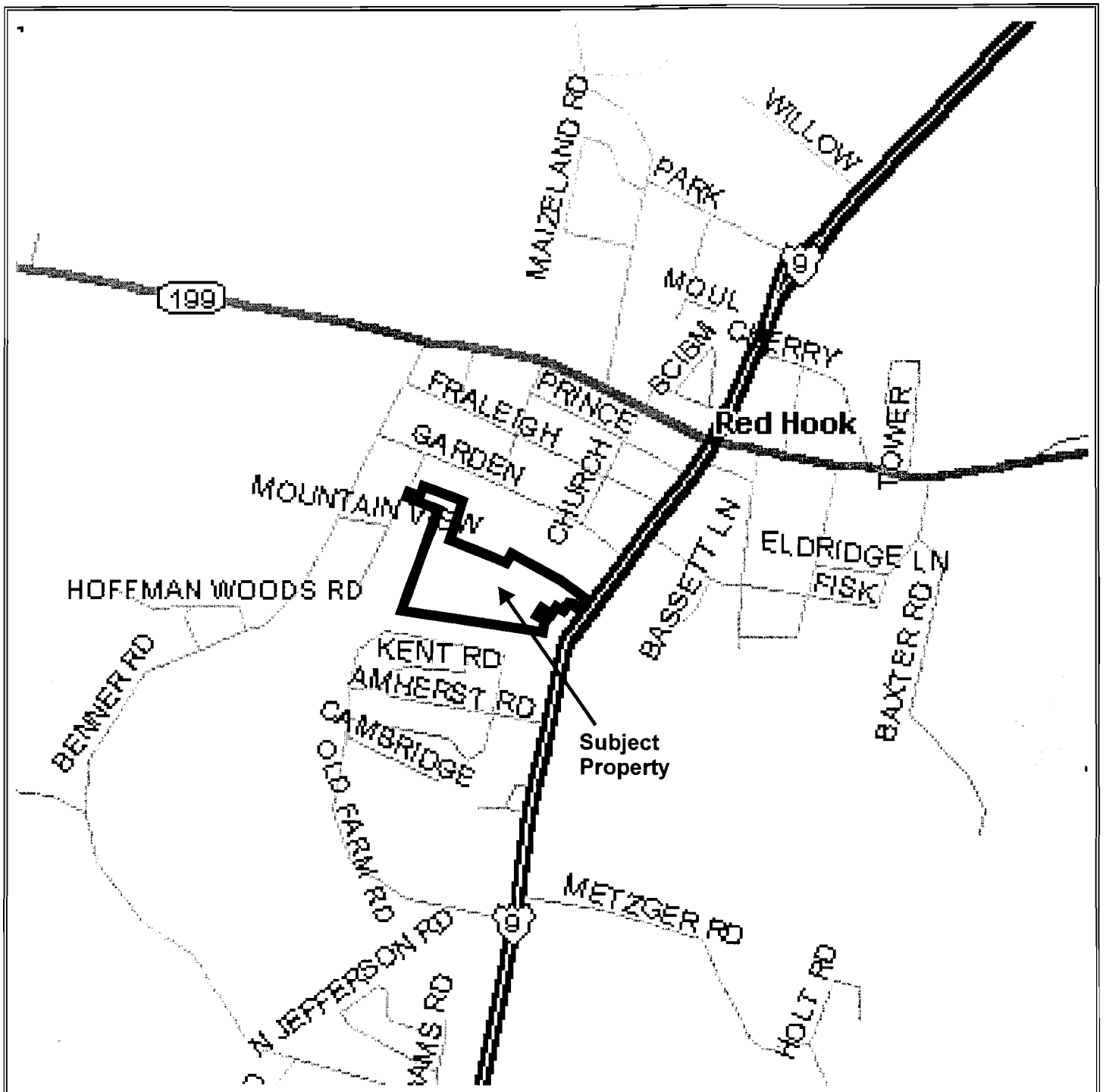
Upon completion of all Site investigation services, a Site Investigation Report (SI Report") summarizing all services performed on the subject property will be prepared. This SI Report will include the following:

- documentation of field activities, including relevant supporting documents (e.g., soil boring logs);
- all laboratory reports and associated deliverables generated as a result of the investigation;
- a DUSR prepared by an independent, third party;
- summary of laboratory analytical data, including a comparison of data to appropriate NYSDEC guidance documents;
- maps and drawings of sufficient specificity to provide a working description of Site conditions;
- copies of all tank registrations and spill reports (if any) generated as a result of the investigation;
- an assessment of documented contaminants present on the Site, including an assessment of likely off-site impacts associated with known on-site conditions; and
- if appropriate, an analysis of potential remedial options and cost estimates will be provided for each identified environmental condition based on documented Site conditions.

Upon completion, the SI Report will be submitted to the NYSDEC for review and comment.s

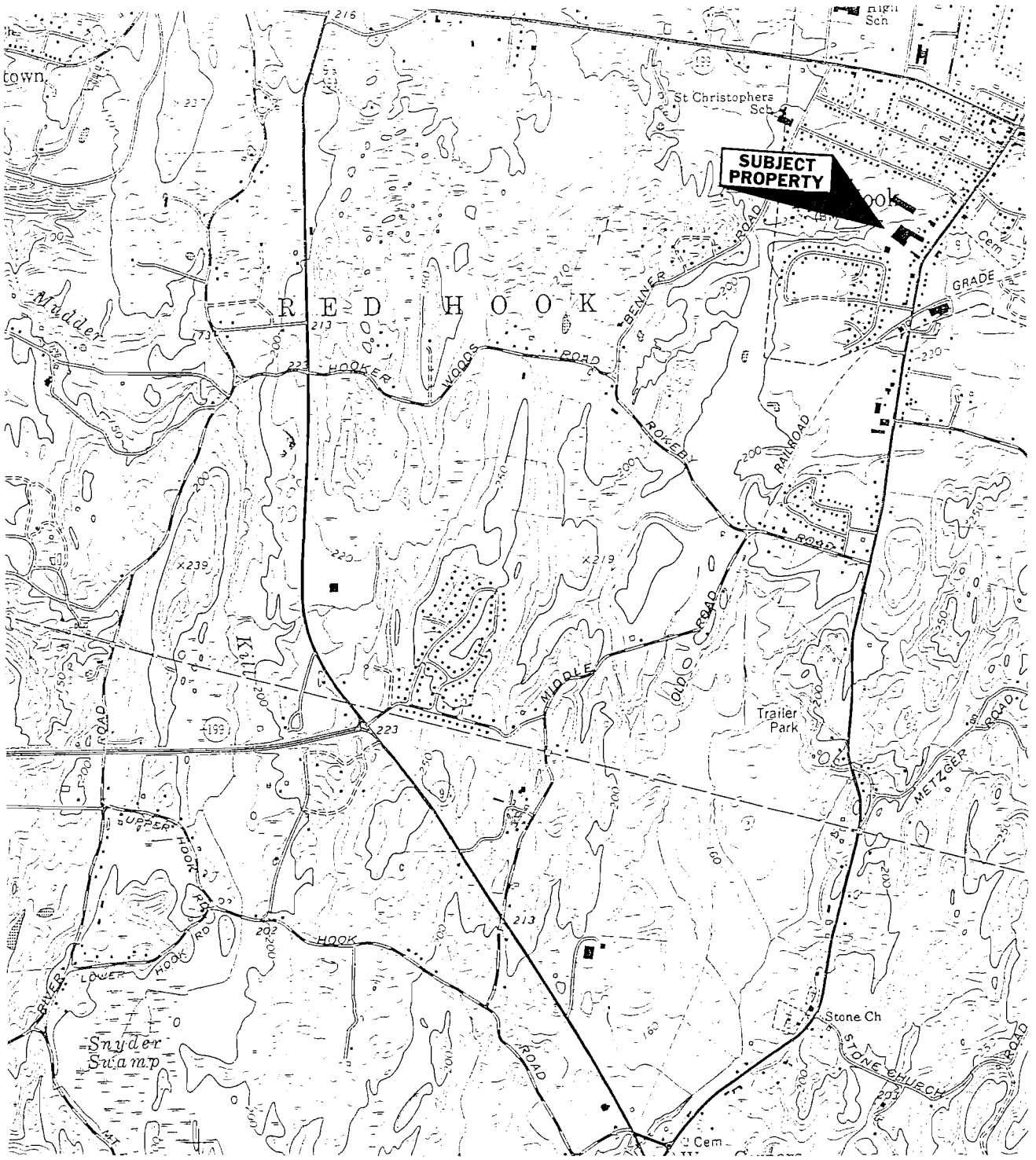
ATTACHMENT A

Maps



Source: DeLorme Street Atlas USA, Version 6.0

Site Location Map Perx Property 68 South Broadway, Village of Red Hook Dutchess County, New York	N	ESI File: DR99140.40 Date: September 2002 Attachment A



Source: U.S. Department of the Interior Geological Survey Topographic Map of the Kingston East, NY Quadrangle, dated 1963 (photorevised 1980)

U.S.G.S. Topographic Map Perx Property 68 South Broadway, Village of Red Hook Dutchess County, New York	N	ESI File: DR99140.40 Date: September 2002 Scale: 1:24000

Proposed Field Work Map

Perx Property
68 South Broadway
Village of Red Hook
Dutchess County, New York

ESI Job Number: DR99140.40	September 2002
Scale as shown	

Sampling Notes:

Proposed sampling locations are distinguished as follows:

- *BG* = background sample location (2 samples at each location, 1 sample at 0-4", and 1 sample at 20-24")
- *OR* = orchard sample location (2 samples at each location, 1 sample at 0-4", and 1 sample at 20-24")
- *LA* = lagoon sample location (2 samples at each location, 1 sample at 0-4", and 1 sample at 20-24")
- *WL* = wetland sample location (1 sample at each location, at 0-4")

Samples to be taken from UST graves are not included on this map.

LEGEND

- subject property border
- vent pipe or fill port (V, F)
- proposed sample location (see notes at left)
- proposed monitoring well location
- building
- existing water supply well (W-3)
- pump house (PH)
- stream (may also indicate direction of flow)

Ecosystems Strategies, Inc.

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50 0 250

SCALE IN FEET (APPROXIMATELY)

SMITH STREET

SOUTH BROADWAY

BG

WL

OR

LA

W-1

W-2

W-3

PH

wet area

unimproved road

residential

wooded

grassy

paved

overgrowth

wastewater treatment buildings

fuel oil UST

wastewater treatment shed

skimmer shed

gasoline pump

wastewater treatment lagoon

Scaffolding Company and Universal Builders Supply

settling tank

aeration tank

retaining wall

abandoned filter bed

trees

three, manifolded 275-gallon ASTs, empty (northern most is partially buried)

one story, maintenance garage

unmaintained lawn

main warehouse

house/ office

liquor store

Whitehorse Liquors

Don's Tackle

All feature locations are approximate.
Map based in part on Aerial Photographs and Village of Red Hook Tax Map

ATTACHMENT B

Health and Safety Plan

HEALTH AND SAFETY PLAN

PREPARED FOR THE

Perx Property
68 South Broadway
Village of Red Hood
Dutchess County, New York

September 2002

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TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Purpose

This Health and Safety Plan ("HASP") has been developed to provide the requirements and general procedures to be followed by Ecosystems Strategies, Inc. ("ESI") and designated subcontractors while performing site remediation at the Perx Property located at 68 South Broadway, Village of Red Hook, Dutchess County, New York. Site Location and Proposed Field Work Maps are attached to this HASP.

This HASP describes the responsibilities, training requirements, protective equipment, and standard operating procedures to be utilized by all personnel while on the Site. This HASP incorporates by reference the applicable Occupational Safety and Health Administration (OSHA) requirements in 29 CFR 1910 and 29 CFR 1926.

The requirements and guidelines in this HASP are based on a review of available information and evaluation of potential on-site hazards. This HASP will be discussed with Site personnel and will be available on-site for review while work is underway. On-site personnel will report to the Site Safety and Health Officer ("SSHO") in matters of health and safety. The on-site project supervisor(s) are responsible for enforcement and implementation of this HASP.

This HASP is specifically intended for the conduct of activities within the defined scope of work in specified areas of the Site. Changes in site conditions and future actions that may be conducted at this site may necessitate the modification of the requirements of the HASP. Although this HASP can be made available to interested persons for informational purposes, ESI has no responsibility over the interpretations or activities of any other persons or entities other than employees of ESI and designated subcontractors to ESI.

1.2 Site Location and Description

The Site is defined as the approximately 20-acre property and structures located at 68 South Broadway, Village of Red Hook, Dutchess County, New York, (see Site Location Map.) The Site is an irregular-shaped parcel with 104 feet of frontage on the western side of South Broadway and 50 feet of frontage on the eastern side of Smith Street. The entire site is bounded by chain-link fence. Ten structures are located on the eastern half of the property. Areas not occupied by buildings are covered with asphalt on the majority of the eastern half of the site. The western half contains undeveloped land consisting of overgrown grassy areas, wetlands, and woodland. There are also the remains of a septic treatment facility located both centrally and on the northeastern portion of the site. An attached Field Work Map illustrates the configuration of the Site as well as the areas of proposed remedial activities (see Section 1.3).

1.3 Work Activities

Environmental investigation activities are detailed in the Workplan for Site Investigation and Interim Remedial Activities ("Workplan") dated August 2002. The specific tasks detailed in the Workplan are wholly incorporated by reference into this HASP. The tasks described in the Workplan are proposed to address known and possible environmental conditions at the Site which include: metal and pesticide contamination in soils, sediments and groundwater; on-site underground and aboveground storage tanks (USTs and ASTs) which are unregistered and whose integrity is unknown; drums in on-site buildings with unknown contents; and interior floor drains with unknown discharge points.

The following field tasks will be performed:

- removal of the underground and aboveground storage tanks;
- removal of drums;
- collection of soil, groundwater and sediment samples throughout the site; and
- installation of four (4) or more groundwater monitoring wells.

2.0 HEALTH AND SAFETY HAZARDS

The potential exists for the presence of elevated levels of petroleum hydrocarbons, arsenic and metal-based pesticides in on-site media. During site remedial and investigative work, the possibility exists for personal contact with contaminated soils, water, dust and vapors. The compounds may be released at levels which may present a skin contact hazard and an inhalation or ingestion hazard.

Working in the vicinity of heavy equipment is the primary safety hazard at the Site. Physical hazards in working near heavy construction equipment include the following: overhead hazards, slips/trip/falls, hand and foot injuries, moving part hazards, improper lifting/back injuries, and noise. All workers will be properly trained in accordance with OSHA requirements (29 CFR 1910). No workers will be permitted within tank graves without proper personal protective equipment (PPE), including, as warranted, respirators, Tyvek suits and/or gloves. Air monitoring for VOCs will be conducted in accordance with the HASP.

3.0 PERSONAL PROTECTIVE EQUIPMENT

The levels of protection identified for the services specified in the Workplan represent a best estimate of exposure potential and protective equipment needed for that exposure. Determination of levels was based on data provided by previous studies of the Site and information reviewed on current and past Site usage. The SSHO may recommend revisions to these levels based on an assessment of actual exposures.

The level of protective clothing and equipment selected for this project is Level D. Workers will wear Level D protective clothing including, but not limited to, a hard hat, steel-toed boots, latex gloves (when handling soils and/or groundwater), and safety goggles (when decontaminating equipment). Personal protective equipment (PPE) will be worn at all times, as designated by this HASP.

The need for an upgrade in PPE will be determined based upon measurements taken in the breathing zone of the work area using a photo-ionization detector (PID) and a dust monitor. As outlined in Section 5.0, below, an upgrade to a higher level of protection will begin when PID readings and/or dust levels above specified limits are measured.

If any equipment fails and/or any employee experiences a failure or other alteration of their protective equipment that may affect its protective ability, that person will immediately leave the work area. The Project Manager and the SSHO will be notified and, after reviewing the situation, determine the effect of the failure on the continuation of on-going operations. If the failure affects the safety of personnel, the work site, or the surrounding environment, personnel will be evacuated until appropriate corrective actions have been taken.

4.0 CONTAMINANT CONTROL

Precautions will be taken during dry weather (e.g., wetting or covering exposed soils) to avoid breathing dust-generated from soils. A PID and a P-5 Digital Dust Indicator or equivalent equipment will be used to monitor potential contaminant levels. Response to the monitoring will be in accordance with the action levels provided in Section 5.0.

With regard to physical hazards, all personnel will maintain a safe distance from construction equipment in order to not interfere with their operation. Those personnel not involved directly with observation and supervision of site remediation activities involving heavy equipment will stand at a safe distance from all such equipment. All personnel will be familiar with the location and operation of the kill switch on utilized equipment. Precautions will be taken in lifting any heavy equipment. Additionally, hearing protection will be utilized during any operations generating excessive noise levels.

5.0 MONITORING AND ACTION LEVELS

Concentrations of petroleum hydrocarbons and metals in the air are expected to be below the OSHA PELs. A Community Air Monitoring Plan will be implemented for all field work. A copy of the Community Air Monitoring Plan is attached.. Air monitoring will be conducted for VOCs, SVOCs, and particulates. Monitoring will be conducted at all times that construction activities which are likely to generate emissions are occurring. PID readings in excess of 5 ppm, and dust levels in excess of 150 ug/m^3 will be used as an indication of the need to initiate personnel monitoring and/or increase worker protective measures.

PID and/or dust readings that exceed background in the breathing zone (during any of the proposed tasks) will necessitate moving away from the source or implementing a higher PPE level.

6.0 SITE ACCESS AND CONTROL

Site control procedures will be established to reduce the possibility of worker contact with compounds present in the soil, to protect the public in the area surrounding the Site and to limit access to the Site to

only those persons required to be in the work zone. Measures (e.g., placement of traffic cones and warning tape) will be taken to limit the entry of unauthorized personnel into the specific areas of field activity.

7.0 PERSONNEL TRAINING

Work zones that will accomplish the general objective stated above will be established by the Project Manager and the SSHO. Site access will be monitored by the SSHO, who will maintain a log-in sheet for personnel that will include, at the minimum, personnel on the Site, their arrival and departure times, and their destination on the Site. All workers will be properly trained in accordance with OSHA requirements (29 CFR 1910). Personnel exiting the work zone(s) will be decontaminated prior to exit. The SSHO will establish a decontamination system and decontamination procedures appropriate to the Site and the work that will prevent potentially hazardous materials from leaving the Site (see Section 8.0).

Site-specific training will be provided to each employee. Personnel will be briefed by the SSHO as to the potential hazards to be encountered. Topics will include:

- Availability of this HASP;
- General site hazards and specific hazards in the work areas, including those attributable to the chemicals present;
- Selection, use, testing, and care of the body, eye, hand, and foot protection being worn, with the limitations of each;
- Decontamination procedures for personnel, their personal protective equipment, and other equipment used on the Site;
- Emergency response procedures and requirements;
- Emergency alarm systems and other forms of notification, and evacuation routes to be followed; and
- Methods to obtain emergency assistance and medical attention.

8.0 DECONTAMINATION

Trucks will be brushed to remove materials adhering to the surfaces. Sampling equipment will be segregated and, after decontamination, stored separately from splash protection equipment. Decontaminated or clean sampling equipment not in use will be covered with plastic and stored in a designated storage area in the work zone.

9.0 EMERGENCY RESPONSE

9.1 Notification of Site Emergencies

In the event of an emergency, the SSHO will be immediately notified of the nature and extent of the emergency.

Table 1 in this HASP contains Emergency Response Telephone Numbers, and immediately

following is a map detailing the directions to the nearest hospital. This information will be maintained at the work Site by the SSHO. The location of the nearest telephone will be determined prior to the initiation of on-site activities. In addition to any permanent phone lines, a cellular phone will be available for use on-site.

9.2 Responsibilities

The SSHO who is responsible for responding to emergencies and prior to the initiation of on-site work activities will:

1. Notify individuals, authorities, and/or health care facilities of the potentially hazardous activities and potential wastes that may develop as a result of the investigation;
2. Confirm that the following safety equipment is available: first aid supplies and a fire extinguisher;
3. Have a working knowledge of safety equipment available; and
4. Confirm that a map detailing the most direct route to the hospital is prominently posted with the emergency telephone numbers.

The SSHO will be responsible for directing notification, response, and follow-up actions and for contacting outside response personnel (ambulance, fire department, or others). In the case of an evacuation, the SSHO will account for personnel. A log of individuals entering and leaving the Site will be kept so that everyone can be accounted for in an emergency.

Upon notification of an exposure incident, the SSHO will contact the appropriate emergency response personnel for recommended medical diagnosis and, if necessary, treatment. The SSHO will determine whether and at what levels exposure actually occurred, the cause of such exposure, and the means to prevent similar incidents from occurring.

9.3 Accidents and Injuries

In the event of an accident or injury, measures will be taken to assist those who have been injured or exposed and to protect others from hazards. If an individual is transported to a hospital or doctor, a copy of the HASP will accompany the individual.

The SSHO will be notified and will respond according to the severity of the incident. The SSHO will perform an investigation of the incident and prepare a signed and dated report documenting the investigation. An exposure-incident report will also be completed by the SSHO and the exposed individual. The form will be filed with the employee's medical and safety records to serve as documentation of the incident and the actions taken.

9.4 Communication

No special hand signals will be utilized within the work zone. Field personnel will utilize standard hand signals during the operation of heavy equipment.

9.5 Safe Refuge

Vehicles and on-site structures will serve as the immediate place of refuge in the event of an emergency. If evacuation from the area is necessary, project vehicles will be used to transport on-site personnel to safety.

9.6 Site Security and Control

Site security and control during emergencies, accidents, and incidents will be monitored by the SSHO. The SSHO is responsible for limiting access to the Site to authorized personnel and for oversight of reaction activities.

9.7 Emergency Evacuation

In case of an emergency, personnel will evacuate to the safe refuge identified by the SSHO, both for their personal safety and to prevent the hampering of response/rescue efforts. The main entrance to the subject property is at South Broadway (a.k.a. U.S. Route 9).

9.8 Resuming Work

A determination that it is safe to return to work will be made by the SSHO and/or any personnel assisting in the emergency, e.g., fire department, police department, utility company, etc. No personnel will be allowed to return to the work areas until a full determination has been made by the above-identified personnel that all field activities can continue unobstructed. Such a determination will depend upon the nature of the emergency (e.g., downed power lines -- removal of all lines from the property; fire -- extinguished fire; injury -- safe transport of the injured party to a medical facility with either assurance of acceptable medical care present or completion of medical care; etc.).

Before on-site work is resumed following an emergency, necessary emergency equipment will be recharged, refilled, or replaced. Government agencies will be notified as appropriate. An Incident Report Form will be filed.

9.9 Fire Fighting Procedures

A fire extinguisher will be available in the work zone during on-site activities. This extinguisher is intended for small fires. When a fire cannot be controlled with the extinguisher, the area will be evacuated immediately. The SSHO will be responsible for directing notification, response, and follow-up actions and for contacting ambulance and fire department personnel.

9.10 Emergency Decontamination Procedure

The extent of emergency decontamination depends on the severity of the injury or illness and the nature of the contamination. Whenever possible, minimum decontamination will consist of washing, rinsing, and/or removal of contaminated outer clothing and equipment. If time does not permit decontamination, the person will be given first aid treatment and then wrapped in plastic or a blanket prior to transport to medical care.

9.11 Emergency Equipment

The following on-site equipment for safety and emergency response will be maintained in the on-site vehicle of the SSHO:

1. fire extinguisher;
2. first aid kit; and
3. extra copy of this Health and Safety Plan.

10.0 SPECIAL PRECAUTIONS AND PROCEDURES

The activities associated with this investigation may involve potential risks of exposure to both chemical and physical hazards. The potential for chemical exposure to hazardous or regulated substances will be significantly reduced through the use of monitoring, personal protective clothing, engineering controls, and implementation of safe work practices.

10.1 Heat/Cold Stress

Training in prevention of heat/cold stress will be provided as part of the site-specific training. The timing of this project is such that heat/cold stress may pose a threat to the health and safety of personnel. Work/rest regimens will be employed, as necessary, so that personnel do not suffer adverse effects from heat/cold stress. Special clothing and appropriate diet and fluid intake regimens will be recommended to personnel to further reduce this temperature-related hazard. Rest periods will be recommended in the event of high/low temperatures and/or humidity to counter the negative effects of heat/cold stress.

10.2 Heavy Equipment

Precautions will be taken when standing near or working adjacent to any heavy equipment.

10.3 Additional Safety Practices

The following are important safety precautions which will be enforced during this investigation:

1. Medicine and alcohol can aggravate the effect of exposure to certain compounds. Controlled substances and alcoholic beverages will not be consumed during investigation activities. Consumption of prescribed drugs will only be at the discretion of a physician familiar with the person's work.

2. Eating, drinking, chewing gum or tobacco, smoking, or other practices that increase the probability of hand-to-mouth transfer and ingestion of material is prohibited except in areas designated by the SSHO.
3. Contact with potentially contaminated surfaces will be avoided whenever possible. Workers will not unnecessarily walk through puddles, mud, or other discolored surfaces; kneel on the ground; or lean, sit, or place equipment on drums, containers, vehicles, or the ground.
4. Personnel and equipment in the work areas will be minimized, consistent with effective site operations.
5. Unsafe equipment left unattended will be identified by a "DANGER, DO NOT OPERATE" tag.
6. Work areas for various operational activities will be established.

10.4 Daily Log Contents

The SSHO will establish a system appropriate to the Site, the work, and the work zones that will record, at a minimum, the following information:

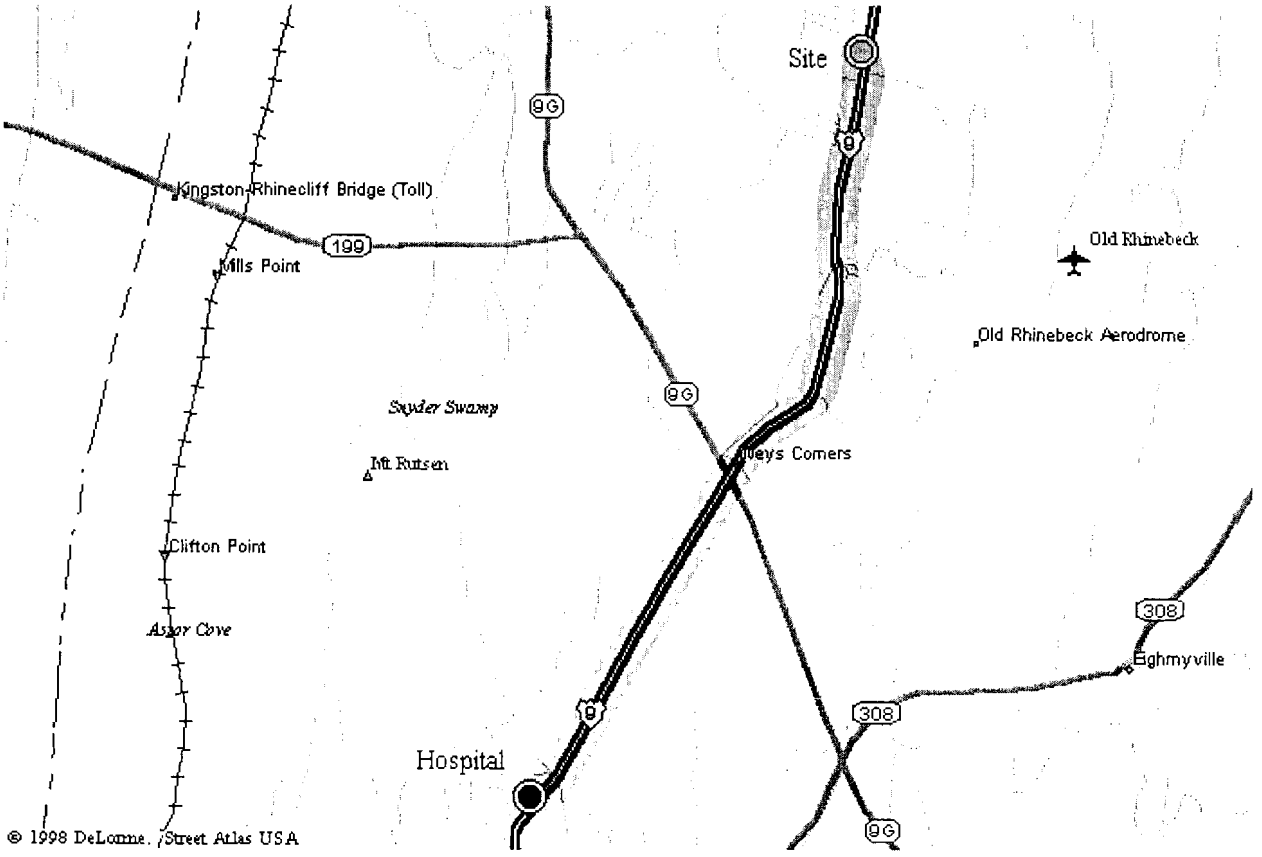
1. Personnel on the Site, their arrival and departure times, and their destination on the Site.
2. Incidents and unusual activities that occur on the Site such as, but not limited to, accidents, spills, breaches of security, injuries, equipment failures, and weather-related problems.
3. Changes to the HASP.
4. Daily information generated such as: changes to work and health and safety plans; work accomplished and the current Site status; and monitoring results.

11.0 TABLES AND FIGURES

Table 1: Emergency Response Telephone Numbers

Emergency Agencies **EMERGENCY**	Phone Numbers **911**
Northern Dutchess Hospital 6511 Springbrook Avenue, Rhinebeck	**(845) 876-3440 - Emergency Room** **(845) 876-3001** - Main Information
Red Hook Sheriff	**(845) 758-6300** or 911
Red Hook Fire Department	**(845) 758-2171** or 911
Village Hall	**(845) 758-1081**
Mayor	**(845) 758-1081**
Water and Sewer	**(845) 758-4608**

Figure 1: Directions to Hospital / Map



Directions: Right (south) on South Broadway (U.S. Route 9), travel approximately 4.4 miles south, turn right (west) into Northern Dutchess Hospital grounds.

COMMUNITY AIR MONITORING PLAN

COMMUNITY AIR MONITORING PLAN (CAMP)

Real-time air monitoring for volatile compounds and particulate levels is necessary. The plan includes the following:

Continuous monitoring for all ground intrusive activities, including, but not limited to, tank excavation and handling, test pitting, and the installation of soil borings and monitoring wells.

Periodic monitoring for volatile organic compounds (VOCs) during non-intrusive activities, such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might, for example, reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. An example of such a situation is groundwater sampling in close proximity to a residence.

VOC Monitoring, Response Levels, and Actions

VOCs will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** basis. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The equipment will be calibrated before each day of field work, not more than 24 hours prior to the field work. The equipment will calculate 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level is below 5 ppm over background for the 15-minute average at a point either a) 200 feet downwind of the exclusion zone or b) half the distance to the nearest potential receptor or residential/commercial structure, whichever is less (but in no case less than 20 feet.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown.

All 15-minute readings will be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu g/m^3$) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 $\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 $\mu g/m^3$ above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work may resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.

All readings will be recorded and be available for State (DEC and DOH) personnel to review.