PRECISION
ENVIRONMENTAL SERVICES, INC.

2144 SARATOGA AVENUE
BALLSTON SPA, NY 12020
TEL: 518.885.4399
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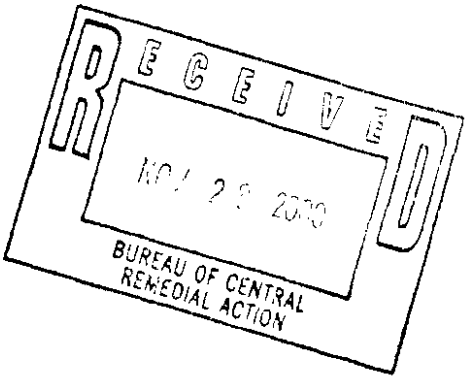
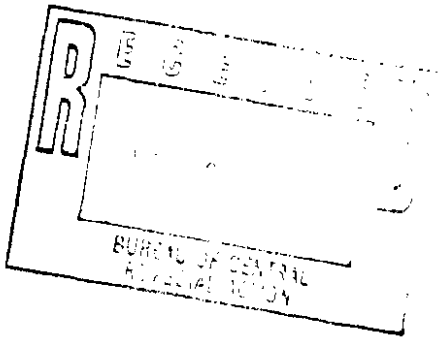


SITE INVESTIGATION/ REMEDIAL ALTERNATIVES ~~REPORT~~ (SI/RAR) PROPOSAL

Richard L. Hanson, Jr., Fire Training Center
Village of Yosts, Town of Mohawk,
Montgomery County, New York
NYS Spill # 96-06805 and 96-08496
Brownfields I.D. # B00138-4

Proposal Completed:
October 31, 2000



Prepared For:

Montgomery County
Park Street
Fonda, New York 12068
Attn.: Mr. Paul Clayburn, Deputy Commissioner

Prepared By:

PRECISION ENVIRONMENTAL SERVICES, INC.
2144 Saratoga Avenue
Ballston Spa, New York 12020
Eric S. Lewis

PRECISION
ENVIRONMENTAL SERVICES, INC.

2144 SARATOGA AVENUE
BALLSTON SPA, NY 12020
TEL: 518.885.4399
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October 31, 2000

Mr. Paul H. Clayburn
Deputy Commissioner
Montgomery County
Park Street
Fonda, New York 12068

RE: **Response to: Request For Site Investigation/**
Remedial Alternatives Report (SI/RAR) Work Plan
Richard L. Hanson, Jr., Fire Training Center
Village of Yosts, Town of Mohawk,
Montgomery County, New York
NYS Spill # 96-06805 and 96-08496
Brownfields I.D. # B00138-4 (Town of Mohawk, N.Y.)

Dear Mr. Clayburn:

Pursuant to your request, Precision Environmental Services, Inc. (PES) is pleased to submit the following workscope and associated cost estimate for assessment of environmental conditions at the aforementioned referenced facility. The proposed workscope is in keeping with site-specific requirements made by Mr. Ralph T. Keating, Environmental Engineer 2 of the New York State Department of Environmental Conservation (NYS DEC). See the initial Limited Subsurface Investigation Report of Findings for a site description and history.

PROPOSED INVESTIGATIVE WORKSCOPE:

PES proposes to initiate the investigative program using Geoprobe soil probing methodology coupled with the installation of monitoring wells (where appropriate). The supplemental limited subsurface investigation will involve the installation of twelve (12) to fifteen (15) - two-inch (2") diameter soil borings (SBs) and completion of each as a one-inch (1") diameter monitoring wells (MWs). Proposed monitoring well locations will be based on historic information and inferred ground water flow direction (where appropriate). The purpose of this supplemental investigation is to further define the horizontal and vertical extent of the documented contaminant plume both on and off-site. Proposed well locations are plotted on the enclosed site map. Obtained information will be used to establish a general ground water flow direction and establish ground water and soil quality for the site and adjacent properties. Soil samples will be collected and monitored for the presence of volatile organic contamination using a photoionization device (PID) on a continuous basis during installation of the MWs. In the event that alternative drilling methodology is required, a drilling contractor with the specific capability (drill rig) will be mobilized to the site.

Monitoring Well Construction:

Each well will be constructed of one inch (1") diameter PVC well screen and casing. An appropriately sized silica sand pack will surround the well screen, and a bentonite seal will be placed above the

sand pack. Native (uncontaminated) backfill and a cement grout will fill the remaining well annulus. In addition, each well will be finished with a limited access, watertight, surface mounted, traffic approved road box.

Monitoring Well Surveying/Gauging:

The top-of-casing elevation and/or location of each SB/MW will be surveyed by a licensed surveyor. The depth to ground water will be measured at each well to allow calculation of the ground water gradient. The ground water table will be characterized as to the presence or absence of free-floating hydrocarbons and the thickness of any free-floating hydrocarbons will be reported immediately to the NYS DEC.

Soil Sampling:

Soil samples will be collected from the most contaminated horizon or at the water table from all newly installed soil borings and analyzed by EPA Method 8021/8270 STARS *modified to include* Methyl-Tertiary-Butyl-Ether (MTBE). Soil samples will be collected by a PES geologist and placed in clean glass jars supplied by the analytical facility. All sampling devices (macro-cores and drilling tools) will be decontaminated before and between each soil boring. The results of the soil quality sampling will be reported in parts per billion (ppb).

Ground Water Sampling:

Ground water samples will be collected from all newly installed and ~~historic~~ monitoring wells using Teflon or disposable bailing equipment and analyzed using EPA Method 502.2 *modified to include* MTBE. Sampling and/or gauging order will be formulated based on the ~~information~~ obtained during the drilling process and historic knowledge of the site. Gauging and sampling will be performed from the least to the most contaminated well and disposable sampling equipment will be utilized to minimize the possibility of cross contamination. All monitoring devices (*interface probe and/or water level indicator*) will be decontaminated before, and between, each well. Transportation sample blanks will be included in the ground water sampling program. The results of the ground water quality sampling will be reported in parts per billion (ppb).

Reporting:

Upon receipt of the laboratory analyses of soil and ground water samples, a completion report will be prepared that combines newly acquired and historic information for submission to the NYS DEC. The report will include:

- Brief description of the regional geology, from appropriate literature, and local geology – inferred from the soil boring logs. Included in the description of the geology PES will discuss any natural or manmade barriers that may contain the contamination.
- A scaled site map illustrating major surface structures, soil boring, monitor well and domestic well locations within the area of study.
- Soil boring data and monitor well completion procedures.
- Field observations resulting from soil monitoring with the PID instrument, product thickness, etc, including QA/QC procedures will be discussed.
- Ground water flow direction, gradient and current/potential use will be discussed. A ground water gradient map for the site will be included.
- Hydrogeologic factors such as soil permeability, depth to saturated zone and proximity to a drinking water aquifer, flood plain or wetland will be discussed. In addition, surface water classifications and existing use designations will also be discussed.
- Hydrocarbon distribution will be discussed. Free-product and/or dissolved hydrocarbon maps will be included. In addition, sources, amounts, concentrations, persistence,

mobility, state (i.e. solid, liquid) and other characteristics of the contamination will be characterized.

- Potential environmental impact issues such as potential routes of exposure, populations and environmental receptors at risk, the properties contribution to air, land, water, biota, and/or food chain contamination and the extent to which contamination poses an unacceptable risk to public health and/or the environment.
- A brief conclusion section regarding ground water conditions on and off-site will be included, as supported by the data collected during the investigation.
- All data, well logs, ASP-95-1 category B deliverables laboratory analysis reports and laboratory data review associated with the ASP report will be included as appendices.
- A site-specific health and safety plan is provided with this SI/RAR work plan for review and will be made available during the fieldwork portion of this project.
- A citizen participation (CP) plan detailing the Town's compliance with the Division of Environmental Remediations CP program will be included with this SI/RAR work plan.

Project Organization:

Individual tasks of the proposed workscope will be performed as expediently as possible under the field conditions encountered. All aspects of the project will be coordinated and supervised by experienced representatives of PES. The project team assigned to this work scope is comprised of experienced personnel capable of completing the technical and logistical aspects of the assignment.

PROPOSED REMEDIAL ALTERNATIVES WORKSCOPE:

Based on the initial limited subsurface investigation performed in June of 1998, Precision Environmental Services, Inc. (PES) is pleased to submit the following conceptual workscopes to perform remedial measures (soil excavation/disposal vs. in-situ remediation) at the aforementioned site. The calculated volume of soil requiring removal/treatment was roughly estimated at 10,000 cubic yards (yds.^{3}). Please Note: a rough estimate is all that can be provided based on the limited data collection points in the targeted source area. The dimensions of the (majority of) affected soil are approximately 150 feet (north to south) by 300 feet (east to west). Rough calculation of the in-place volume of contaminated soil based on an average thickness of six feet is 10,000 yds.^{3}. See Figure 7 of the Limited Subsurface Investigation Report of Findings for a graphical presentation of the above referenced source area.

CONCEPTUAL PROPOSED WORKSCOPE
(CONTAMINATED SOIL REMOVAL AND THERMAL DESORPTION):

Pre-Excavation Soil Characterization/Disposal Approval:

The areas targeted for excavation exhibiting gasoline, #2 fuel oil and kerosene contamination are to the east and south of the main site structure. (see Figure 2). To facilitate direct excavation to truck loading PES proposes geoprobing to collect the required soil disposal characterization samples. Samples would be collected approximately two-three (2-3) weeks prior to the intended ground breaking activities. Results would be utilized along with site-specific profile information to obtain acceptance at the intended disposal facility Environmental Soil Management, Inc. (ESMI).

General Construction Activity:

Initial site preparation would involve the removal of non-contaminated overburden and surface cover materials (asphalt/concrete) if applicable. Segregation of such materials would occur to allow for re-application as fill material to the final excavation. This workstep will minimize the tonnage requiring disposal as well as the volume of replacement material needed to fill the final excavation. A PES

geologist/site supervisor will be present with a properly calibrated PID to direct all soil segregation activities. Site preparation is expected to take approximately one day.

Subsequent to the exposure of contaminated material requiring removal, PES will commence excavation utilizing cut and fill construction methods. A PES geologist/site supervisor will direct the soil excavation process using a calibrated PID and headspace methods. All collected data will be utilized to complete a summary report to be submitted to the NYS DEC. Photo documentation of all aspects of the implemented workscope will be performed which will include pre-, during, and post-excavation site conditions. Attempts will be made to systematically propagate the excavation activities to allow for coordinated removal and backfill activities. PES will perform all required barricading and construction fence installation to secure the site at the end of each working day. All on-site personnel with have appropriate OSHA training (40 hour Hazmat).

In general, excavated material will be staged adjacent to the excavation and/or directly loaded into Part 360 permitted trucks for delivery to the soil disposal facility. A front-end loader will be on hand to facilitate efficient truck loading. Based on geographic location and facility (ESMI) daily capacity, PES estimates the ability to remove and transport approximately 200-250 tons of material per workday.

Supplied backfill material will consist of clean sand and/or bank run gravel. Compaction of fill material will be accomplished utilizing on-site excavation equipment. Specific equipment for the purpose of compaction and/or testing of the final percent of compaction obtained are not considered part of the workscope. Excavation will proceed in the designated areas in an attempt to remove a substantial portion of the source material. Residual soil contamination is expected at some end of excavation areas. To characterize this, end of excavation soil samples will be collected and submitted for laboratory analysis.

Based on the suspected contaminant types, PES recommends analysis of soil samples for EPA Method 8021/8270 STARS plus MTBE. All samples would be collected by a PES geologist for submission under chain of custody protocol to a NYS DEC approved laboratory. Post excavation grab ground water samples may also be appropriate for EPA 502.2 and MTBE analysis from the open excavation.

Dewatering:

Dewatering during the contaminated soil excavation may be required due to shallow ground water beneath the site. Dewatering would occur via the placement of a slotted culvert well within the soil excavation and subsequent backfilling around the culvert pipe with crushed stone. Contaminated ground water will be evacuated from the culvert well utilizing a submersible pump. The contaminated water would be pumped into a settling tank for desiltation then repressurized via transfer pump to carbon units for carbon polish. The decontaminated water will then be sampled prior to discharge.

Reporting Documentation:

Subsequent to the excavation and associated backfill stages, collected field and analytical data would be compiled to produce a summary report for submission to the NYS DEC. The report would include a photographic documentation, chronology of site activities, details regarding the excavation process and resulting soil/ground water quality. All supporting laboratory/field data will be included as attachments to the summary report. Included in the report would be any recommendations for further assessment and/or remedial efforts.

CONCEPTUAL PROPOSED WORKSCOPE
(HIGH VACUUM/TOTAL FLUID EXTRACTION):

Contaminant Profile:

Based on the accumulated information, multiple sources for the observed contamination existed at the subject site. The sources include, but are not limited to the Underground Storage Tanks (USTs), product distribution piping and/or product dispensing equipment. Fugitive hydrocarbon contamination exists at the site: adsorbed to the geologic material (soil) developed in the subsurface (adsorbed phase), as hydrocarbon vapor in the pore spaces of the geologic material (vapor phase) and dissolved in the ground water (dissolved phase). To date, phase separated product has not been identified at the site.

Chemical characteristics depicted in the analytical reports confirm that the contaminating substances are gasoline, #2 fuel oil and kerosene. The release date and potential volume release to the subsurface is currently unknown. The lack of MTBE in the ground water test results indicates the spill is relatively old. MTBE, a gasoline additive used to boost octane and reduce air emissions, has been widely used for the past fifteen to twenty years.

Preliminary definition of the dissolved phase contaminant plume suggests the plume to be approximately 370 feet (east-west) by 270 feet (north-south). It should be noted that during the subsurface investigation most perimeter soil boring locations showed little to no soil contamination via PID field screening.

In order for high vacuum/total fluid extraction to effectively process the observed dissolved and adsorbed phase contamination (above and more importantly trapped below the encountered water table), the lithologic nature of the formations must be conducive to dewatering. The effectiveness of high vacuum/total fluid extraction technologies can be determined via the performance of a pilot test. Effective dewatering is required to allow the vacuum system to overcome the water extraction rate to allow for transition to the high vacuum vapor extraction mode. In addition, dewatering/water table depression is required to expose "trapped or submerged" adsorbed contamination to evaporation. Based on PES's review of the geologic nature of soil (interbedded clay) occurring in the phreatic zone developed beneath the site, air sparging may not be feasible as an augmentation to the high vacuum/total fluid extraction.

Provided favorable results are obtained, a detailed site-specific remedial system design will be completed. The design will take into account the number and placement of collection points for effective treatment at the site. The size and characteristics of the remediation equipment will be specified after reduction of pilot test data is completed. If pilot testing indicates the soil types are not conducive to the aforementioned remedial techniques, a comparison between cost effectiveness of in-situ remediation versus soil excavation will be provided.

A cost schedule for the above mentioned remedial alternatives can be provided subsequent to the supplemental subsurface investigation and/or pilot test.

COST ESTIMATES:

Additional Geoprobe investigation (approximately twelve to fifteen – 12' deep monitor wells) will be required to provide further definition of the contaminant plume both on and off-site. The supplemental investigation will include: geoprobe, operator, geologic supervision, mobilization, well materials and road boxes.

Estimated Cost: $4,420-4,725

Site Surveying to include: licensed surveyor, survey equipment, mobilization and base map drafting of all on-site structures, off-site structures within the contaminant plume, monitor well elevations and locations. (To be provided by Montgomery County).

Estimated Cost: $600

Ground Water Monitoring to include: mobilization, two (2) technician, water level indicator, sampling equipment to sample up to twenty-eight (28) monitor wells and delivery to the laboratory.

Estimated Cost: $1,570

Originally proposed analytical methodology was consistent with protocols typically utilized on sites possessing petroleum-based contaminants (i.e. NYS DEC STARS Memo No. 1 – protocol). Under the direction of the NYS DEC, ASP-95-1 category B deliverables protocol is to be utilized. This protocol will require additional laboratory testing and reporting in conjunction with data validation review. Specifically, analysis of 28-31 volatile/semi-volatile water samples and 5-8 volatile/semi-volatile soil samples with matrix spike, matrix spike duplicate, field duplicate, field and transport blank samples.

Estimated Cost: $29,100-32,700

Collection and submission of two (2) surface water and sediment samples from the pond developed along the sites northern limits. Samples will be analyzed for petroleum-based contamination. In addition, a Fish and Wildlife Impact Analysis (Step I and limited Step II) document will be completed.

Estimated Cost: $3,000-3,500

Geophysical survey consisting of the application of ground penetrating radar (GPR) of approximately four (4) of the twelve (12) acre site.

Estimated Cost: $7,500-10,000

Hydrogeologic data collection and evaluation of soil characteristics (i.e. grain size analysis and total organic carbon content) and ground water characteristics (i.e. a slug test or drawn-down test for determination of hydraulic conductivity) will be performed on a subset (2-3 monitor well location) of the on-site monitor wells.

Estimated Cost: $1,700-2,100

Consistent with recommendations made by PES, and due to the proximity of contamination to the location of a domestic water supply well servicing the private residence south of the subject site, a replacement domestic well is required. The double cased drilled well will be installed under the observation of a PES geologist at a location to be determined and agreed on by all relevant parties. Based on verbal information regarding the depth of the domestic well servicing the subject site (approximately 120 feet below grade) a total estimated depth of 150 feet is expected. The replacement domestic well will be installed by an experienced water well driller. Actual cost will be dependent on depth to bedrock, final depth of well and location relative to the residence.

Estimated Cost $9,500-11,000

Historic research of data available to the public will be performed to ascertain information regarding the possible occurrence of potential sources of subsurface/surface contamination. Data obtained and/or reviewed will include but not be limited to acquisition of historic data from Environmental Data

Resources, Inc. (EDR), review of historic aerial photographs, acquisition of historic Sanborn Fire Insurance Maps review of vintage/current topographic maps, etc.

Estimated Cost: $1,500

Information review and reporting of combined findings will be conducted regarding all additional workscopes mentioned as part of this cost estimate.

Estimated Cost: $2,500

Site Investigation/Remedial Alternatives Work Plan Preparation.

Estimated Cost: $2,400

Site-Specific Health and Safety Plan Preparation.

Estimated Cost: $500

Citizen Participation Plan Preparation and Implementation.

Estimated Cost: $6,300-7,000

Please Note: the preceding budgetary estimate is based on work requirements as outlined in the Brownfields procedures handbook. *The costs associated with this work plan are budgetary estimates only and should not be regarded as a not to exceed quotation.* In keeping with section 3.3 of the Brownfields Program Policy, actual work will be billed on a time and materials basis according to PES's published rate schedule (see attachment). PES is not responsible for damage to miss or un-marked subsurface utilities. Identification of subsurface utilities on the subject property is the responsibility of the property owner. This work plan assumes clear and free access to the site and maximum drilling depths of twelve (12) feet. Appropriate sales tax will be applied to the final invoice. If you have any questions concerning the aforementioned workscope, please call us at (518) 885-4399. Thank you for your consideration.

TOTAL ≈ $70,590 → $80,095

Sincerely,
PRECISION ENVIRONMENTAL SERVICES, INC.

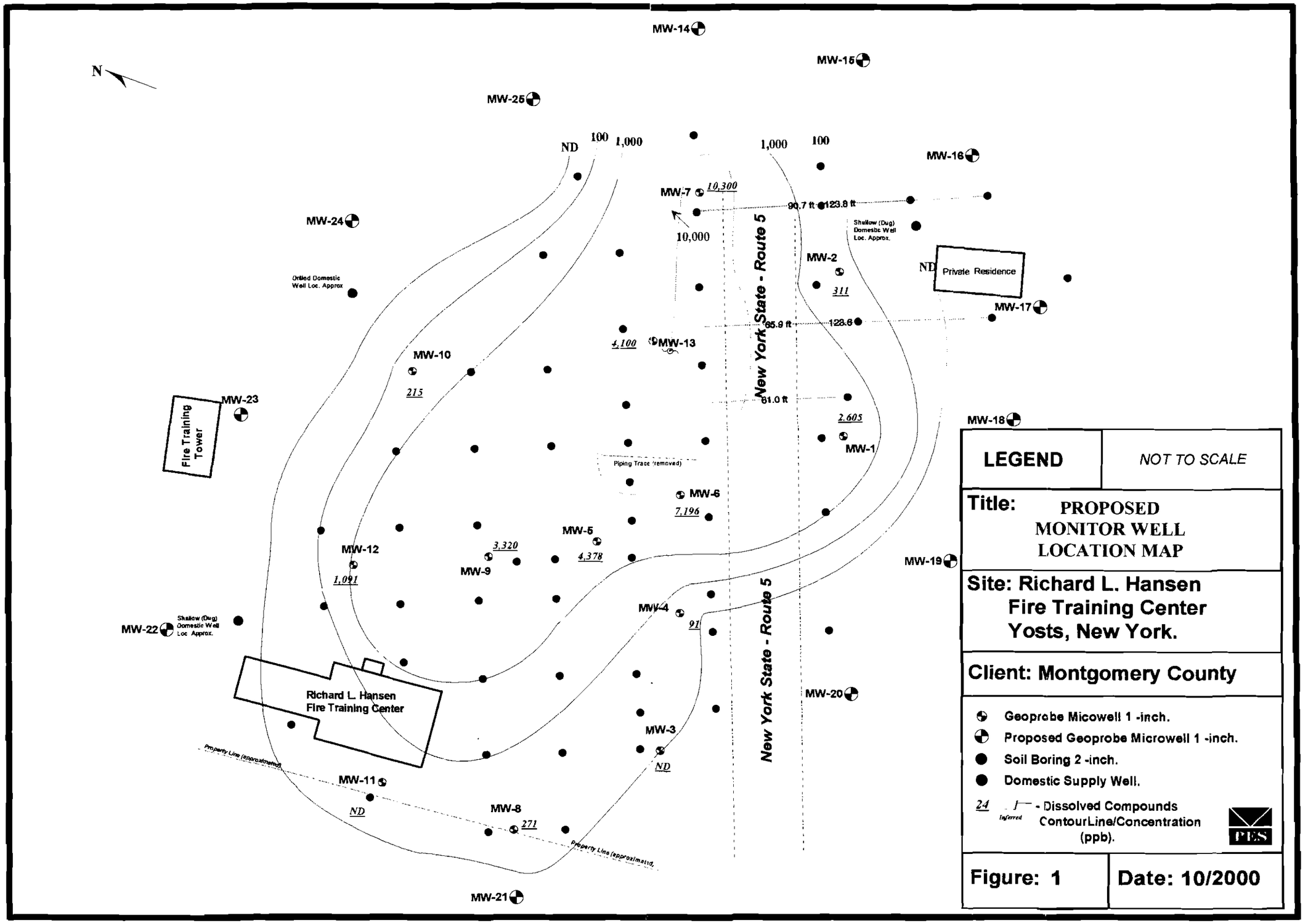
Eric S. Lewis
Senior Environmental Geologist

John J. Johnson
Geotechnical Manager/Senior Hydrogeologist

Workscope Authorization: _____ Date: _____

Mr. Paul Clayburn, Deputy Commissioner or Mr. David Bouck, Commissioner
Montgomery County Department of Public Works
Richard L. Hanson, Jr. Fire Training Center, Yosts, New York

Figures


N
MW-14
MW-15
MW-25
MW-16
MW-24
MW-7
10,300
10,000
90.7 ft
123.8 ft
Shallow (Dug) Domestic Well Loc. Approx.
Drilled Domestic Well Loc. Approx
MW-2
311
ND
Private Residence
MW-17
65.9 ft
123.6
4,100
MW-13
MW-10
215
New York State - Route 5
61.0 ft
2,605
MW-18
MW-1
MW-23
Fire Training Tower
Piping Trace (removed)
MW-6
7,196
MW-5
4,378
MW-12
1,091
3,320
MW-9
MW-19
MW-4
91
MW-22
Shallow (Dug) Domestic Well Loc. Approx.
Richard L. Hansen Fire Training Center
MW-20
MW-3
ND
Property Line (approximated)
MW-11
ND
MW-8
271
Property Line (approximated)
MW-21
LEGEND
NOT TO SCALE
Title: PROPOSED MONITOR WELL LOCATION MAP
Site: Richard L. Hansen Fire Training Center Yosts, New York.
Client: Montgomery County
Geoprobe Micowell 1 -inch.
Proposed Geoprobe Microwell 1 -inch.
Soil Boring 2 -inch.
Domestic Supply Well.
24 inferred - Dissolved Compounds ContourLine/Concentration (ppb).
PES
Figure: 1
Date: 10/2000

Health & Safety Plan

SITE EMERGENCY DATA

DO NOT ENDANGER YOUR *OWN* LIFE! SURVEY THE SITUATION BEFORE ACTING!

Precision Environmental Services Telephone: 518-885-4399
Site Address:
Richard L. Hanson, Jr. Fire Training Center
NYS Route 5
Yosts, New York 12068

Nearest Telephone: 518-853-3814 On-site: same
Site Contact: Mr. Paul Clayburn
UFPO (Dig-Safe) File #:
Effective as of:

EMERGENCY TELEPHONE NUMBERS

AMBULANCE: 911
FIRE: 911
POLICE: 518-673-3111 or 911
POISON CONTROL: 800-336-6997
NEAREST HOSPITAL (EMERGENCY ROOM):
Amsterdam Memorial Hospital 518-842-3100
HOSPITAL ADDRESS: 4988 NYS Rte. 30
Amsterdam, New York 12010

FIRST AID

INGESTION: CALL *POISON* CONTROL-FOLLOW INSTRUCTIONS. ADMINISTER CPR IF NEEDED. SEEK MEDICAL ATTENTION.

INHALATION: REMOVE VICTIM FROM CONTAMINATE ENVIRONMENT. ADMINISTER CPR IF NEEDED. SEEK MEDICAL ATTENTION.

SKIN CONTACT: BRUSH OFF DRY MATERIALS. REMOVE CONTAMINATED CLOTHING. WASH *SKIN* THOROUGHLY WITH SOAP AND WATER. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

EYE CONTACT: FLUSH EYES WITH CLEAN WATER FOR 15 MINUTES, SEEK MEDICAL ATTENTION.

EXPOSURE SYMPTOMS:
HEADACHE; DIZZINESS; NAUSEA; DROWSINESS; IRRITATION OF EYE, NOSE, AND/OR THROAT; BREATHING DIFFICULTIES.

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1.0 EMERGENCY RESPONSE
2.0 SITE SPECIFICS

IN THE EVENT OF AN ACCIDENT OR EMERGENCY SITUATION, IMMEDIATE ACTION MUST BE TAKEN BY THE PERSON WHO RECOGNIZES THE EVENT.

FIRST AID EQUIPMENT IS LOCATED INSIDE ALL PRECISION ENVIRONMENTAL SERVICES VEHICLES. NOTIFY THE SITE SAFETY OFFICER ABOUT THE SITUATION IMMEDIATELY AFTER EMERGENCY PROCEDURES ARE INITIATED.

TITLE	NAME	TELEPHONE
PROJECT MANAGERS	JOHN JOHNSON	518-885-4399
	ERIC LEWIS	518-885-4399
	MIKE WATSON	518-885-4399
AGENCY CONTACT	NYS DEC/RALPH KEATING	518-457-5677
AMBULANCE	NYS POLICE	911
FIRE DEPARTMENT	NYS POLICE	911
POISON CENTER		800-336-6997
NATIONAL RESPONSE CENTER		800-424-8802
EPA INFORMATION HOTLINE		800-424-9346
CHEMTREC		800-424-9300
DIGSAFE		800-962-7962

1.2 SITE EVACUATION PLAN

In the event that a site emergency necessitates evacuation, appropriate signals will be given for site-wide evacuation. Personnel shall evacuate the site in a calm and controlled fashion and regroup at a predetermined location. The route of evacuation will be dependent upon wind direction, severity and type of incident, etc.

THE SITE MUST NOT BE RE-ENTERED UNTIL BACK-UP HELP, MONITORING EQUIPMENT, AND/OR PERSONAL PROTECTIVE EQUIPMENT IS ON-HAND.

1.3 USUAL PROCEDURES FOR INJURY

1) **TELEPHONE FOR AMBULANCE/MEDICAL ASSISTANCE IF NECESSARY.** Whenever possible, notify the receiving hospital of the nature of the physical injury or chemical over-exposure. If no phone is available, transport the person to the nearest hospital. Refer to **APPENDICES** for additional information and map to the hospital.

2) IF THE INJURY IS MINOR, PROCEED TO ADMINISTER FIRST-AID.

3) NOTIFY THE SITE SAFETY OFFICER, AND THE PROJECT MANAGER of all accident, incident, and near miss situations.

4) COMPLETE ACCIDENT/INCIDENT REPORT FORM (FOUND IN APPENDIX E).

1.4 EMERGENCY TREATMENT

When transporting an injured person to a hospital, bring this site Health and Safety Plan (HASP) to assist medical personnel with diagnosis and treatment. In all cases of chemical overexposure, follow standard procedures as outlined below for poison management, first-aid, and, if applicable, cardiopulmonary resuscitation. Four different routes of exposure, and their respective first-aid/poison management procedures are outlined below:

INGESTION:
Call poison control - follow instructions. Seek medical attention.

INHALATION/CONFINED SPACE:
DO NOT ENTER A CONFINED SPACE TO RESCUE SOMEONE WHO HAS BEEN OVERCOME UNLESS PROPERLY EQUIPPED AND A STANDBY PERSON IS PRESENT!

INHALATION/OTHER:
Remove the victim from the contaminated environment. Initiate CPR if necessary. Call or have someone call for medical assistance. Refer to MSDS for additional specific treatment information.

SKIN CONTACT/NON-CAUSTIC CONTAMINANT:
(PETROLEUM, GASOLINE, etc.)
Wash off skin with a large amount of clean water immediately. Remove any affected clothing and rewash skin using soap if available. Transport victim to medical facility if necessary.

SKIN CONTACT/CORROSIVE CONTAMINANT:
(ACIDS, HYDROGEN PEROXIDE, etc.)
Wash off skin with a large amount of clean water immediately. Remove any affected clothing and rewash skin with water. Transport person to medical facility if necessary.

SKIN CONTACT/INFECTIOUS DISEASE:
Wash of f skin with a large amount of clean water and "biocide solution (i.e.: anti-bacterial soap). Remove any affected clothing and rewash skin with solution. Rinse with copious amounts of clean water.

EYES:
Hold eyelids open and rinse the eyes immediately with large amounts of clean water for at least 15 minutes. If possible, have the victim remove his/her contact lenses (if worn). Never permit the eyes to be rubbed. Transport the victim to a medical facility as soon as possible.

2.0 INFORMATIONAL SUMMARY

2.1 HEALTH AND SAFETY SUMMARY

2.1.1 SITE SPECIFIC CONTAMINANTS OF CONCERN:

PETROLEUM HYDROCARBONS: Gasoline, #2 Fuel Oil and Kerosene

2. 1.2 ACTION LEVELS

Action levels have been developed by PES health and safety professionals. **Action Levels** are those concentrations at which an upgrade in personal protective equipment (PPE) is required. Organic vapor concentrations are to be monitored in the field through the use of flame-ionization detectors (FIDs) or photo-ionization detectors (PIDs) with readings being taken in the breathing zone occupied by field personnel to determine if an action level has been exceeded. All air monitoring results are to be logged on the **Vapor Monitoring Sheets** found in **Appendix F.**

ALL INITIAL SITE ACCESS AND ACTIVITIES WILL BE PERFORMED IN LEVEL D PPE.

2.1.3 INSTRUMENTATION RESPONSES FOR WORK GASOLINE IN AMBIENT AIR

(TWA: 300 ppm) (STEL: 500ppm)

PHOTO-IONIZATION OR FLAME-IONIZATION DETECTOR

0.0	to	100.0 ppm	Level D
101.0	to	750.0 ppm	Level C
751.0	to	10,000.0 ppm	Level B
ABOVE 10,000 ppm			Immediate Withdrawal

COMBUSTIBLE GAS DETECTOR

0.0	to	10.0%	LEL	Continue Normal Activities
Above 10%			LEL	Immediate Withdrawal

OXYGEN DETECTOR RESPONSE

0.0	to	19.5%	Oxygen	Level B mandatory
19.5	to	23.0%	Oxygen	Continue Normal Activities immediate
Above 23.0%			Oxygen	Withdrawal

HAZARD SUMMARY

JOB TASK	LEVEL PPE	MONITOR (AMB)	FREQUENCY
DRILLING & BORING	MODIFIED LEVEL D	PID/FID/LEL	STARTUP, EVERY 30 MINUTES
WELL INSTALLS	MODIFIED LEVEL D	PID/FID/LEL	STARTUP, EVERY 30 MINUTES
SURVEY/GAUGE	MODIFIED LEVEL D	PID/FID/LEL	EACH LOCATION
NW DEVELOPMENT	MODIFIED LEVEL D	PID/FID/LEL	EACH LOCATION
SOIL/WATER SAMPLING	MODIFIED LEVEL D	PID/FID/LEL	EACH LOCATION
UST EXCAVATION	MODIFIED LEVEL D	PID/FID/LEL	STARTUP, EVERY 15 MINUTES
UST ENTRY, DISMANTLING, REMOVAL, & CLEANING	LEVEL C	PID/FID/LEL	STARTUP, EVERY 15 MINUTES

Note: Ambient vapor monitoring performed at **EACH LOCATION** entails several minutes of air quality monitoring in the breathing zone prior to performing noted activity, at well locations, open manhole cover or vault prior to monitoring.

2.2 OTHER SITE SPECIFIC CONSIDERATIONS:

3.0 INTRODUCTION

3.1 BACKGROUND

PRECISION ENVIRONMENTAL SERVICES has been retained to perform environmental services at the location on the cover page of this document. This site health and safety plan **(HASP)** is prepared in accordance with OSHA 29 CPR 1910.120.

3.2 PURPOSE

The purpose of this **HASP** is to provide field personnel, subcontractors, and other visitors with an understanding of the potential chemical and physical hazards that exist, or that may arise while the tasks of this project are being performed.

This **HASP** describes the procedures to be followed to reduce personnel exposure to potential health hazards that may be present at the site. Emergency response procedures necessary to respond to incidents involving these hazards are also described in this document.

3.3 OBJECTIVE

The primary objective is to insure the well being of all field personnel and the community surrounding the site. To accomplish this, project staff and subcontractors shall adhere to the policies established herein. All persons engaged in site activities shall read this **HASP** and sign the **AGREEMENT AND ACKNOWLEDGEMENT STATEMENT** (APPENDIX A) to certify that they have read, understood, and agreed to abide by its provisions.

3.4 AUTHORIZATION

PRECISION ENVIRONMENTAL SERVICES personnel have the authority to stop work performed by our subcontractors at this site if work is not performed in accordance with the requirements of this **HASP.**

3.5 AMENDMENTS

Any changes in the scope of work on this project, and/or site conditions must be amended in writing on the **HASP AMENDMENT SHEET** found in the Appendix and acknowledged by the **SITE SUPERVISOR** and the **PROJECT MANAGER.**

4.0 HAZARD EVALUATION

4.1 SITE TASKS

The field tasks covered by this HASP may include soil boring sampling, drilling, subsurface entry, monitoring well maintenance, monitoring well survey, groundwater well gauging, monitoring well development, vapor screening, groundwater & soil sampling, pump tests, soil vent system installation, air stripper installation, catalytic incinerator installation, and UST closure & removal.

4.2 JOB TASK HAZARDS

4.2.1 ALL FIELD TASKS: THE FOLLOWING HAZARDS MAY BE ENCOUNTERED.-

ORGANIC VAPORS

The inhalation of volatile organic constituents **(VOC's)** during all operations may pose a potential health hazard. Hazard reduction procedures include monitoring the ambient air with a PID and/or an FID, and the use of Personal Protective Equipment **(PPE).** Workers should position themselves upwind of the source area of contamination whenever possible.

FLAMMABLE VAPORS

Presence of flammable vapors can pose a potential fire hazard and health hazard. Hazard reduction procedures include monitoring the ambient air with an 0_2/LEL meter. If the LEL reading exceeds 10% leave the site immediately and contact the fire department.

OXYGEN

Atmospheres that contain a level of oxygen greater than 23% pose an extreme fire hazard (normal ambient oxygen levels are approximately 20.9%). This hazard can be compounded by the fact that the vapors associated with this site are highly flammable. All personnel encountering atmospheres that contain a level of oxygen greater than 23% must evacuate immediately and must notify the fire department. If oxygen levels are less than 19.5%, the potential for suffocation is extremely high. Evacuate immediately. A protection level upgrade to Level B will be mandated.

SOILS & WATERS IMPACTED BY INFECTIOUS DISEASES

At sites where infectious diseases are suspected, or confirmed, all personnel will be required to enter and work in HOT zones in Level- C PPE. Decontamination of PPE shall be by clean water and bleach solution of one part chlorine bleach to three parts water. Respirator cartridges shall be of combination organic vapor/fine particulate type. Cartridges shall be disposed of daily and replaced with fresh units. Full-face respirators shall be mandatory to protect eyes during any sampling activities.

VEHICULAR TRAFFIC

All employees will be required to wear a fluorescent safety vest at all times while on site. In addition, supplemental traffic safety equipment use may be warranted by specific tasks (i.e. drilling, excavation, gauging and sampling in traffic areas). Supplemental equipment should include traffic cones, barricades, flagging tape, and appropriate signage.

4.2.2 WELLS (INSTALLATION/DEVELOPMENT/GAUGING/BAILING/SAMPLING)

Skin and eye contact with contaminated groundwater and/or soil may be incurred during these tasks. Nitrile gloves and approved safety glasses must be worn. When splash potential exists, safety goggles must be worn for additional protection.

4.2.3 SAMPLE PRESERVATION

When preservation acids are used, skin and eye contact can occur. This hazard can be reduced with the use of Nitrile gloves and safety glasses. When splash potential exists, safety goggles must be worn for additional protection.

4.2.4 CLEANING EQUIPMENT

Skin and eye contact with methanol, alconox, liquinox, or other cleaning substances can occur while cleaning equipment. This hazard can be reduced with the use of Nitrile gloves, safety glasses or goggles, and a protective splash apron when appropriate.

4.2.5 CONFINED SPACE ENTRY

Confined space entry **REQUIRES** a supervised confined space entry permit; entry shall only be permitted to personnel professionally trained in confined space entry techniques equipped with all appropriate equipment. Excavation pits, storage tanks, subsurface vaults, and basements are examples of confined spaces. Confined spaces can be identified as an area having any one of the following characteristics:

limited access and egress
unfavorable natural ventilation
not designed for human occupancy

Organic and/or combustible vapors may be trapped resulting in a lack of oxygen (anoxia) and/or over exposure to vapors. When site work is performed in a confined space, the air must be monitored for:

oxygen levels
flammable vapors
toxic vapors

The following air monitoring procedures must be followed before entering a confined space:

a Oxygen Level: Monitor for % oxygen with 0_2/LEL Meter to ensure an oxygen level between 19.5 and 23%. Because of the high vapor density of the contaminants associated with this site there is a high probability that vapors in the enclosed spaces or vaults will replace any oxygen that is present, even if the space is open to the air. Therefore, oxygen level monitoring will be done at the top, middle, and bottom of the enclosed space to determine if there is a minimum acceptable oxygen level of 19.5% prior to entry. The oxygen/LEL meter is factory set to sound an alarm at levels less then 19.5% oxygen.

If oxygen is less than 19.5% or greater than 23%, do not enter the space.

b: Explosive Vapors: Monitor for % of Lower Explosive Limit (LEL) with a 0_2/LEL meter to determine whether vapor concentrations within the confined space are within the flammable range. If LEL readings exceed 1% personnel should exercise extreme caution, use non-sparking tools and utilize ventilation engineering controls to reduce LEL levels. The oxygen/LEL meter is factory set to sound an alarm at levels greater than or equal to 10% LEL. If LEL readings exceed 10%, personnel MUST leave the site immediately and contact the Fire Department and Project Manager.

c: Toxic vapors: Monitor for toxic vapors with a PID and/or and FID to determine whether toxie vapors within the confined space exceed the action levels. PID or FID readings will be taken at the top, middle and bottom of a vault, trench, or other confined space to determine vapor levels.

d: Summary: Do not enter the confined space unless:

You are professionally trained and certified in confined space entry techniques,
You have filled out the **Confined Space Entry** Permit found in **Appendix G** of this document under the supervision and approval of a certified supervisor for confined space entry,
You have all required PPE and rescue equipment (as determined appropriate by the site health and safety officer, in-use, or on-hand prior to entry,
A trained backup person (other than the situation monitor) is on-hand, and prepared with all appropriate rescue equipment prior to entry,
the oxygen concentration is between 19.5 and 23%
the LEL is loss than 10%
PID and/or FID readings are less than 750 ppm (a full face air purifying respirator must be worn if the readings exceed 100 ppm)

4.2.7 OCCUPATIONAL NOISE

Requirements set forth in the OSHA Hearing Conservation Regulation (OSHA 1910.95) shall be adhered to during work on-site. Hearing protection shall be provided to the employee where sound pressure levels exceeds 85 dB. Hearing protection shall be worn where sound pressure levels in areas and/or on equipment exceeds 90 dB. Typical PRECISION ENVIRONMENTAL SERVICES drilling operations have been monitored with a sound level meter and indicated that hearing protection is required for all personnel while engaged in this work task.

ALL MONITORING EQUIPMENT MUST BE CALIBRATED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

4.2.8 HEAT STRESS

Since climatic changes cannot be avoided, work schedules will be adjusted to provide time intervals for intake of juices, juice products and water in an area free from contamination and in quantity appropriate for fluid replacement.

For temperature above 70 F, the following regime shall be followed for workers wearing various clothing.

Adjusted Temperature**	**Typical Work Uniform**	**Protective Clothing**
90 F or above	After @ 45 min wk	After @ 15 min work
87.5-90 F	After @ 60 min wk	After @ 30 min work
82.5-87.5 F	After @ 90 min wk	After @ 60 min work
77.5-82.5 F	After @ 120 min wk	After @ 90 min work
72.5-77.5 F	After @ 150 min wk	After @120 min work

Workers wearing semi-permeable or impermeable encapsulating protective clothing should be monitored. for heart rate and temperature when the temperature in the work area is above 70 degrees Fahrenheit. To monitor the worker, measure:

a: Heart rate. Count the radial pulse during a 30-second period as early as possible in the rest period. If the heart rate exceeds 100 beats per minute at the beginning of the rest period, shorten the next work cycle by one- third.

b. Oral temperature. Use a clinical thermometer or similar device to measure the oral temperature at the end of the work period (before drinking). If oral temperature exceeds 99.6F shorten the next work cycle by one-third.

Do not permit a -worker to wear a semi-permeable or impermeable garment if the core body temperature exceeds 100.6F.

Workers shall not be required to continue working if they feel any of the symptoms of heat stress. Rest periods should be minimum of 15 minutes. Length of rest period should be extended as appropriate or as recommended by Site Safety Officer or alternate.

Heat stress may occur even in moderate temperature areas and may present any or all of the following conditions:

A. Heat Rash: Result of continuous exposure to heat; humid air, and chafing clothes. Heat rash is uncomfortable and decreases the ability to tolerate heat.

B. Heat Cramps: Result of the inadequate replacement of body electrolytes lost through perspiration. Signs include sever spasms and pain in the extremities and abdomen.

C. Heat Exhaustion: Result of increase stress on the vital organs of the body in the effort to meet the body's cooling demands. Signs include shallow breathing; pale, cool, moist skin; profuse sweating; dizziness.

D. Heat Stroke: Result of overworked cooling system. Heat stroke is the most serious form of heat stress. Body surfaces must be cooled and medical help must be obtained immediately to prevent severe injury and/or death. Signs include red, hot, dry skin; absence of perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma; and death.

* HEAT STRESS PREVENTION *

A. Replace body fluids (water and electrolytes) lost through perspiration. Solutions may include a 0.1% salt and water solution or commercial mixes such as Gatorade. Employees must be encouraged to drink more than the amount required to satisfy thirst.

B. Cooling devices to aid the natural body ventilation. Cooling occurs through evaporation of perspiration and limited body contact with heat-absorbing protective clothing. Utilize fans and air conditioners to assist in evaporation. Long, cotton underwear is suggested to absorb perspiration and limit any contact with heat-absorbing protective clothing (i.e. coated tyvek suits)>

C. Provide hose-down mobile shower facilities to cool protective clothing and reduce body temperature

D. Conduct non-emergency response activities in the early morning or evening during very hot weather.

E. Provide shelter against heat and direct sunlight to protect personnel, take breaks in shaded areas.

F. Rotate workers utilizing protective clothing during hot weather.

G. Establish a work regime that will provide adequate rest periods with personnel working in shifts.

* HEAT STRESS MONITORING *

Heat stress may occur even in moderate temperatures and may present heat rash, heat cramps, heat exhaustion, and/or heat stroke.

Monitoring procedures should be implemented to prevent heat stress arising from any of the following: environmental conditions, use of personal protective equipment, intensity of workload.

4.2.9 COLD STRESS:

Work schedules will be adjusted to provide sufficient rest periods in a heated area f or warming up during operations conducted in cold weather. Also thermal protective clothing such as wind and/or moisture resistant outerwear is recommended to be worn.

If work is performed continuously in the cold at or below -7, C (20, F), including wind chill temperature, heated warming shelters (tents, cabins, company vehicles, etc.) shall be made available nearby and the worker should be encouraged to use these shelters at regular intervals, the frequency depending on the severity of the environmental exposure. The onset of heavy shivering, frostbite, the feeling of excessive fatigue, drowsiness, irritability, or euphoria, are indications for immediate return to the shelter.

When entering the heated shelter the outer layer of clothing shall be removed and the remainder of the clothing loosened to permit sweat evaporation. A change of dry work clothing shall be provided as necessary to prevent worker from returning to their work with wet clothing.

Dehydration, or the loss of body fluids, occurs in the cold environment and may increase the susceptibility of the worker to cold injury due to a significant change in blood flow to the extremities. Warm sweet drinks and soups should be provided at the work site to provide caloric intake and fluid volume. The intake of coffee should be limited because of a diuretic and circulatory effect.

5.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

MODIFIED LEVEL D IS THE MINIMUM LEVEL OF PPE FOR THIS SITE

5.1 MODIFIED LEVEL D:

HARD HAT
STEEL TOE & SHANK BOOTS
LATEX OR NITRILE GLOVES (OPT)
OUTER NITRILE BUTYL-RUBBER GLOVES (OPT)
SPLASH GOGGLES (OPT)
HEARING PROTECTION WHENEVER APPROPRIATE
SAFETY GLASSES
FLUORESCENT VEST
COVERALLS (OPT)
OUTER BOOTS (OPT)
TYVEK SUIT (OPT)

5.2 LEVEL C:

BUDDY SYSTEM REQUIRED AT ALL TIMES
FULL FACE RESPIRATOR WITH APPROPRIATE CARTRIDGES
POLYETHYLENE COATED TYVEX SUIT
INNER LATEX OR NITRILE GLOVES
OUTER NITRILE BUTYL-RUBBER GLOVES
STEEL TOE & SHANK BOOTS
LATEX OUTER BOOT COVERS
HARD HAT
HEARING PROTECTION WHENEVER APPROPRIATE

NOTE:

RESPIRATOR CARTRIDGES MUST BE CHANGED A MINIMUM OF ONCE PER DAY OR WHEN ODOR BREAKTHROUGH IS DETECTED, WHICHEVER OCCURS FIRST.

5.3 LEVEL B

BUDDY SYSTEM REQUIRED AT ALL TIMES
SUPPLIED AIR RESPIRATOR OR SCBA
SARANEX COATED TYVEK SUIT
INNER LATEX OR NITRILE GLOVES
OUTER NITRILE BUTYL-RUBBER GLOVES
STEEL TOE & SHARK BOOTS
LATEX OUTER BOOT COVERS
HARD HAT
HEARING PROTECTION WHENEVER NECESSARY

Contact with contaminated surfaces should be avoided whenever possible. This includes walking through, kneeling, or placing equipment in puddles or mud, or on discolored surfaces. Avoid contact of personnel and/or equipment with drums and tanks. Eating, smoking, and/or drinking is prohibited in the immediate work area.

When utilizing protective garments such as tyvek suits, gloves, and over-boots, all seams between protective items shall be sealed with duct tape.

6.0 DECONTAMINATION PROCEDURES

All operations eonducted at this site have the potential to contaminate monitoring equipment and personal protection equipment. To prevent the transfer of any contamination to vehicles, administrative areas and personnel, the following procedures must be followed.

Whenever possible, monitoring equipment should be decontaminated with a solution of Alconox and thoroughly rinsed with water prior to leaving the site.

PERSONAL DECONTAMINATION

LEVEL D
- segregated equipment drop
- wash/rinse outer boot, then remove (as appropriate)
- wash/rinse chemical resistant outer glove, then remove (as appropriate)
- remove hard hat, goggles/safety glasses/face shield

LEVEL C
- segregated equipment drop
- wash/rinse outer boots
- wash/rinse chemical resistant outer gloves, then remove
- remove chemical resistant suit (remove by rolling down the suit)
- remove outer boots and place to dry
- remove first pair(s) of disposable gloves
- remove respirator/hard hat, dispose of cartridges and wash respirator
- remove last pair of disposable gloves

LEVEL B
- segregated equipment drop
- wash/rinse outer boots
- wash/rinse chemical resistant outer gloves, then remove
- cross hotline(into decon area) and change air tanks, then redress or
- cross hotline (into clean area)
- remove boots and gloves
- remove SCBA, if worn over chemical resistant suit if SCBA is worn under the suit, remove the chemical resistant suit, then SCBA
- remove hard hat

All water used in decontamination procedures should be stored until sufficient amounts are stockpiled to facilitate disposal and/or treatment.

All decontamination solutions shall be disposed at the workstation where it was generated.

Disposable sampling and personal protective equipment will be placed in plastic bags and temporarily stored in designated drums. These drums shall be disposed of according to regulatory guidelines.

7.0 HEALTH AND SAFETY REQUIREMENTS

7.1 MEDICAL MONITORING PROGRAM

All personnel must undergo a baseline physical examination before they are permitted in any remedial action work. Yearly re-examination should be performed to update information on employee health status. Additional re-evaluation will be considered in the event of a chemical over-exposure. These medical surveillance requirements shall comply with OSHA regulations as defined in 29 CFR 1910.120.

7.2 TRAINING

All personnel working at this site should have received a minimum of 40 hours of initial hazardous waste activity instruction, and minimum of three days of field experience under the direct supervision of a trained, experienced person. Personnel assigned to the site will also receive 8 hours refresher training per year. On-site managers and supervisors directly responsible for employees engaged in hazardous waste operations have receive an additional 8 hours of supervisory training. These training requirements comply with the OSHA Hazardous Waste Operations and Emergency Response regulations, 20 CFR 1910.120.

7.3 VISITOR POLICY

All visitors and/or trainees on-site must submit to the limitations described in Appendix B.

7.4 WORK ZONE/ACCESS

Work zone and support areas shall be established based on ambient air data and proposed work sites. They shall be established in order to contain contamination within the smallest areas possible and shall ensure that each employee has the proper personal protective equipment for the area or zone in which work is to be performed.

7.5 FIRST AID EQUIPMENT

Vehicles used for site work will be equipped with a first aid kit and safety equipment including:

- fluorescent vests;
- cones (and flags as needed);
- hazardous tape (barricades ad needed);
- mounted fire extinguisher (10 pound A/B/C type);
- working flashlight;
- water, suitable for drinking;
- portable eye wash;
- first aid kit with appropriate bandage material;
- full body harness with lifeline (for confined space entry.)

7.6 DRILLING PROCEDURES

A Digsafe authorization number must be obtained prior to drilling. During the drilling operation two persons (one designated as "driller" and the other as "helper") must be present at all times. The helper (whether PRECISION ENVIRONMENTAL SERVICES personnel or subcontractors) must be instructed as to the location of the emergency shut-off switch. Every attempt must be made to keep unauthorized personnel from entering the work area. If this is not possible, the operation should be shut down until the area is cleared. The area where the operation is taking place shall be cordoned off with a barricade. The Site Safety Officer or the Field Team Leader has the authority and the responsibility to shut down the drilling operations whenever a hazardous situation is deemed present.

The mast of the drilling rig must maintain a minimum clearance of 20 feet from any overhead electrical cables. All drilling operations will cease immediately during hazardous weather conditions such as high winds, heavy rain, lightening and heavy snow.

7.7 FIRE PREVENTION

During equipment operation, periodic vapor concentration measurements should be taken with an explosimeter or combustimeter. If at any time the vapor concentrations exceed 20% of LEL, the Site Safety Officer or designated field worker should immediately shut down all operations, call the fire department and project manager.

Only approved safety flammable cans will be used to transport and store liquids.

All gasoline and diesel driven engines requiring refueling must be shut down and allowed to cool before filling.

Smoking is not allowed during any operations within the work area.

No open flame or spark is allowed in any area containing petroleum products, or other flame liquids.

The four classes of fire are as follow:

Class A: Wood, cloth, paper, rubber, many plastics, ordinary combustible materials.

Class B: Flammable liquids, gases, and greases.

Class C: Energized electrical equipment.

Class D: Combustible metals such as magnesium.

APPENDIX A

AGREEMENT AND ACKNOWLEDGEMENT STATEMENT

AGREEMENT AND ACKNOWLEDGEMENT STATEMENT

We the undersigned have read and acknowledge this Health & Safety Plan for subsurface investigation and remediation at the Richard L. Hanson, Jr. Fire Training Center. We also agree to abide by the rules within this document.

NAME	COMPANY	DATE

APPENDIX B

VISITOR POLICY

PRECISION ENVIRONMENTAL SERVICES, INC.
VISITORS AND/OR TRAINEES ON SITE

PRECISION ENVIRONMENTAL SERVICES is committed to providing a safe environment on all work sites for visitors, trainees, employees, and/or passersby. To accomplish this, the following guidelines must be adhered to:

1.0 VISITORS

A visitor is any person(s) who is (are) not actively participating in the work activities at the site. Visitors must be accompanied by PRECISION ENVIRONMENTAL SERVICES representative while on site.

All perimeters must have adequate signs, placards, barricades, etc. designating hazardous boundaries. Visitors shall not be allowed on any site that is not adequately marked. The **HASP** must define boundaries and be available on site for reference.

2.0 TRAINEES

Trainees are those employees of PRECISION ENVIRONMENTAL SERVICES who have not yet completed the safety training required by the company. New hires and in-house company transfers will be considered trainees until criteria are met.

Trainees shall be informed of restrictions by their supervisor and must agree to abide by them prior to visiting active sites.

Trainees will be permitted to visit **PRECISION ENVIRONMENTAL SERVICES** sites as observers providing the following conditions are met:

All trainees are supervised by a qualified **PRECISION ENVIRONMENTAL SERVICES** manager at all times while observing on site.

Trainees perform no work functions of any type while on site.

Trainees do not handle any equipment, tools, and/or supplies while on site.

Trainees do not enter any hazardous, hot zone or confined space areas while on site.

Supervisors will be responsible for informing all trainees of the above, and for insuring that conditions are adhered to, and also for insuring that trainees will not be asked to violate the conditions outlined above.

Documentation in the form of a signed agreement by both parties must be maintained in the **HASP.**

Infractions of the above agreement will be viewed as extremely serious, and will be subject to disciplinary action up to and including termination f or either the trainee and/or the supervisor.

PRECISION ENVIRONMENTAL SERVICES, INC.
VISITORS/TRAINEES *ON SITE*

Precision Environmental Services is committed to providing a safe working environment for all employees, trainees, subcontractors, and visitors. In addition, Precision Environmental Services will comply with OSHA requirements for employee safety training prior to permitting them to participate in work activities on any hazardous site.

(This section to be filled out by visitor/trainee

Agreement between

_____
(Print or Type Name)
and

PRECISION ENVIRONMENTAL SERVICES, INC.

Because we have your safety in mind, you will be considered a visitor/trainee until all training criteria are met. This means you must meet training requirements prior to performing work activities on-site. Until such training requirements are met, it is critical that you agree to the following conditions:

As a visitor/trainee, you may be asked to visit Precision Environmental Services sites as an observer. You must be supervised on all of these site visits.

As a visitor/trainee, your signature on this document indicates that you agree to:

1. Perform no work functions of any type.
2. Not handle any equipment and/or supplies of any type.
3. Not enter any hazardous or hot zone areas.

I agree to adhere to the above conditions in all instances while on site as a visitor/trainee.

Signature_____ Date_____

(This section to be filled out by supervisor)

As supervisor to the above named visitor/trainee, I agree to the above restrictions and agree not to request him/her to perform activities contrary to the above.

Signature_____ Date_____

APPENDIX C

HEALTH AND SAFETY PLAN AMENDMENT SHEETS

HEALTH AND SAFETY PLAN AMENDMENTS

PROJECT NAME: _____

PROJECT NUMBER: _____

LOCATION: _____

PROPOSED CHANGES IN FIELD ACTIVITIES AND/OR HAZARDS:

SUBMITTED BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____
HEALTH & SAFETY REPRESENTATIVE

APPENDIX D

MSDS/CONTAMINANT PROFILES

MATERIAL SAFETY DATA SHEET

GENIUM PUBLISHING CORPORATION
1145 CATALYN STREET
SCHENECTADY, NY 12303-1836 USA
(518) 377-8855

GENIUM PUBLISHING CORP

NO. 470

DIESEL FUEL OIL NO. 2-D

Date October 1981

SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: DIESEL FUEL OIL NO. 2-D
DESCRIPTION: Mixture of petroleum hydrocarbons; a distillate oil of low sulfur content
OTHER DESIGNATIONS: ASTM D975, CAS # 068 476 346
MANUFACTURER: Available from many suppliers

SECTION II. INGREDIENTS AND HAZARDS	%	HAZARD DATA
Diesel Fuel Oil No. 2-D		
Complex mixture of paraffinic, olefinic, napthenic and aromatic hydrocarbons**	>95	8-hr TWA 5mg/m^3* (mineral oil mist)
Sulfur content	<0.5	
Benzene***	<100 ppm	

*Current OSHA standard and ACGIH (1981) TLV
**Diesel fuels tend to be low in aromatics and high in paraffinics. A min. Cetane No. of 40 is required (ASTM D613).
***A low benzene level reduces carcinogenic risk. Fuel oils can be exempted under the benzene standard (29 CFR 1910.1028).

SECTION III. PHYSICAL DATA

Boiling point range, deg F, -------	Ca 340-675	Specific gravity (H_2O=1) ----	<0.86
Solubility in water ----------	negligible	Cloud point (wax), deg C ---	Ca 0
Viscosity at 40 C, cSt ----------	1.9-4.1		

Appearance and Odor: Clear, bright liquid with a mild petroleum odor.

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits In Air % by volume	LOWER	UPPER
125F min (PM)	>500F		0.6	7.5

Extinguishing Media: Dry chemical, carbon dioxide, foam, water spray. Use a water spray to cool fire exposed containers. Use a smothering technique for extinguishing fire of this combustible liquid. Do not use a forced water stream directly on oil fire as this will only scatter the fire. Material is a OSHA Class II combustible liquid.
Firefighters should wear self-contained breathing apparatus and full protective clothing.

SECTION V. REACTIVITY DATA

This is a stable material in closed containers at room temperature under normal storage and handling conditions. It does not undergo hazardous polymerization.
Incompatible with strong oxidizing agents; heating greatly increases fire hazard.
Thermal -oxidative degradation may yield various hydrocarbons and hydrocarbon derivatives (partial oxidation products), CO_2 and CO and SO_2.

MATERIAL SAFETY DATA SHEET

GENIUM PUBLISHING CORPORATION
1145 CATALYN STREET
SCHENECTADY, NY 12303-1836 USA
(518)-377-8855

GENIUM PUBLISHING CORP

NO. 467

AUTOMOTIVE
GASOLINE, LEAD-FREE

Date October 1981

SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: AUTOMOTIVE GASOLINE, LEAD-FREE
DESCRIPTION: A volatile blend of hydrocarbons for automotive fuel
OTHER DESIGNATIONS: Petrol, CAS #008 006 619, ASTM D439
MANUFACTURER: Available from several suppliers.

SECTION II. INGREDIENTS AND HAZARDS	%	HAZARD DATA
Gasoline A hydrocarbon blend that can include normal and branched chain alkanes, cycloalkanes, alkenes, aromatics and other additives.** (Lead max 0.013 g/L, phosphorus max 0.0013 g/L, sulfur max 0.10 wt%. May contain benzene, <5%; see ASTM D3606). *ACGIH 1981 TLV (Intended Changes List). See also Am. Ind. Hyg. A. 39 110-117 (1978) **The composition of fuel is varied with altitude and seasonal requirements for a locality. The blend must meet antiknock requirements. (Antiknock Index min 85, ASTM D439.)	100	8-hr TWA 300 ppm or 900 mg/m³* Man Eye: 500 ppm/1H Moderate irritation Inhalation: TCLo 900 ppm/1H TFX:CNS

SECTION III. PHYSICAL DATA

Distillation at 1 atm, Initial, deg C >39
50% distilled - 77-121
End point ----- <240
Vapor density (Air=1) ---------- 3.0-4.0
Solubility in water ---------- Insoluble

Specific gravity, 60/60 F - 0.72-0.76
Melting point, deg C ------ -90.5-95.4
Evaporation rate --------- N/A

Appearance and Odor: A clear, mobile liquid with a characteristic odor which can be recognized at about 10 ppm in air. (Gasoline may be colored with dye.)

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits In Air % by volume	LOWER	UPPER
-45 F	536-853 F		1.4	7.6

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam. Use of water may be ineffective to extinguish fire, but use water spray for cooling fire-exposed drums and tanks to prevent pressure rupture. It is a dangerous fire and explosion hazard when exposed to heat and flames. Vapors can flow along surfaces, reach distant ignition sources and flash back. Can react violently with oxidizing agents.
Firefighters should wear self-contained breathing apparatus and full protective clothing.

SECTION V. REACTIVITY DATA

This is a stable material in closed containers at room temperature under normal storage and handling conditions. It does not undergo hazardous polymerization.
This is an OSHA Class IA flammable liquid. A mixture of gasoline vapors and air can be explosive. It is incompatible with oxidizing agents.
Thermal-oxidative degradation can yield carbon monoxide and partially oxidized hydrocarbons.

DEFINITIONS

Threshold Limit Value - Time Weighted Average (TLV/TWA)

The time-weighted average concentration for a normal 8-hour work day and a 40-hours work week, to which nearly all workers may be repeatedly exposed without adverse effect.

Permissible Exposure Levels (PEL)

Time-weighted average concentrations similar to (and in many cases derived from) the Threshold Limit Values.

Recommended Exposure Limit (REL)

As defined by NIOSH similar to the Threshold Limit Values.

Lower Explosive Limit (LEL)

The minimum concentration of vapor in air below which propagation of a flame will not occur in the presence of an ignition source.

Upper Explosive Limit (UEL)

The maximum concentration of vapor in air above which propagation of a flame will not occur in the presence of an ignition source.

Flash Point (FP)

The lowest temperature at which the vapor of a combustible liquid can be made to ignite momentarily in air.

Vapor Pressure (VP)

The pressure characteristic at any give temperature of a vapor in equilibrium with its liquid or solid form, often expresses in millimeters of mercury (mm Hg).

Odor Threshold

A property displayed by a particular compound, low detection indicated a physiological sensation due to molecular contact with the olfactory nervous system (Based on 50% of the population).

Ionization Potential (IP)

The amount of ionizations a particular chemical compound displays.

APPENDIX E

ACCIDENT/INCIDENT REPORT FORMS

PRECISION ENVIRONMENTAL SERVICES, INC
ACCIDENT/INCIDENT REPORT

Employee Section I

Employee Name:_____ Date of Birth:_____

Address:_____

_____

Job Title:_____ Supervisor:_____

Office:_____

Location at time of incident:_____

Employee-Section 2

Was Incident: Physical _____ Chemical _____

Body parts affected:_____

Exposure Type: Dermal _____ Inhalation

Ingestion _____ Injection _____

Clearly describe the incident and its eause (if determined); turn to back of page if additional space is required.

Witnesses: 1)_____ 2)_____

Manager Section

Was injury inspected by a physician? _____

If Yes; Physician Name _____

Location _____

Date/Time _____

Was employee hospitalized? _____

If Yes; Hospital Name _____

Location _____

Date/Time _____

WHAT SPECIFIC CORRECTIVE ACTIONS HAVE BEEN TAKEN TO PREVENT A RECURRENCE:

_____ _____ _____ _____

EMPLOYEE SIGNATURE DATE MANAGER SIGNATURE DATE

COMPLETE AND RETURN THIS FORM TO YOUR OPERATIONS MANAGER WITHIN 24 HOURS. OPERATIONS MANAGER TO FORWARD COPY TO PRECISION ENVIRONMENTAL SERVICES OFFICE ASAP.

APPENDIX F

CONFINED SPACE ENTRY PERMIT FORMS

CONFINED SPACE ENTRY PERMIT

VALIDATION DATE: _____ TIME ENTRY WINDOW: _____

THIS PERMIT MUST BE COMPLETED AND POSTED TO AUTHORIZE IDENTIFIED EMPLOYEES/PERSONNEL TO ENTER CONFINED SPACE. IT MUST BE PROMINENTLY DISPLAYED AT THE CONFINED SPACE POINT OF ENTRY AT ALL TIMES WHILE PERSONNEL ARE WITHIN.

IDENTIFICATION OF CONFINED SPACE: _____

_____

PURPOSE OF ENTRY: _____

VENTILATION REQUIREMENTS: _____

TYPE OF MONITORING REQUIRED: _____

EMPLOYEES/PERSONNEL WITH AUTHORIZED ENTRY:

THIS PERMIT DURATION NOT TO EXCEED ONE WORK SHIFT

INSPECTION CRITERIA:

THE SPACE HAS_____/HAS NOT_____ BEEN EVACUATED OF CONTENTS

CONNECTING PIPELINES HAVE_____/HAVE NOT_____ BEEN BLANKED, DOUBLE BLOCKED AND BLED OR REMOVED.

THE SPACE-HAS____ HAS NOT ____ BEEN FLUSHED, PURGED OR CLEANED OF CONTENTS.

VENTILATION HAS____ HAS NOT _____ BEEN ACCOMPLISHED BY NATURAL ____ MECHANICAL ____ MEANS FOR A TIME PERIOD OF _____.

OXYGEN METER: _____% LEL METER: _____%

PID LEVELS: _____ppm CARBON MONOXIDE: _____ppm

ENTRY REQUIREMENTS

_____ CONTINUOUS MECHANICAL VENTILATION
_____ HARNESS & LIFELINE
_____ STANDBY PERSONNEL
_____ SUPPLIED AIR-LINE WITH ESCAPE PACK
_____ NEGATIVE PRESSURE RESPIRATOR
_____ RESCUE GEAR
_____ FIRE PROTECTION
_____ SCBA
_____ SAFETY CLOTHING

STANDBY PERSONNEL: _____

MONITORING PERSONNEL: _____

SITE SAFETY OFFICER APPROVAL: _____

REMARKS-/SPECIAL CONDITIONS: _____

APPENDIX G

PEROXIDE SAFETY/HYDROCHLORIC ACID SAFETY

PEROXIDE SAFETY

Peroxide is an extremely strong oxidizer, with a variety of uses including bio-reclamation and cleaning. All personnel should be aware that this material poses the possibility of being extremely hazardous.

All personnel shall wear full-face air purifying respirators when there is potential for exposure to Hydrogen Peroxide. All personnel shall wear Polyethylene coated Tyvek coveralls with attached hood, and either Neoprene or Nitrile Butyl Rubber (NBR) gloves with latex inner gloves.

Clothing shall be immediately removed if a splash occurs and should then be rinsed with copious amount of water to reduce fire hazards caused by spontaneous combustion. An eye wash bottle or portable eye wash station, as well as copious amounts of clean potable water for dilution, washing or rinsing, shall be kept on site while conducting operations. In the event of a splash to the eyes, personnel shall immediately use copious amounts of water to irrigate the eyes for at least ten (10) minutes. They should then report directly to the Emergency Department of the nearest hospital.

Never allow Peroxide (H_2O_2) to come into contact with combustible material (paper, rags, leather gloves or boots, etc.). This poses an extremely high fire hazard from spontaneous combustion. A multi-purpose dry-chemical fire extinguisher shall also be on-site during operations. When using Peroxide from drums, personnel should never add anything into the drum including unused product. All drums should be capped upon completion of dispensing operations. Caps should never be left off for any period of time.

If drums or product tanks are noted to be hissing, bubbling or steam is coming from them, the peroxide has been contaminated and the risk of container explosion or rupture is a very strong possibility without immediate mitigation.

If used in stripper towers for cleaning, personnel should use product pumps for addition to the tower. Personnel shall not, under any circumstances, climb ladders to add product to the tops of towers. Never use copper, brass or steel as a storage container or in delivery valves or lines.

Contact a Regional Health & Safety Manager if you have any questions regarding Peroxide safety.

HYDROCHLORIC ACID SAFETY

Hydrochloric (Muriatic) acid is an extremely strong corrosive with a variety of uses including cleaning. All personnel should be aware that this material and especially its by-products may pose the possibility of being extremely hazardous.

All personnel should wear full-face air purifying respirators when there is a potential to be exposed to using Hydrochloric acid. All personnel shall wear Polyethylene coated Tyvek coveralls with attached hoods, and either Neoprene or Nitrile Butyl Rubber (NBR) gloves.

Clothing shall be immediately removed if a splash occurs and should be rinsed with copious amounts of water to reduce the possibility of severe burns. An eye wash bottle or portable eye wash station, as well as copious amounts of clean, potable water for dilution, washing or rinsing shall be kept on site while conducting operations. In the event of a splash to the eyes, personnel shall immediately-use copious amounts of water to irrigate the eye for at least ten (10) minutes. They should then report directly to the Emergency Department of the nearest hospital.

When using Hydrochloric Acid (HCL) from drums, personnel should never add anything into the drum, including unused product. All drums should never be left off for any period of time. If HCL is used to stripper towers for cleaning, personnel shall not, under any circumstances, climb ladders to add product to the tops of towers.

The addition of Hydrochloric acid may cause Hydrogen Sulfide (H_2S) to form. Hydrogen Sulfide is an extremely toxic, potentially lethal, gas with a characteristic "rotten egg" odor, which has been identified by the USEPA as an acutely toxic substance. It has an Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) of 10 ppm. This is considered very low for any substance. The immediate Danger of Life and Health level for this substance is 300 ppm.

It should be pointed out that air-purifying respirators are completely' ineffective against Hydrogen Sulfide (H_2S). Any upgrade from tower cleaning Level C protection, due to H_2S exposure levels above 10 ppm, will go directly to Level B. In the event levels exceed 10 ppm on the H_2S colormetric tube, please exit the area and contact the Regional Health & Safety Manager or the Project Manager immediately prior to donning Level B protection.

To ensure that personnel are not exposed while conducting this operation. colormetric detector (Draeger) tubes will be used to measure H_2S concentration in ambient air. This is to be done immediately adjacent to any opening in the tower before manways or manheads are completely opened, or any connections to the tower are made.

APPENDIX H

AIR STRIPPER TOWER INSTALLATIONS

AIR STRIPPER TOWER INSTALLATIONS

Determining the location of air stripper towers requires careful planning and consideration. Underground and overhead obstructions, nearby buildings, and the discharge gases from the tower must be considered before making a final decision on the tower location.

All personnel involved in an air stripper tower installation must wear, at minimum, coveralls/work uniform, safety shoes, hardhat, safety glasses and safety vest. The main body of the HASP may require other protective gear.

The tower should be minimum of twenty (20) feet away from all overhead electrical lines.

The discharge gases from the tower should not impact occupied buildings or dwellings. In particular, the discharge gases should not impact any inlet air ducts for HVAC systems, or open windows of dwellings. The discharge gases should also be clear of any sources of ignition.

Before excavating for any subsurface influent or effluent lines, the local "DigSafe" number and water and sewer companies should be called to determine the locations of any water, sewer, gas, telephone or electrical lines. All excavations shall be left open until the leak integrity of the entire system is evaluated and shown to be intact. All excavations shall be properly barricaded or guarded with cones and caution tape while open.

TOWER INSTALLATION GUIDELINES

The installation of an air stripper tower must be performed carefully to prevent injuries to field personnel. All personnel must comply with the following procedures.

The tower must be placed on a concrete pad that rests on stable compacted, and level soil. The pad must be at least 4 inches thick, and at least twice as long and twice as wide as the tower at its (the tower's) widest point.

The tower shall be raised with a bucket truck similar to those used by highway crews to erect signs. All personnel in the bucket shall be secured by a ladder belt to the inside of the bucket. A minimum clearance of twenty (20) feet way from electrical lines shall be maintained at all times. Three steel or metal guy wires shall be attached and secured to the top of the tower before it is raised.

All bolts shall be tightened and the guy wires attached to ground cables before the bucket truck releases the tower. The tower shall be inspected to ensure it is perpendicular and level bef ore the release is made. All ground personnel shall be removed from the immediate area prior to the tower release.

All electrical equipment, such as blowers, and power cables in and around wells or structures that are suspected of containing chemical contamination, must be intrinsically safe and equipped with a three-wire ground lead.

Explosion-proof equipment shall be used according to the requirements of the National Fire Protection Association **(NFPA)** National Standard Electrical Code of 1987. Since each installation will need to be evaluated on an individual basis to determine if explosion-proof equipment needs to be installed, the Code should be referred to before installation is attempted.

The Code specifies minimum safe distance for each chemical contaminant, listed within each Class, Division, and Group. If receptacle outlets, or other electrical hookups, are installed within the confines of this minimum safe distance, then explosion- proof equipment is mandatory.

APPENDIX I

EXCAVATION AND TRENCHING/ TANK REMOVALS

EXCAVATION / TRENCHING

PURPOSE

The intent of these requirements is to help reduce the risk of injury to all persons working in or around trenching and excavation operations. These requirements are in accordance with OSHA Subpart P29 CFR 1926.65 - 653.

DEFINITIONS

According to the OSHA construction safety and health standards, 29 CFR 1926, the following is defined:

Trench: A narrow excavation in which the depth is greater than the width, although the width is not greater than 15 feet.

Excavation: Any mechanically made cavity or depression in the earth's surface. This can include excavations for anything from cellars to highways.

GENERAL REQUIREMENTS

OSHA requires in all excavations, employees exposed to danger from moving ground shall be protected by a shoring system, sloping of the ground, or some other equivalent means.

In .addition, OSHA requires that all trenches over 5 feet deep in either hard and compact or soft and unstable soil be sloped, shored, sheeted, braces or otherwise supported and that trenches less than 5 feet in depth also be effectively protected when hazardous ground movement may be expected.

One method of ensuring the safety and health or workers in a trench or excavation is to slope the sides of the cut to the "angle or repose," the greatest angle above the horizontal plane at which a material will lie without sliding. The angle of repose varies with different kinds of soil and must be determined on each individual project. When an excavation has water conditions, silty material or loose boulders, or when it is being dug in areas where erosion, deep frost, or slide planes are apparent, the angle of repose must be flattened.

SPECIFIC REQUIREMENTS

a. Prior to excavation, all utility companies should be contacted and underground utilities located to reduce accidental damage to gas, sewer, electrical, telephone lines, etc. In areas where available, the utility "Dig Safe" hot line, located in front of the local telephone book, should be contacted.

b. To reduce the risk of collapse, all trenches more than 5 feet deep, and those less than 5 feet deep in unstable soil, should be provided with adequate shoring or the trench should be sloped back to the angle of repose.

c. To reduce the risk of injury from materials falling into excavations, all excavated soils or other materials should be stored 2 feet or more from the edge of the excavation.

d. To reduce the risk of trips/falls, trenches more than 4 feet deep should have ladders or steps located so as to require no more than 25 feet of lateral base travel and extend a minimum of 36 inches above the landing and secured against movement.

e. To reduce the risk of collapse from adverse weather conditions, diversion ditches, dikes, or other suitable means should be used to prevent surface water from entering an excavation or trench.

f. To help prevent unauthorized traffic and personnel from entering trenching and excavation sites, cones with barricades and flagging tape should be used to cordon off the immediate area.

TANK REMOVAL

The following is an outline of safety procedures that should be used during tank excavation

1. Logistics

Gather Tank Data
- Age, size, type
- Substance stored
- Tightness test results (evidence of failure)

Gather Site Information
- Blue Prints
- Depth of installation
- Location of underground utilities
- Proximity to houses, drinking water supplies, grains, basements, etc.

Gather Contractor Information
- Contractor name
- Reputation
- Planned removal procedures (inerting or purging)
- Plans for soil removal
- Plans for water treatment during excavation

2. Safety Precautions/Prepare a Safe Work Place

Eliminate ALL sources of ignition
- Ban smoking in the area
- Shut down all open flames and spark producing equipment within the vapor hazard area
- Remove electrical and internal combustion equipment unless designed to be "explosion proof"
- Use only non-sparking tools when exposing tank fittings or when in a high vapor hazard area
- Control static electricity by grounding or bonding hoses and tanks or by eliminating the static producing source altogether

Set up site control with flagging tape, barricades, cones.

Ensure all utility, gas, water, and sewer lines on site are marked and avoided during excavation.

Check meteorological conditions. If it is a still day and air is not moving, vapors may accumulate at ground level. Consider delaying the tank removal or take additional precautions against vapor hazards such as ventilation with "explosion proof" fans.

Make sure all Personnel on-site wear:
- hard hat
- steel toe safety shoes
- orange safety vests
- safety glasses

Ensure personnel have Level C personal protection equipment if upgrade is necessary.

3. Excavation Precautions

- Underground utilities must be clearly marked
- Trenches/excavations greater than 5 feet deep must be properly supported to reduce risk of collapse
- Ensure excavated soil or other materials are stockpiled at least two feet from the edge of the excavation
- Use diversion ditches, dikes, or other suitable means to prevent surface water from entering the excavation.
- If the excavation has to be left open over night, properly secure the site with flagging tape, cones, and barricades with flashing beacons

4. Preparing the Tanks

Make sure the contractor takes precautions to avoid any spillage (a bucket can collect any spillage)
When removing residues, make sure explosion proof or air driven pumps are used
Pump motors and suction hoses must be bonded to the tank or grounded
If a vacuum truck is used for product removal, ensure the area of operation for the truck is vapor free; the vacuum pump exhaust gases must be discharged a minimum of 12 feet above grade and at least 3 feet above adjacent roof lines.

5. Eliminating Flammable Vapors

A. Purging - Diluting flammable vapors with air
- If a diffuses air blower is used, ensure piping used is properly bonded to prevent static build-up
- To avoid rupturing the tank, ensure air pressure does not exceed 5 psi
- If an evacuating-type air mover is used, ensure the air mover is bonded to prevent generation
- and discharge of static electricity
- Ensure fumes from purging are vented 12 feet above grade and 3 feet above adjacent roof lines
- With an 0,/LEL meter, check conditions at ground level to ensure proper ventilation
- The tank should not be removed until LEL readings are below 20%. If not 20%, the
- contractor has to keep purging
- Purging is a temporary procedure. Product trapped in bottom sludge and wall scale regenerates flammable vapors. Test % LEL frequently inside tank, excavation, below grade areas and at ground level, especially near the vent.

B. Inerting - Replace oxygen with an inert gas

- Carbon dioxide gas/dry ice
- Recommended amount 20 lbs per 1000 gallon of tank capacity Nitrogen gas is lighter than air, must be introduced at low point in tank
- Fumes must also be vented 12 feet above grade and 3 feet above adjacent roof lines
- O_2 meter must be used to determine effectiveness of inerting
- O_2 readings of 1-10% is adequate
- Take readings at 3 levels within the tank

6. Think Safety While on Site

- Make sure the contractor has the proper monitoring equipment
- Make sure the contractor routinely monitors f or flammable vapors and 0, levels
- Make sure that when the tank is being removed, personnel stay away from the end of the tank
- Keep personnel out of the excavation
- Make sure the tank- is properly secured on the ground or trailer
- Properly secure the site from pedestrians, vehicles, etc.

APPENDIX J

ELECTRICAL SAFETY

ELECTRICAL SAFETY

GENERAL

Electrical equipment in the field poses a significant safety hazard. This is especially true in environments that may contain flammable vapors. For this reason, all electrical equipment and power cables in and around wells or structures that are suspected of containing chemical contamination, must be intrinsically safe. Some environments will require explosion-proof equipment instead of intrinsically safe equipment.

Explosion-proof equipment shall be used according to the requirements of the National Fire Protection Association (NFPA) National Standard Electrical Code. The Code should be referred to before each installation is attempted because each on will need to be evaluated on an individual basis to determine if explosion-proof equipment needs to be installed. The Code specifies minimum safe distances for each chemical contaminant, listed with each Class, Division and Group. If receptacle outlets or other electrical hook- ups are installed within the confines of this minimum safe distance, then explosion-proof equipment - is mandatory. All installations must be inspected by a licensed electrical inspector before power is supplied to any equipment.

If the electrical installation is provided by the client, please advise the client of these requirements. If the client does not install the GFCI breakers or receptacle outlets is accordance with the requirements of this policy, we will be forced to hire someone and charge the client for the retrofit.

All power must be turned off at the main switch and the appropriate lock-outs and tag-outs shall be put in place before any repair work is done on the installation or system.

ELECTRICAL EXTENSION CORDS

All electrical cords used on any site shall be the three-pronged grounded variety. The integrity of the cord and exterior covering shall be inspected and maintained at all times. Any cord which has cuts or frayed areas in the outer covering shall be discarded and replaced. The use of three-to-two prong adapters shall be prohibited at all times regardless of reason. Disabling the grounding prong by cutting it off or removing it from the make receptacle end shall be prohibited at all times.

GROUND FAULT CIRCUIT INTERRUPTERS

The GFCI is a fast-acting circuit breaker which senses small imbalances in the circuit caused by current leakage to ground, and within a fraction of a second, shuts off the electrical power. The GFCI will not protect the employee for line-to-line contact hazards (such as a person holding two "hot" wires, or a hot and neutral wire, in each hand). The GFCI will provide protection from the 'most

common form of electrical shock hazard - the ground fault. It also provides protection against fires, overheating, and the destruction of insulation on wires subject to power-to-ground conditions.

GFCI's can be used successfully to reduce electrical hazards on construction sites. Tripping (interruption of current flow) is sometimes caused by wet connectors and tools. The exposure of connectors and tools to excessive moisture shall be limited by using watertight or sealable connectors. Providing more GFCI'S, or shorter circuits can prevent tripping caused by the cumulative leakage from several tools, or by leakage from extremely. long circuits or cable runs.

PORTABLE ELECTRICAL HAND TOOLS

The use of portable electrical hand tools on any site shall be accompanied by a portable GFCI regardless of whether the electrical power for these tools comes from a source of permanent power (an electrical outlet), or a source of temporarily power (a generator). Additional extension cords may be used between the **GFCI** and the portable hand tool. This policy shall be in effect for all hand tools including those that are double insulated.

PORTABLE ELECTRICAL GENERATORS

The use of portable generators on any site shall be accompanied by a portable GFCI. This includes the use of a portable generator for operating subsurface pumping equipment on a temporary basis. When permanent electrical power is installed on the site, and the power to the subsurface pumping equipment is disabled from the portable source of power (the generator), GFCIs are no longer required.

The generator itself must be actively grounded at all times by installing a ground rod made of copper or brass at least eighteen (18) inches into ground surface and connecting this rod to the frame of the generator with a twelve (101) gauge or greater connecting wire. This policy covers all generators including those that are double insulted. These requirements for portable generators must be adhered to regardless of the generator being owned by MET or rented from an outside source.

CONDUCTIVE PIPE HEATING EQUIPMENT

Any circuits which operate pipe heating, sometimes known as heat tape, must be GFCI protected. Any MET operation which had conductive pipe heaters (heat tape) in place must also have GFCIs in place. These GFCIs may be those which are manufactured as part of 125V, single-phase, 15A or 20A receptacle outlet, or may be installed as GFCI circuit breakers covering more than one receptacle outlet, depending on amperage lcd, if feasible. Extreme care should bc used to avoid overloading a single breaker with multiple outlets off that breaker.

APPENDIX K

OSHA

IMMEDIATE OSHA INSPECTION STEPS

Identify the Inspector.

a. Ask to see credentials
b. Write down the relevant information, including the inspector's name, agency affiliation, address, telephone number and the statutory authority under which the inspection is being conducted.
c. if inspection occurs at a project site, indicate that documentation of medical monitoring and for 40 hours training certification is needed should the inspector want to venture into the actual work area.

Notify the Project Manager **Immediately.**

Take notes on:

a. What is said
b. What is seen
c. Who spoke to whom
d. Any sample of copies taken
e. Any corrective actions done in the inspector's presence
f. Any activity, including where, when, who, and what
g. Any other occurrence, even if minor

When in doubt on any questions, do not bluff an answer. Ask the inspector to put the questions in writing. Never lie or fabricate an answer.

If inspection occurs on site, carefully review the HASP with the Inspector if asked to do so.

If inspection occurs at an off ice, have accident reports, OSHA 200 logs ready at all times for inspection. Always make sure the OSHA poster is visible.

Determine the scope of the inspection: Ask the OSHA inspector what area of the company activity are of interest and the reason for the inspection. Discover what has triggered the inspection. if complaints initiated the inspection, find out specifically what they were.

APPENDIX L

CONTINGENCY PLANS

CONTINGENCY PLANS

1. CONTINGENCY PLAN FOR EVACUATION

Should evacuation be deemed necessary, the Site Safety officer will notify the Project Supervisor and an appropriate signal will be given for evacuation. The Site Safety Officer shall insure that the evacuation is carried out in a calm, controlled fashion. All personnel shall exit the site and shall reassemble in a predesignated area. Evacuation routes will be dependent upon wind direction, severity, and type of incident. The Site Safety Officer shall insure that all personnel are accounted for. if any personnel can not be accounted for, the Site Safety Officer will alert emergency services personnel.

Site Safety Officer will contact the Project, and/or Operations Manager as soon as possible after evacuation procedures are instituted.

2. CONTINGENCY PLAN FOR MEDICAL EMERGENCY

The following procedures should be instituted IMMEDIATELY in the event of a medical emergency involving illness or injury to any personnel while on site:

The site should be shut down and immediately secured. The area in which the injury or illness occurred should be considered off-limits until the cause of injury or illness is identified. In the event of a non-trauma related incident, instantaneous real-time air monitoring by FID or PID should be acquired to determine if the incident was -caused by potential exposure to hazardous materials. Monitoring should be done both up, and downwind of the incident site.

Assess the victims condition for the nature of injury or illness. Pay close attention to the level of consciousness and any cardiac or respiratory involvement. If the victim appears to be critically injured (i.e. unconsciousness, cardiac or respiratory abnormalities, stroke, seizures, etc.) support the victims vital functions. Administer **CPR** if needed. Notify police, fire department, and EMS units immediately. The victim should be decontaminated as soon as possible after removal from the contaminated environment. This should be done in non-contaminated work space well away from the source of the problem.

If the victim appears to be critically injured, he/she should be transported to the nearest Emergency Room by an EMS unit staffed by qualified personnel. If the victim's condition appears to be non-critical, and is anything

more severe than minor cuts or bruises, he/she should be transported to the nearest hospital. Under no circumstances should the victim be transported to the hospital in anything other than an EMS unit staffed by qualified personnel. If the victim has sustained extremely minor injuries or a minor illness, it will be left to the discretion of the Site Safety Officer whether or not the victim should be treated on-site. If the Site Safety Officer determines that the victim may not return to work, the victim should be decontaminated, relieved of duty for the day, and returned to the office if during normal working hours. An occupational physician from the current medical surveillance contractor, or the victim's family physician should be contacted.

Contact the Project Manager and/or the Operations Manager as soon as possible after attending to the needs of the victim. The incident should be reported both in the project file, and on the PRECISION ENVIRONMENTAL SERVICES Accident/Incident Report found in this document.

3. CONTINGENCY PLAN FOR CONTAMINATION EMERGENCY

The following procedures should be instituted immediately in the event of contamination to one of the employees by Hazardous Materials.

If Emergency Rescue is needed to remove the victim from the contaminated area, notify, Police, Fire Department and EMS Units immediately. Absolutely no Emergency Rescue is to be attempted without having a trained back-up present. If the victim is able to move under their own power, escort them to a non-contaminated area as soon as possible.

The site should be shut down and immediately secured. The area in which the contamination occurred should be considered off-limits until the arrival of trained personnel who are properly equipped with the appropriate personal protective equipment and monitoring instrumentation.

Assess the victim's condition for the nature of injury or contamination. Pay close attention to the level of consciousness and any cardiac or respiratory involvement. Use special care to insure that you do not become contaminated as well. If any abnormal symptoms are present, notify Police, Fire Department and EMS units immediately.

Attempt to identify the exact type of material involved. Use extreme caution if the danger of being contaminated exists. The victim should be decontaminated as soon as possible after removal from the contaminated environment. This should be done in non-contaminated area well away from the source of the problem. Extreme care should be used to avoid cross-contamination. The victim should be washed by water spray or safety shower. Contaminated protective

clothing should be removed after washing. The victim should not be transported until decontamination is performed to the degree that medical personnel will not be subjected to cross-contamination.

If the victim appears to be critically injured (i.e. unconsciousness, cardiac or respiratory abnormalities, seizures, etc.), support the victims vital functions. Administer CPR if needed. If the victim appears to be without injury, the victim should be decontaminated and then debriefed to determine any causative factors as to why the event occurred.

Contact the Project Manager, Health & Safety Manager as soon as possible after attending to the needs of the victim. The incidents should be documented both in the project file and on the Accident/Incident Report form.

4. CONTINGENCY PLAN FOR FIRE EMERGENCY

The following procedures should be instituted immediately in the event of a fire on-site.

The site should be shut down and immediately secured. Small fires on-site may be actively attacked for control and extinguishments. All non-essential site personnel should be evacuated from the site to a safe, secure area. Notify the Fire Department immediately.

Contact the Project Manager, Health & Safety Manager as soon as possible. The incident should be documented both in the project file and on the Accident/Incident Report form.

5. CONTINGENCY PLAN FOR SPILL OR AIR RELEASE

The following procedures should be instituted immediately in the event of a spill or air release of a hazardous material on-site.

The site should be shut down and immediately secured. The area in which the spill or release occurred should be considered off-limits until the cause can be determined and site safety can be evaluated. All non-essential site personnel should be evacuated from the site to a safe, secure area. The spilled or released product should be immediately identified and appropriate measures such as dikes or berms constructed to halt and contain the flow. If the spill extends into waterways, the National Response Center should be notified immediately. Spill booms should be put in place in an attempt to prevent downstream contamination.

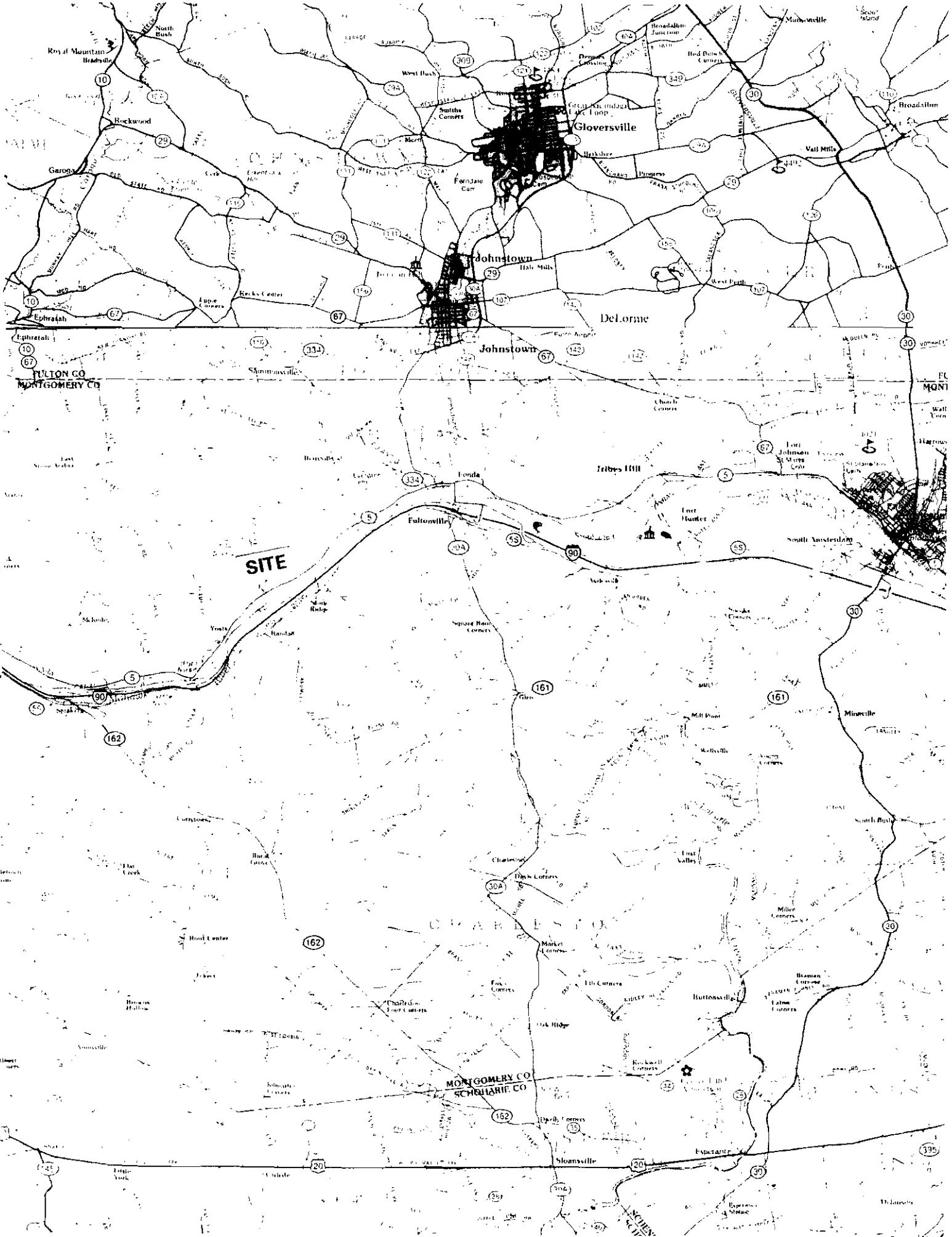
Real-time air monitoring with ionization and combustible gas indicators should be started. Monitoring should be done both upwind and downwind of the spill site or release point. An evaluation of upgrades in personnel protective equipment should be made based upon the results of the air monitoring. If the material is unknown, Level B protection is mandatory. Samples of the material should be acquired to facilitate identification of the material. If the results of the monitoring show that the levels of contaminants

exceed IDLH values, the site should be immediately evacuated and the appropriate Federal, State, County and Local regulatory authorities and emergency response personnel notified. Notify the Police and Fire Department IMMEDIATELY if contaminants are found to have migrated off-site into populated areas, a large spill or flammable products is involved, or, the material is considered acutely toxic or exceeding published IDLH values.

The procedures as listed above should be instituted if there is a discovery of an acutely toxic material in much larger quantities than expected. In this case, all employees on the site should be cleared to a safe area and briefed. The spill or release should be reported to the appropriate Federal, State, County and Local regulatory authorities per the reporting standards of those regulatory agencies. Contact the Project Manager, Safety Director, as soon as possible. The incident should be documented both in the project file and on the Accident/Incident Report form.

APPENDIX M

MAPS


Gloversville
Johnstown
DeLorme
Johnstown
FULTON CO
MONTGOMERY CO
Fonda
Fultonville
SITE
Tribes Hill
Amsterdam
Minaville
MONTGOMERY CO
SCHOHARIE CO
Sloansville

Citizen Participation Plan

A Citizen Participation Plan will be included in this project to assure communication and information availability to all members of the public. It will also provide opportunities for interested parties to obtain information on project goals, initiatives and status.

The Plan will be a clear and concise user-friendly document. Since this Brownfields investigation involves many technical issues this Plan and a thorough Citizen Participation program will be the conduit where these issues will be clearly explained to the Public. The Plan will also be a document requiring updates throughout the project in order to reflect changes in public opinion, technical alternatives, or project schedule.

The proposed Plan is outlined below.

1. GENERAL INFORMATION.

1.1 **Project Information and Background Summary**. *General project information and background on the Hanson Fire Training Center Site and the Brownfields program will be clearly presented.*

1.2 **Workscope and Objectives**. *Concise description of the proposed project, including methods of investigation, soil and water sampling, laboratory work, and project reports. Also described will be the specific and overall objectives of the investigation at this Site.*

1.3 **Project Schedule**. *Presentation of the overall project schedule in listed and chart format. Included will be the schedule of major decision points.*

1.4 **Local Document Repository**. *Description of the local depository for project documents for public review during and after normal working hours.*

1.5 **Contact List of Affected and Interested Parties**. *This will include appropriate Town of Mohawk and Montgomery County representatives, all property owners adjacent to the Site as well as within a 500' radius, all local organizations and groups with potential interest in the project, local news media, and people who may have information about the property who can assist in the investigation program.*

1.6 **Contact List of Municipal and DEC representatives**. *List of NYS Dept. of Environmental Conservation central and regional representatives involved with the project as well as municipal citizens participation contacts.*

2. PROJECT ISSUES

2.1 **Issues of Interest to the Public**. *Description of all known issues of interest to the Public about the Hanson Site and the investigation program.*

2.2 **Information Requirements of All Parties**. *Description of all known information needs of the community, Town of Mohawk, County of Montgomery and DEC.*

3. CITIZEN PARTICIPATION ACTIVITIES

3.1 **Advisory Notices.** *Listing and description of proposed notifications during the course of the project. This will include mailings to people on the contact lists regarding: review of the work plan, the Site Investigation/Remedial Alternatives Report and the Proposed Remedial Action Plan, as well as project progress, DEC record of decision, and meetings schedule.*

3.2 **Information Meetings**. *Coordination of informational meeting(s) as deemed necessary to review the proposed project.*

3.3 **Public Comments**. *Solicit, review and respond to public comments before the remedial alternative is selected. A 45 day public comment period will be provided prior to selection of the remedial alternative.*

4. REPORTS AND DOCUMENTATION

4.1 **Reporting requirements**. *The proposed Work Plan, the Site Investigation/Remedial Alternatives Report and the proposed Remedial Action Plan will be made available to the local repositories.*

4.2 **Photographic representation**. *Typical photographs will be available for review at the Information Meeting(s).*

4.3 **Videographic representation.** *A video will be provided if necessary of past similar work or completed work at the Hanson Site. This may be helpful for Information Meetings.*

Fee Schedule

PRECISION
ENVIRONMENTAL SERVICES, INC.

2144 SARATOGA AVENUE
BALLSTON SPA, NY 12020
TEL: 518.885.4399
FAX: 518.885.4416

FEE SCHEDULE

(*Effective*) December, 1994

The schedule of fees and expenses for Precision Environmental Services (PES) is presented below. PES reserves the right to modify the schedule, but changes will not apply to work in progress without approval of the client.

STAFF CATEGORY	HOURLY FEES/UNIT
Professional Engineer (P.E.)	$75.00/hour
Senior Geologist/Hydrogeologist	$65.00/hour
Geologist/Chemist	$55.00/hour
Project Manager	$50.00/hour
Remediation Specialist	$45.00/hour
Field/Sampling Technician	$35.00/hour
Equipment Operator	$25.00/hour
Surveyor/CAD Operator/Draftsperson	$35.00/hour
Word Processor/PC Operator (Clerical)	$25.00/hour

*Overtime rates will be charged at 1.5 times the normal hourly rate. Overtime rates apply on any weekday subsequent to the performance of eight hours of regular work, and all day Saturday and Sunday. Double time rates will apply on Holidays.

INSTRUMENTATION	RENTAL RATE/UNIT
Photoionization Detector (PID)	$75.00/day
Flame Ionization Detector (FID)	$100.00/day
Survey Equipment	$35.00/day
Interface Probe	$35.00/day
LEL/O2 Meter	$50.00/day
Metal Detector/Cable Locator	$35.00/day

* *(Weekly Rates available upon request)*

Please Note: Rented equipment (i.e. generators, target saws, compressors, etc.) will be charged at cost plus 15%.

TRANSPORT VEHICLES	RENTAL RATE/UNIT
Light Duty Truck	$0.42/mile
Heavy Duty Truck	$0.60/mile

Please Note: Specialty vehicles (i.e. box van, stake truck, etc.) will be charged at cost plus 15%.

SAMPLING EQUIPMENT AND SUPPLIES	RENTAL RATE/UNIT
Sampling Fee (includes Teflon bailers, distilled water, alconox, bailer cord, etc. - does not include cost of sample containers	$25.00/day
Soil Auger (stainless steel)	$25.00/day
Drager Air Sampling Equipment	$25.00/day

EXPENSES

Expenses, including subcontractors costs, incurred by PES, Inc. which are directly related to projects will be billed at cost plus 15%.

Per diem

Overnight allowance $90.00/person (includes meals and lodging).

REMEDIAL EQUIPMENT

PES maintains a wide array of remedial equipment for application under a rental basis. Costs for specific applications can/will be provided upon request. In addition, PES has portable (mobile) rapid response trailers for short term remedial projects. Rent/lease to own options are also available.

PAYMENT

Invoices are payable on receipt and due within 30 days. Past due accounts are charged at a rate of 1.5 % per month.