



HEALTH AND SAFETY PLAN

Former Donaldson's One Hour Cleaners
110 W. Cecil Street
Neenah, WI 54956

EnviroForensics Project # 200011

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- A Agreement and Acknowledgement Sheet
 Visitor Guidelines and Visitor Agreement Form

- B Field Health and Safety Plan Sign-in Form

- C Preliminary Incident Report (PIR)

- D Air Monitoring Form
 Daily Calibration Form

- E Trench Safety Daily Field Report
 Excavation / Trenching Safety Procedures
 Excavations and Trenching with Underground Utilities

- F Safety Data Sheets

ACRONYMS AND TERMS LIST

ANSI	American National Standards Institute
CFR	Code of Federal Regulations
cis-1,2-DCE	cis-1,2-Dichloroethene
COC	Contaminant of Concern
FID	Flame-Ionization Detector
GFCI	Ground Fault Circuit Interrupters
HASP	Health and Safety Plan
IDLH	Immediately Dangerous to Life and Health
IDM	Investigation-Derived Media
LEL	Lower Explosive Limit
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PCE	Tetrachloroethene
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PIR	Preliminary Incident Report
PPE	Personal Protective Equipment
ppm	parts per million
SDS	Safety Data Sheet
Site	Former Donaldson's One Hour Cleaners
TCE	Trichloroethene
trans-1,2-DCE	trans-1,2-Dichloroethene
TWA	Time-Weighted Average
US EPA	U.S. Environmental Protection Agency
USCG	U.S. Coast Guard
VC	Vinyl Chloride
VOC	Volatile Organic Compound
WDNR	Wisconsin Department of Natural Resources
WP	Work Plan

1.0 INTRODUCTION

This Health and Safety Plan (HASP) has been developed for vapor intrusion investigation activities to be performed by EnviroForensics, LLC (EnviroForensics) at properties surrounding the former Donaldson's One Hour Cleaners, located at 110 W. Cecil Street, Neenah, Winnebago County, Wisconsin (Site). The HASP provides information on the potential hazards and general health and safety guidance for personnel conducting field activities at the Site and vicinity. Available Site characterization data obtained during previous investigations were used as a basis for developing this HASP. The following background, guidance, and regulatory documents were also used.

- *Standard Operating Safety Guides* (US EPA, 1988)
- *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (National Institute for Occupational Safety and Health [NIOSH], Occupational Safety and Health Administration [OSHA], U. S. Coast Guard [USCG], U. S. Environmental Protection Agency [US EPA], 1985)
- Title 29, Code of Federal Regulations (29 CFR)

1.1 Site Description

The Site is located at the east end of former strip of commercial buildings in a mixed commercial and residential setting. The site was operated as a dry cleaner for several years, and a release of the dry cleaning solvent PCE resulted in contamination of soil, groundwater, and soil gas. Remediation activities were completed and the former one-story Site building was demolished in 2020; however, vapor intrusion risk to nearby structures remains.

1.2 Scope

The HASP provides standard safety procedures for Site project personnel conducting investigation tasks as outlined in the work plan. The scope of work would encompass Site investigation activities such as soil, groundwater, indoor air and vapor sampling that have the potential to be impacted with chlorinated solvents.

Field activities will be performed by EnviroForensics and its subcontractors, if applicable. Subcontractors are expected to have their own HASPs in accordance with federal and state laws. Subcontractors' HASPs should be available for inspection upon request. Additionally, upon request prior to initiating field activities, the subcontractors will be required to provide

EnviroForensics with documentation of training, medical surveillance monitoring, respirator fit-test records, and workers compensation insurance for Site personnel.

1.3 Human Exposure Pathways

Impacted soil, groundwater, and sub-slab vapor are the primary potential exposure media for personnel implementing field activities. The potential exposure pathways for the Hazardous Materials that have been detected at the Site include dermal contact, incidental ingestion and inhalation of windblown dust or vapors during field activities. Dermal contact, inhalation, and incidental ingestion pathways will be minimized through a personal hygiene program and the use of respiratory equipment (if necessary) and personal protective equipment (PPE).

2.0 PROJECT SAFETY AUTHORITY

The following personnel are responsible for project health and safety under the HASP:

- Manager, Corporate Health and Safety – Jordan Goff, LPG
- Senior Project Manager – Rob Hoverman, PG
- Project Manager– Brian Kappen, PG
- Site Health and Safety Manager – Brian Kappen, PG
- Project Personnel – Rebecca Brown

Each individual working at the Site will be required to comply with the health and safety procedures established herein, procedures and practices required by applicable law, and general work practices.

2.1 Manager, Corporate Health and Safety

The corporate health and safety manager is responsible for establishing health and safety standards and monitoring the implementation of those standards. The corporate health and safety manager oversees accident/injury investigations and approves modifications to site-specific health and safety practices.

2.2 Senior Project Manager

The Senior Project Manager is responsible for the overall technical and administrative functions of the project. The Senior Project Manager directs and oversees the project team, implementation of the Work Plan (WP) for any given phase, and is ultimately responsible for the compliance with the HASP.

2.3 Project Manager

The project manager has the authority to direct activities at the Site and is responsible for ensuring that EnviroForensics' personnel conducting investigation activities at the Site have received the appropriate training and certification, consistent with this HASP.

2.4 Site Health and Safety Manager

The Site health and safety manager is also responsible for disseminating the information contained in this HASP to personnel working on the Site. The Site health and safety manager has the authority to suspend work any time that he/she determines that this HASP is not being followed. Overall, this individual is responsible for:

- Overall Site safety during field activities;
- Enforcing safe work practices;
- Conducting Site safety meetings;
- Inventorying equipment and supplies;
- Accident investigation and reporting;
- Workers compensation reporting; and
- Regularly reviewing the HASP for accuracy and modifying it, if needed, in consultation with the Corporate Health and Safety Officer.

The Site health and safety manager will review the requirements of the HASP during a mandatory health and safety meeting with project personnel before each phase of field activities. The Field Health and Safety Plan Sign-in Form (**Appendix B**) will be completed during each meeting. Safe work practices, control of potentially hazardous substances, and protection of personnel and property as described in this HASP will be reiterated during the safety meeting.

Staff working on the Site is required to read this HASP and acknowledge that they have read and understand the requirements set forth herein by signing the agreement at the front of this document.

Subcontractors will be required to identify their responsible representatives for project safety by name before the field activities begin; telephone numbers of these individuals for emergency contact will also be provided.

2.5 Project Personnel

Project personnel are responsible for ensuring that they understand how to safely perform their work at the Site. The project personnel will not compromise safe operating procedures at any time. If they are unclear about any aspect of their job, they should immediately ask the site health and safety manager or project manager for clarification. Site personnel are responsible for reporting any unsafe conditions, accidents or near misses to the project manager.

3.0 HAZARD ASSESSMENT AND CONTROL MEASURES

Field personnel are required to control exposure primarily through the use of safe work practices and PPE. Working conditions will be assessed using air monitoring instruments and visual observations. Air monitoring will be conducted during field activities to assess airborne levels of potential contaminants, and the action levels specified in Section 4.0 will be used to control activities in areas where hazardous vapor concentrations may be present.

3.1 Chemical Hazards

EnviroForensics has determined that the contaminants of concern (COCs) for this Site are PCE and its breakdown products: trichloroethene (TCE), cis-1,2-Dichloroethene (cis-1,2-DCE), trans-1,2-Dichloroethene (trans-1,2-DCE), vinyl chloride (VC). Safety Data Sheets (SDSs) are included in (**Appendix F**). Personnel and subcontractors are required to review the SDS to understand the information that they contain. The SDSs are based on 100 percent (pure) chemical; therefore, if the SDS information is adhered to, project personnel will receive the highest level of protection from potential adverse health effects.

The permissible exposure limits (PELs) are defined as the time-weighted average (TWA) concentrations for a nominal eight-hour workday and a 40-hour workweek, to which workers may be repeatedly exposed without adverse effect (29 CFR 1910.1000).

Substance	8-hour time weighted average	Concentration	Maximum Duration
Tetrachloroethene	100 ppm	300 ppm	5 min in any 3 hours
Trichloroethene	100 ppm	300 ppm	5 min in any 2 hours

The immediately dangerous to life and health (IDLH) criteria are defined as the maximum level from which a person could escape within 30 minutes without loss of life or irreversible health effects (*NIOSH Pocket Guide to Chemical Hazards*, U.S. Department of Health and Human Services).

It should be noted that the concentrations of COCs in groundwater have been reported in a weight-to-volume ratio (e.g., µg/L). Consequently, they are not directly comparable to the inhalation exposure route criteria for PEL and IDLH, which are reported on a weight-to-volume ratio in air or volume-to-volume ratio in air.

3.2 Physical Hazards

On the basis of available information, physical hazards associated with the field activities may present a greater risk of injury than the chemical constituents in soil and groundwater at the Site. Activities within the scope of this project shall comply with Wisconsin and federal OSHA construction safety standards, and other applicable laws and regulations.

Specific potential physical hazards of concern include:

- Slip, Trip and Fall
- Pinch hazards associated with Direct Push sampling
- Equipment guards
- Field work in proximity to moving augers
- Traffic hazards associated with work in proximity to vehicular traffic
- Underground Utilities
- Inclement weather (i.e. winter conditions)

3.2.1 Head Trauma

To minimize the potential for head injuries, field personnel will be required to wear NIOSH-approved hard hats during field activities. Such equipment will be required to be worn properly and not altered in any way that would decrease the degree of protection provided.

3.2.2 Foot Trauma

To avoid foot injuries, field personnel will be required to wear steel-toed safety shoes while field activities are being performed and to afford maximum protection, safety shoes must meet American National Standards Institute (ANSI) standards.

3.2.3 Eye Trauma

Field personnel will be required to wear eye protection (safety glasses with side shields) while field activities are being performed, to prevent eye injuries, which might otherwise be caused by contact with chemical or physical agents.

3.2.4 *Noise Exposure*

Field personnel will be required to wear hearing protection (ear plugs or muffs) in high noise areas (noise from heavy equipment) while field activities are being performed. Local noise ordinances will be observed during execution of the field activities. Any elevated noise levels from field activities will be minimized, and limited to normal working hours.

3.2.5 *Heavy Equipment Limitations*

Vehicles and heavy equipment will not exceed a speed limit of 10 miles per hour in the project area and drivers and equipment operators will wear seat belts. Also, no riders will be allowed on heavy equipment or in vehicles unless seats and seat belts are available for their use.

3.2.6 *Buried Utilities and Overhead Power Lines*

Drilling locations will be examined by project personnel and an underground utility locator service, so that utilities and on-Site personnel will be protected during drilling activities. Digger's Hotline will be provided notice at least three days before beginning drilling activities. Protection from overhead power lines will be accomplished by maintaining safe distances, of at least 10 feet.

3.2.7 *Thermal Stress*

Heat / Cold Stress Procedures

Heat stress is a significant potential hazard associated with work task performed and the degree of protective equipment used in hot weather environments. Local weather conditions may produce situations that will require restricted work schedules in order to protect employees. Monitoring for heat stress will follow one (1) or two (2) protocols depending on whether impermeable clothing (Tyvek[®], Saranex[®]) or permeable clothing (cotton) is worn. Impermeable clothing impedes cooling by sweat evaporation and puts workers at higher risk. The following table was generated by the American Conference of Governmental Industrial Hygienists (ACGIH) for worker exposure to heat stress that it is believed nearly workers may be repeatedly exposed without adverse health effects. This table only serves as guideline that should not be exceeded.

Permissible Heat Exposure Applicable to Workers Wearing Permeable Clothing

() Parentheses indicate working in impermeable clothing

Work / Rest Regimen	Workload		
	Light	Moderate	Heavy
Continuous work	86°F (76°F)	80°F (70°F)	77°F (67°F)
75% work – 25% rest, each hour	87°F (77°F)	82°F (72°F)	78°F (68°F)
50% work – 50% rest, each hour	89°F (79°F)	85°F (75°F)	82°F (72°F)
25% work – 75% rest, each hour	90°F (80°F)	88°F (78°F)	86°F (76°F)

Rest periods should be in shade and be sufficient enough to allow workers to recover from the effects of heat stress.

Prevention of Heat Stress

- Provide plenty of fluids to drink. Water is best. Avoid soda or caffeine.
- Work in pairs (Use the buddy system).
- Provide cooling devices such as ice vests, showers, fans, or air conditioning.
- Adjust work schedule to carry out intensive tasks during the coolest part of the day.
- Utilize shaded areas whenever possible.

Recognition and Treatment of Heat Stress

Any personnel who observe any form of heat stress either in themselves or in another worker must report the information to his supervisor or safety officer immediately. An excessive heat stress condition may exist when sustained (more than 5 minutes) oral or ear temperature is greater than 99.5 °F and/ or sustained pulse rate (more than 5 minutes) is above 90 beats per minute.

Conditions of heat stress are as follows from least to greatest:

Heat Rash or Prickly Heat

Cause: Continuous exposure to hot, humid air, aggravated by chafing clothing.

Symptoms: Formation of red pimples around sweat ducts accompanied by intense itching.

Treatment: Remove source of irritation and cool skin with water.

Heat Cramps or Heat Prostration

Cause: Profuse perspiration and inadequate replenishment of water and electrolytes.

Symptoms: Development of pain, cramps, muscle spasms in abdomen.

Treatment: Remove worker from heat exposure, remove restrictive clothing, decrease body temperature, replenish fluids, and rest in cool location.

Heat Exhaustion - SERIOUS

Cause: Overexertion in hot environment and profuse perspiration accompanied by inadequate replenishment of water and electrolytes.

Symptoms: Muscular weakness, staggering gait, nausea, dizziness, shallow breathing.

Treatment: Perform the following while simultaneously making arrangements for transport to medical facility: Remove worker from heat exposure; remove restrictive clothing; Lie worker down in cool place with the feet in an elevated position; Administer fluids; Keep victim conscious and alert; and Transport to hospital.

Heat Stroke – EXTREMELY SERIOUS

Cause: Same as heat exhaustion.

Symptoms: No perspiration, skin is hot and dry, dry mouth, dizziness, nausea.

Treatment: Perform the following while simultaneously making arrangements for transport to medical facility: Remove worker from heat exposure; remove restrictive clothing; Lie worker down in cool place and raise the head and shoulder slightly; Cool the body without chilling; Apply wet cloth to head; Sponge bare skin with cool water; and Transport to hospital.

Cold Stress

Thermal injury due to cold exposure can become a problem for field personnel during the winter months. Systemic cold exposure is referred to as hypothermia. Localized cold exposure is generally labeled as frostbite.

Hypothermia is defined as a decrease in the core body temperature below 96°F. Normal body temperature is maintained by a combination of central (brain) and peripheral (skin and muscle) activity. Interferences with either of these mechanisms can result in hypothermia, even in the absence of what is normally considered “cold” ambient temperature. Hypothermia can be produced at temperature as moderate as 50 °F. Symptoms include: uncontrollable shivering, apathy, listlessness, sleepiness, and unconsciousness.

Frostbite is both a general and medical term given to areas of localized cold injury. Unlike hypothermia, frostbite rarely occurs unless the ambient temperature is less than freezing and usually less than 2°F. Symptoms of frostbite include: sudden blanching or whitening of the skin; waxy or white appearance of the skin; skin is firm to touch; skin is cold, pale, and solid.

Prevention of Cold Stress

Prevention of cold stress can be made by recognizing the symptoms of hypothermia and frostbite. Employees should be provided with enclosed, heated environments at the work site. Dry changes of clothing and warm drinks should also be provided.

Clinical Symptoms of Hypothermia

Body Core Temperature °F	Symptoms
99.6	Normal core body temperature
96.8	Metabolic rate increases, shivering starts
95.0	Maximum shivering
93.2	Victim conscious and responsive
91.4	Severe hypothermia
89.6 – 87.8	Semi-conscious, low blood pressure, dilated pupils, shivering ceases
86.0 – 84.2	Loss of consciousness, muscular rigidity, respiration slows
78.8	Victim unresponsive
64.4	Lowest temperature hypothermia victim can recover from

Workers developing moderate hypothermia (92°F) should not return to work for at least 48 hours.

3.2.8 *Electric Shock*

Electrical equipment to be used during field activities will be suitably grounded and insulated, and ground fault circuit interrupters (GFCI) will be utilized with heavy electrical equipment to reduce the potential for electrical shock.

3.2.9 *Hazardous Weather Conditions*

Project personnel will be made aware of hazardous weather conditions, including extreme heat or cold, and take the precautions described herein to avoid adverse health risks. Project personnel are encouraged to take reasonable, common sense precautions to avoid potential injury associated with possible rain, sleet, snow, ice, lightning, or high wind.

3.2.10 *Slip, Trip, and Fall Hazards*

Areas at the Site may be slippery from mud, water or ice and care should be taken by project personnel to avoid slip, trip and fall hazards. Project personnel will not enter areas that are not adequately lit and additional portable lighting will be provided at the discretion of the Site Health and Safety Manager or the Field Team Leader, if necessary. Workers will not pass through or work in areas of inadequate lighting, in order to prevent physical injury.

3.2.11 *Biological Hazards*

Drugs and alcohol are prohibited from the Site and any worker or oversight personnel suspected of being in an impaired condition, due to drugs or alcohol will be immediately expelled from the Site. Any worker or oversight personnel with a relevant medical condition that requires attention should inform the field team leader of such condition and describe appropriate measures to be taken if the individual should become symptomatic.

Personnel working on-Site should be cognizant of poisonous snakes, spiders, plants, and insects that could potentially be encountered; these hazards should be avoided. Care should be taken in lifting objects under which a poisonous insect or reptile may be residing.

3.2.12 *Drilling and Excavation Hazards*

Severe accidents, if any, will probably be related to the operation of heavy equipment at the Site, particularly during drilling and/or excavation/trenching activities during soil remediation activities. Physical harm can be caused by improper or unsafe use of the drill rig and associated equipment, or faulty or poorly maintained drilling machinery. Examples of unsafe use include not properly stabilizing and leveling the rig, failure to wear a hardhat or failure to don hearing protection. Electrical hazards include shock from lightning, drilling into live utility lines or using improperly grounded electrical hand tools. Physical harm can also be caused by improper or unsafe use of trenching excavation equipment, or faulty or poorly maintained excavation machinery. OSHA regulations will be followed in addition to standard construction safety practices.

3.2.13 *Hazard Identification and Control*

Precautions must be taken to prevent injuries and exposures to the following hazards.

Potential Hazards and Controls

Potential Hazard	Control
Chemical exposure (See an SDS for more specific information on chemical exposure)	<ol style="list-style-type: none"> 1. Stay upwind whenever possible. 2. Minimize contact and contact time with chemical. 3. Avoid walking through suspected areas or anything likely to be contaminated. 4. Do not eat, drink, smoke, or apply cosmetics in exclusion zone. 5. Wear gloves when in contact with contamination. 6. Wear safety glasses. 7. Splash goggles must be worn when working with liquids. 8. Exposure to 50% PEL vapors in breathing zone, sustained for 5 minutes requires upgrade to Level C. 9. Exposure to 100% PEL vapors in breathing zone, sustained for 5 minutes requires upgrade to Level B. 10. Unknown materials, call the Health and Safety Representative. 11. Hazardous materials must be adequately labeled and have SDS available. 12. Use Daily Safety Meeting to record training attendance.
Container management (drums & cylinders)	<ol style="list-style-type: none"> 1. Containers must be clearly labeled for contents 2. Incompatible materials must be separated by 20 ft or physical barrier 3. Avoid storage in high traffic areas 4. Containers must not be damaged, dented, or leaking 5. Containers must be kept securely closed when not in use 6. Cylinders must be securely anchored upright

Potential Hazard	Control
Vehicular Traffic	<ol style="list-style-type: none"> 1. Wear traffic safety vest. 2. Use cones, flags, barricades, and caution tape to define work area. 3. Use vehicle to block work area. 4. Engage police detail for high traffic situations.
Fall Protection	<ol style="list-style-type: none"> 1. Assess the work area to determine potential for falling. 2. Assess the distance of the potential fall. 3. Fall protection must be used for falls greater than 6 feet. 4. Consult safety personnel regarding fall protection and what system to use. 5. Inspect fall protection equipment and anchoring points prior to use.
Confine Space Entry	<ol style="list-style-type: none"> 1. Ensure personnel assigned have met confined space training requirements. 2. Complete confined space entry permit. 3. Conduct pre-entry safety meeting. 4. Use mechanical ventilation. 5. Conduct remote air monitoring prior to entry. 6. Attendant must be present at entry point when entrant is in confined space. 7. Assess for fall hazards and ensure provisions for non-entry rescue have been met. 8. Enter only when safe; conduct continuous air monitoring.
Utility Lines	<ol style="list-style-type: none"> 1. Contact Dig Safe to have utility lines marked prior to excavation, trenching, drilling, or boring. 2. Refer to site drawings or client if on private property for utility locations. 3. Hand dig when within 5 feet of a utility marker.
Inclement weather	<ol style="list-style-type: none"> 1. Cease outdoor work during electrical storms, hail, and other extreme weather conditions. 2. Take cover indoors. 3. Listen to local forecasts for weather watches and warnings. 4. Obey the “30/30” rule.
Noise	<ol style="list-style-type: none"> 1. Wear hearing protection when working near drill rig, jackhammer, cutting saw, compressor, blower, or other heavy equipment. 2. Wear hearing protection when it is necessary to raise your voice above normal speech due to a loud noise. 3. Conduct noise monitoring to verify hearing protection requirements.
Electric Shock	<ol style="list-style-type: none"> 1. Maintain appropriate distance from overhead utilities: <ul style="list-style-type: none"> 10 Feet minimum clearance from power lines 50 kV or less 10 Feet minimum plus 4 inches for every 10 kV over 50 kV 2. Use ground fault interrupters. 3. Use adequate grounding of electrical systems 4. Check equipment for frayed wiring or exposed circuits 5. Perform lockout / tag out procedures. 6. Use three pronged plugs and extension cords. 7. Contact your local utility locating service. 8. Follow code requirements for electrical installations in hazardous locations.
Physical Injury	<ol style="list-style-type: none"> 1. Wear hard hats and safety glasses when on site. 2. Maintain visual contact with equipment operator and wear safety colored vest when heavy equipment is used on site. 3. Avoid loose fitting clothing.

Potential Hazard	Control
	<ol style="list-style-type: none"> 4. Prevent slips, trips, and falls by keeping work area uncluttered. 5. Keep hands away from moving parts. 6. Test emergency cut off switch on equipment every day.
Back injury	<ol style="list-style-type: none"> 1. Use a mechanical lifting device. 2. Plan the lift. 3. Check your route. 4. Bend at the knees. 5. Use the buddy system. 6. Do not twist your body.

Potential Hazard	Control
Heat Stress	<ol style="list-style-type: none"> 1. Increase water intake. 2. Take frequent breaks, or rotate workers, take shorter work shifts. 3. Watch for signs and symptoms of heat exhaustion and fatigue. 4. Avoid the hottest part of the day. Plan work for early morning or evening. 5. Use ice vests when necessary. 6. Rest in cool areas. 7. In the event of heat stroke, cool the victim and initiate first aid. Seek immediate medical attention.
Cold stress	<ol style="list-style-type: none"> 1. Take breaks in heated shelters. 2. Wear warm insulating clothing 3. Drink warm liquids. 4. Be aware of cold stress symptoms such as shivering, numbness, sluggishness, frost bite.
Bites, stings from spiders, insects, snakes	<ol style="list-style-type: none"> 1. Avoid suspected areas such as tall grass, brush, or undergrowth. 2. Use caution moving or lifting objects which could be used as cover. 3. Never reach under or behind objects which could be used as cover. 4. Wear long pants and sleeves. 5. Wear heavy gloves and sturdy leather boots. 6. Use repellent. 7. Check for signs of bites such as redness, swelling, and flu-like symptoms. 8. Snake and spider bites can be medical emergencies – seek treatment immediately.
Poisonous plants	<ol style="list-style-type: none"> 1. Avoid suspected areas such as tall grass, brush, or undergrowth. 2. Wash exposed skin that may come into contact with poison plants. 3. Utilize protective clothing.
Ladders	<ol style="list-style-type: none"> 1. Assess work areas for fall hazards. 2. Only one person at a time on a ladder 3. Inspect ladders for damage. 4. Secure feet of ladders. 5. Pitch ladders at a 4:1 ratio. 6. Secure ladders at the top when possible. 7. Do not use ladders as scaffolding 8. Both rails of a ladder must be supported 9. Extension ladders must extend 3 feet beyond landing platform. 10. Use non conductive ladders.

Potential Hazard	Control
Fire Control	<ol style="list-style-type: none"> 1. Smoke only in designated areas. 2. Keep flammable liquids in approved containers. 3. Keep approved containers closed. 4. Keep work areas free from combustible debris. 5. Isolate ignition sources.
Static Electricity	<p>Do not create static discharge around flammable materials.</p> <ol style="list-style-type: none"> 1. Electrically bond and ground pumps, vessels, tanks, drums, and probes when moving flammable liquids. 2. Do not splash fill containers filled with flammable liquids.
Drilling / Boring Operations	<ol style="list-style-type: none"> 1. Active operations must be actively manned. 2. Personnel must know the location of emergency shut off switch and test it daily for function. 3. Unauthorized personnel must be kept clear of drilling rig. 4. Area of drilling rig must be cordoned off or barricaded.
Remediation	<ol style="list-style-type: none"> 1. Wear appropriate PPE to avoid skin, eye, and inhalation contact with contaminated water and soil. 2. Stand upwind and minimize inhalation exposure. 3. Conduct air monitoring. 4. Utilize engineering controls to control chemical vapors
Rapid response	<ol style="list-style-type: none"> 1. Ensure emergency response activities have been completed prior to beginning rapid response activities. 2. Conduct hazard assessment of project site and communicate findings through a daily safety meeting (tailgate meeting) to EnviroForensics employees and subcontractors prior to beginning rapid response activities. 3. Communicate EnviroForensics health and safety programs to other contractors on site that may be impacted and coordinate field activities with them.
Welding, cutting, brazing	<ol style="list-style-type: none"> 1. Conduct fire safety evaluation (hot work permit). 2. Ensure flammable materials are protected from hot work and sources of ignition. 3. Ensure fire watch / fire extinguisher is on standby.
Cleaning equipment	<ol style="list-style-type: none"> 1. Wear appropriate PPE to avoid skin and eye contact with cleaning materials. 2. Stand upwind to minimize any potential inhalation exposure. 3. Dispose of spent cleaning solutions and rinses accordingly.

4.0 AIR MONITORING

Concentrations of VOCs and other hazardous gases in the work area may be monitored using a photoionization detector (PID), a flame-ionization detector (FID), or a lower explosive limit (LEL) meter (toxic gas meter), if necessary. If necessary, air monitoring in the work area will periodically occur during excavation activities. This air monitoring will take place during excavation activities. The collection of data may become more frequent if conditions indicate increasing levels of contamination. The air monitoring results will be used to assess whether the level of respiratory protection should be modified to include air-purifying respirators or other apparatus. If VOC concentrations in the breathing zone exceed 5 parts per million (ppm), field personnel will be required to wear half- or full-face air-purifying respirators with organic vapor cartridges. (The 5-ppm action level provides a benchmark for determining whether air-purifying respirators should be worn by workers within the Exclusion Area and Contaminant Reduction Area [see Section 8] and whether additional testing is necessary.)

If a VOC concentration of greater than five (5) ppm is detected in the breathing zone during field work, the health and safety manager will be consulted for guidance on appropriate PPE or other precautions to minimize worker exposure. If the PID readings exceed 20 ppm in the work area, field personnel are required to temporarily suspend operations, isolate the vapor emitting sources, and contact the project manager to identify potential corrective measures.

Monitoring instruments will be calibrated daily before use and the results recorded in a field logbook. If VOCs were not detected at the well head and in the breathing zone during air monitoring while sampling, the need for such monitoring during sampling will be re-evaluated and this activity may be terminated, if deemed unnecessary. Air Monitoring and Daily Calibration forms are in **Appendix D**.

5.0 PERSONAL PROTECTIVE EQUIPMENT

Potential hazards from exposure to COCs will be minimized by using the appropriate PPE during field operations. The minimum level of protection selected for the project is Level D, as defined by the US EPA (July 1988). Level D protective equipment is used on Sites that have been investigated and characterized as posing occupationally insignificant skin or respiratory hazards, and for which criteria for the use of air-purifying respirators have been met. Dermal protection will be required when direct contact with potentially impacted materials is possible to prevent unnecessary exposure. The protection level at the project area may be upgraded to Level C, if deemed necessary on the basis of air monitoring results.

The following PPE must be worn during field activities associated with this project:

Level D

- Safety glasses or goggles;
- Hard hat;
- Steel-toed boots; and
- Gloves.

In addition, chemical resistant (Nitrile) gloves are recommended when handling soil or groundwater samples. The following PPE will be readily available for use as necessary based on air monitoring results, as outlined in Section 4.

Level C

- Half- or full-face respirators with organic vapor cartridges and high efficiency particulate filters (see Section 4.0 for use requirements);
- Chemical-resistant (Nitrile) gloves;
- Chemical-resistant boots;
- Tyvek[®] or Saranex[®] outer garment, and
- Level D equipment.

Field personnel assigned to work in a project area where respiratory protection may be necessary will be required to provide evidence of fit-testing for an appropriately-sized respirator, and trained in the use, limitations, care, and maintenance of air-purifying respirators.

6.0 EXPOSURE MONITORING

Select monitoring of high-risk workers (those who are closest to the source of COCs) may be conducted. This approach is based on the argument that the probability of exposure varies directly with the distance from the source. If workers closest to the source are not significantly exposed, then other workers are presumably also not significantly exposed and probably do not need to be monitored. Personal monitoring samples may be collected at the discretion of the health and safety manager in the breathing zone and, if workers are wearing respiratory protective equipment, outside the face-piece. These samples would represent the actual inhalation exposure of workers who are not wearing respiratory protection and the potential exposure of workers who are wearing respirators.

7.0 SITE ACCESS

Access to the Site during field activities will be controlled and unauthorized personnel and visitors shall not be allowed access to the project Exclusion Area (Section 8.0). Only personnel with specific operational duties should be present in the Exclusion Area, when field operations are being conducted. Site control at work locations will be established using barricades, cones, and flagging tape, as needed to prevent unauthorized access to the Exclusion Area during work.

8.0 WORK AREAS

This section provides a brief description of the work areas that will be established for the activities described in this HASP. In addition to the areas described below, an evacuation meeting place will be designated before each operation begins, based on the field activity planned. Work-zone boundaries will be delineated in the field using safety cones, barricades, and flagging tape, as necessary.

8.1 Exclusion Area

An Exclusion Area will be established to control access to the work areas and will extend from a distance of at least 10-feet from the area where potentially-impacted media is being sampled or tested, and at least 25-feet in areas where drill rigs or heavy equipment is in use. The size and shape of the Exclusion Area will be determined based on wind direction, effective Site security, surrounding operations, and surrounding public areas. Level D protection and appropriate training will be required at a minimum for personnel working in the Exclusion Area.

8.2 Contamination Reduction Area

A Contamination Reduction Area will be placed in an area adjacent to and upwind from the Exclusion Area. In this area, personnel and equipment will be decontaminated, as appropriate, after work has been completed.

8.3 Support Area

The Support Area covers areas outside the Exclusion and Contamination Reduction Areas and provides administrative and support functions (command post, first-aid station, rest area) needed to keep the field activities running smoothly. Potable water, portable hand washing area, and restroom facilities for field personnel shall be provided at this location. The entire project area will be considered the Support Area, when field activities are not being conducted.

9.0 DECONTAMINATION PROCEDURES

Decontamination procedures will be performed before leaving the work areas, as part of the system for preventing or reducing the physical transfer of impacted materials from the project area. Physical (removal of contamination by removing PPE, gloves, boots, brushing, vacuuming) and chemical (washing with detergent and/or neutralizing agents) decontamination procedures will be used. Primary decontamination will take place in the Contamination Reduction Area where washtubs filled with soap and water and rinse tubs will be provided to clean reusable equipment and drums will be provided to contain used, disposable PPE. Secondary decontamination will take place at portable hand washing facilities in the Support Area. Site personnel will be required to wash their hands before eating and after work.

Disposable sampling equipment, used PPE, decontamination wash water, and purged groundwater, and other investigation-derived media (IDM) will be placed in properly labeled containers as this media is generated. These materials will be managed as IDM, as discussed in the WP.

Personnel decontamination procedures will be performed in the following sequence:

- If gross contamination is obvious, physically remove contamination by brushing, scraping or other method prior to leaving the Exclusion Area.
- Transfer the equipment to the Contamination Reduction Area for subsequent chemical decontamination or disposal.
- In the Contamination Reduction Area, remove any outer disposable PPE and discard into the appropriate disposal drum.
- In the Contamination Reduction Area, scrub chemical-resistant boots and gloves with detergent and water followed by water rinse.
- In the Contamination Reduction Area, remove respirator and avoid touching face.
- In the Support Area thoroughly wash hands and face.

10.0 SAFE WORK PRACTICES

10.1 General Safety Practices

The field activities will be conducted with the minimum safety practices as noted below:

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of materials is prohibited in any area where the potential for contamination exists.
- Hands must be thoroughly washed when leaving a contaminated or suspected contaminated area before eating, drinking or any other activities.
- Potentially contaminated PPE and equipment will not be removed from the Contaminant Reduction Area until it has been properly decontaminated or containerized.
- Removal of potential contamination from PPE and equipment by blowing, shaking, or any means that may disperse materials into the air is prohibited.
- Personnel working on Site must use the “buddy” system when wearing respiratory protective devices or working in an Exclusion Area. Visual contact must be maintained between “pairs” on-Site and each individual should remain close enough to assist the other in an emergency.
- Personnel will be cautioned to inform each other of subjective symptoms of chemical exposure, such as headache, dizziness, nausea, and irritation of the respiratory tract and heat stress.
- No excessive facial hair that interferes with a satisfactory fit of the face-piece of the respirator to the face will be allowed on personnel required to wear respiratory protective equipment.
- On-Site personnel will be thoroughly briefed about the anticipated hazards, equipment requirements, safety practices, emergency procedures, and communications methods.

- Field personnel will, whenever possible, situate themselves so that they work upwind from any excavation area.
- Field personnel are prohibited from entering confined spaces, trenches, or excavations deeper than four feet unless the entry provisions of 29 CFR 1910.146 are addressed. Open trenches or excavations that are unattended will be guarded, covered, or marked as described in Section 7.0 to restrict entry. The Trench Safety Daily Field Report, Excavation/Trenching Safety Procedures, and Excavations and Trenching with Underground Utility procedures and forms are in **Appendix E**.

The following care should be taken within the workplace to provide continuing safe workplace conditions.

- A multipurpose (A, B, C) portable fire extinguisher and other emergency response equipment shall be located in the immediate vicinity of the work area;
- Field equipment shall be kept in good condition;
- First-aid supplies shall be available in the Support Area; and
- Appropriate work areas designated for support, contamination reduction, and exclusion will be maintained.

10.2 COVID-19 Precautions

Coronavirus Disease 2019 (COVID-19) is a respiratory disease caused by the novel coronavirus SARS-CoV-2. Currently, the COVID-19 outbreak is listed as a pandemic by the World Health Organization (WHO). Additional safe work practices are required in order to prevent the spread of COVID-19 to employees, subcontractors, property owners, residents, and other stakeholders that may visit the site during field activities. These practices are implemented under the direction of the Corporate Health and Safety Manager and are subject to change and/or modification at any time based on current pandemic conditions and relevant guidance or regulation from government agencies.

- An employee or subcontractor is not permitted to perform on-site work if he/she has any symptoms associated with COVID-19, including fever (defined by the CDC as a body temperature of 100.4 degrees and higher), frequent cough, sore throat, chills, loss of smell and/or taste, and shortness of breath.

- Personnel should monitor their health at the start of each day by checking their temperature and assessing for COVID-19 related illness symptoms.
- An employee or subcontractor is not permitted to perform on-site work if he/she has been in close contact with a person who has been diagnosed with COVID-19 within the last 14 days. The employee may return to the site within 14 days of close contact upon receiving a negative COVID-19 test result with no symptoms. A person meets the definition of “close contact” if any of the following are true:
 - Within 6 feet of someone who has COVID-19 for up to a total of 15 minutes;
 - Provided care at home to someone who is sick with COVID-19;
 - Had direct physical contact with the person who has COVID-19;
 - Shared eating or drinking utensils with someone who has COVID-19; and/or
 - Someone with COVID-19 coughed, sneezed, or somehow got respiratory droplets on them.
- Practice proper respiratory etiquette; cover coughs and sneezes with arm or tissue; throw tissue away and wash hands and disinfect surfaces if applicable.
- Minimize the number of site workers needed to complete a task safely and minimize interaction between work teams.
- Maintain proper social distancing, defined by the CDC as a distance of 6 feet or more, between site workers wherever possible.
- Face masks are required whenever the field activities require workers to be less than 6 feet apart, or whenever working inside a building regardless of distancing. Additional PPE, such as gloves, should be donned, as appropriate.
- Per Center for Disease Control (CDC) guidance, frequently and thoroughly (at least 20 seconds with soap and water) wash hands. If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol.
- Personnel will don nitrile gloves prior to entering any residence, and wear the gloves at all times while inside the residence.

- Avoid physical contact with property owners and occupants of buildings. Maintain proper social distancing at all times.
- Avoid shared use of Site equipment and supplies, e.g. EnviroForensics' staff can sign the HASP on behalf of other site workers to avoid having multiple people touch common surfaces.

11.0 EMERGENCY PROCEDURES

Illnesses, injuries, or accidents occurring during the field activities will be reported to the Field Team Leader or Site Health and Safety Manager. Injured personnel must be attended to immediately and medical attention must be obtained for serious injuries, a route to the nearest hospital is included as **Figure 1**. If necessary, the injured will be transported to a hospital. An injury report (**Appendix C**) must be completed to document any illness, injury or accident that occurs during field activities. The Field Team Leader shall consult with the Site Health and Safety Manager or Project Manager for instructions on completing this report. Field activities will be suspended until the cause of the injury has been investigated and the work procedures have been modified, if necessary.

A first-aid kit will be available in the Support Area for treatment of minor injuries, such as cuts or abrasions. In an emergency or a hazardous situation involving explosions, fires or major physical injuries, the individual who observes this condition will immediately give a verbal alarm. Upon hearing the alarm, field personnel will safely de-energize nonessential equipment and evacuate to a suitable upwind location and away from the danger. Emergency contact telephone numbers are shown in **Table 1**. If there is a chemical release to the environment in excess of the reportable quantities, it will be reported to the National Response Center, within 24 hours, in accordance with the applicable law.

12.0 TRAINING

Personnel performing the field activities described in this HASP will have received the initial safety training required by 29 CFR, Part 1910.120. Current refresher training status also will be required for personnel engaged in field activities. Documentation that this training has been completed will be provided to the Site Monitor upon request.

During field activities, daily safety meetings will be held by the Site Health and Safety Manager to review specific health and safety aspects of the scheduled work.

Field personnel responsible for air monitoring will be adequately trained in the use, calibration, and limitations of the field monitoring equipment.

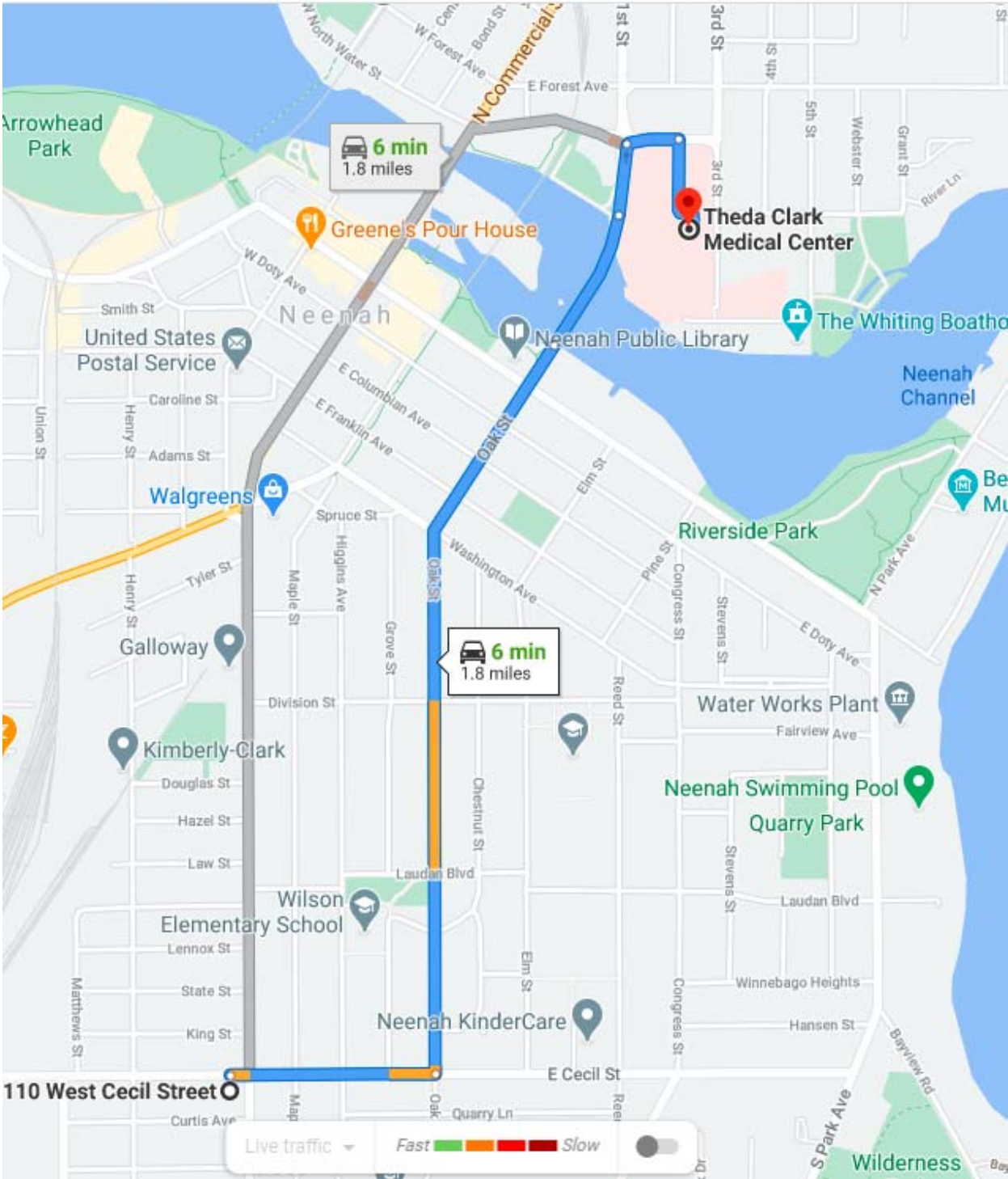
13.0 MEDICAL MONITORING

Personnel scheduled for field activities will have completed medical examinations, meeting the minimum medical surveillance requirements described in 29 CFR, Part 1910.120 and 1910.1000.

TABLE 1
EMERGENCY PHONE NUMBERS

EMERGENCY NAME	TELEPHONE NUMBER
Ambulance	911
Fire	911
Hospital: Theda Clarke Medical Center 200 Theda Clark Medical Plaza Neenah, WI 54956	911 or 920-729-3100
Police	911
Digger's Hotline	811
WDNR Spill Hotline	1-800-943-0003
EnviroForensics Office (Indianapolis, IN)	1-317-972-7870

FIGURE 1
MAP TO HOSPITAL



APPENDIX A

**AGREEMENT AND ACKNOWLEDGEMENT SHEET
VISITOR GUIDELINES
VISITOR AGREEMENT FORM**



AGREEMENT AND ACKNOWLEDGEMENT SHEET

EnviroForensics personnel have the authority to stop field activities at this site if any activity is not performed in accordance with the requirements of this plan. EnviroForensics project personnel, subcontractor personnel, and visitors are required to sign the Agreement and Acknowledgement Sheet prior to conducting field activities at this site.

ENVIROFORENSICS AGREEMENT AND ACKNOWLEDGEMENT STATEMENT

1. I have reviewed and fully understand of this plan and my responsibilities.
2. I am aware that additional, standardized health and safety information is available for me.
3. I agree to abide by the provisions of this health and safety plan.

Name _____	Signature _____
Company _____	Date _____
<hr/>	
Name _____	Signature _____
Company _____	Date _____
<hr/>	
Name _____	Signature _____
Company _____	Date _____
<hr/>	
Name _____	Signature _____
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Visitor Guidelines

EnviroForensics is committed to providing a safe environment on work sites for employees and visitors. In order to accomplish this, the following guidelines must be followed.

Any person not actively participating in the work at the site is regarded as a “visitor” and must follow EnviroForensics visitor guidelines.

- Visitors must be accompanied by an EnviroForensics representative while on-site.
- The site must be marked with signs, placards, and/ or barricades to designate hazardous boundaries. Visitors will not be allowed on any site that is not adequately marked.
- Visitors are not to perform work functions of any type while on site.
- Visitors are not to handle any equipment, tools, and hazardous materials and/ or supplies while on site.
- Visitors are not to enter any hazardous or hot zones or confined space areas while on site.

The site health and safety manager will be responsible for informing visitors of the above conditions and ensuring that conditions are met. The site health and safety manager will also ensure that visitors will not be asked to violate the conditions listed above.

A visitor form must be signed by both the visitor and the site health and safety manager, and placed on file with the project records.



VISITOR AGREEMENT FORM

EnviroForensics is committed to providing a safe working environment for employees. In addition, EnviroForensics will comply with OSHA requirements for employee safety training prior to working on any hazardous site.

The following section is to be filled out by visitor.

Agreement between: _____ and EnviroForensics

NAME (print): _____

As a visitor to an EnviroForensics work site, your signature below indicates your agreement to these restrictions.

- You will be supervised during the visit.
- You may not perform any work functions of any type.
- You may not handle any equipment, tools, hazardous materials, or supplies of any type.
- You may not enter any hazardous areas, hot zones, or confined space areas.

I agree to adhere to the above conditions while on-site as a visitor.

Signature

Date

As site health and safety manager to the above visitor, I agree to above restrictions and agree not to request the visitor to perform activities contrary to those restrictions.

Signature

Date

APPENDIX B

FIELD HEALTH AND SAFETY PLAN SIGN-IN FORM

APPENDIX C

PRELIMINARY INCIDENT REPORT (PIR)



PRELIMINARY INCIDENT REPORT

Type of Incident: _____

Project

Name/Number: _____

Location of Incident (name of Site and specific area where incident occurred):

Date of Incident: _____

Time Incident Occurred: _____

Witnesses to Incident (full names and employers):

Description of Incident (exactly what happened and how it happened):

(Continue on separate sheet if necessary)

Description of Illnesses or Injuries, if any:

Name(s) and Employer of Ill/Injured	Symptoms Experienced/Type of Injury

Did any of the above require medical care by a doctor or other health professional?

No Yes (give number next to name)

Actions taken to mitigate incident:

Actions needed to prevent recurrence of similar incidents:

Attach: Police Report Photos

Signature of Site Health and Safety Manager: _____

Date: _____

This form will be distributed to the Corporate Health and Safety Manager and Project Manager.

APPENDIX D

**AIR MONITORING FORM
DAILY CALIBRATION FORM**

APPENDIX E

TRENCH SAFETY DAILY REPORT EXCAVATION / TRENCHING SAFETY PROCEDURES



Trench Safety Daily Field Report

Date: _____

Project Name: _____

Project Manager: _____

Weather Conditions: _____

I hereby attest that the following conditions existed and that the following items were checked or reviewed during this inspection.

Inspection	YES	NO	NA
Open trenches were inspected			
Were any tension cracks observed along the top of any slope?			
Was any water seepage detected on trench walls or trench bottom?			
Was bracing system installed in accordance with design?			
Type of shoring used?			
Any evidence of caving in trench walls?			
Trench box certified with tabulated data?			
Traffic diverted away from trenching operations with barricades?			
Surface hazards in area accounted for?			
Protective measures for standing water in trench?			
Site personnel wearing reflective vest?			
Atmospheric testing conducted in trenches deeper than 4 feet			
Vibrations from equipment or traffic too close to trenching			

Observations:

Site Investigation Team Leader Signature: _____

Excavation / Trenching Safety Procedures

Excavation and Trenching evaluations must be conducted by a competent person familiar with regulations found in 29 CFR 1926.

- Conduct daily inspections of open excavations prior to entry. Complete trench safety form
- Inspect excavations after any changes in conditions (weather, heavy equipment operations, etc.).
- Employees shall not work in excavations in which there is accumulated water
- Excavations shall not be permitted where such excavation might undermine the base or footing of any foundation, or retaining wall
- Excavations 4 feet or more in depth must have ladders or stairs spaced no more than 25 feet apart so that a person in a trench is always within 25 feet of egress.
- Excavations 4 feet or more in depth require air monitoring.
- Excavations 5 feet or more in depth must be sloped, benched, or shored.
- Spoils and heavy equipment must be stored a minimum of two (2) feet from the edge of the excavation.
- Unattended excavations must be demarcated with signs, barricade, fences, or other appropriate warning system
- Sloping for excavations shall be conducted in accordance with 29 CFR 1926. Subpart P. Appendix B
- Employees shall not work on the face of a benched or sloped excavation at levels above other employees unless employees at lower levels are adequately protected from falling, rolling, sliding material or equipment

Excavations and Trenching with Underground Utilities

- Contact the local utility services and document permit number.
- Contact a company utility representative in questionable areas, elaborate trenching projects, tight or tricky areas, whenever drilling adjacent to a building or structure.
- Use a metal detector to aid in the identification of obstructions.
- Observe utility markers, vent pipes, catch basins, newly paved areas, etc.
- Machine excavates five feet from any underground utility, tank, or utility marker.
- Hand dig in utility five foot tolerance zone until the service is exposed.
- Utilize test pits to establish and quality control markers for sensitive utility locations.
- Any exposed underground utility in an excavation must be protected, supported, or removed to protect workers
- Comply with local and state codes and regulations.
- Utilize experience and trained equipment operators.
- Use appropriate subcontractors and applicable riders.
- Hand dig per customer mandate.

APPENDIX F

SAFETY DATA SHEETS