



**ENVIRONMENTAL
RESTORATION, LLC**

**ERRS REGION 5, CONTRACT EP-S5-09-05
SITE HEALTH AND SAFETY PLAN
SANDIES DRY CLEANER & LAUNDRY SITE**

FINAL SITE HEALTH AND SAFETY PLAN

**EMERGENCY AND RAPID RESPONSE SERVICES
SANDIES DRY CLEANER & LAUNDRY SITE
LITTLE CHUTE, OUTAGAMIE COUNTY, WISCONSIN**

Prepared for

**U.S. Environmental Protection Agency - Region 5
77 West Jackson Blvd.
Chicago, Illinois 60604-3507**

**Contract No.: EP-S5-09-05
Task Order: 0075
Project No: SC5-75**

September 2, 2011



**Environmental Restoration LLC
1666 Fabick Drive
Fenton, MO 63026
www.erllc.com**



**FINAL
SITE HEALTH AND SAFETY PLAN**

**EMERGENCY AND RAPID RESPONSE SERVICES
SANDIES DRY CLEANER & LAUNDRY SITE
LITTLE CHUTE, OUTAGAMIE COUNTY, WISCONSIN**

September 8, 2011

I hereby certify that the enclosed Site Health and Safety Plan, shown and marked in this submittal, has been prepared in accordance with OSHA 29 CFR 1910 and is proposed to be incorporated with Contract No.: EP-S5-09-05 Task Order 0075. This Site Health and Safety Plan is submitted for Government approval.

Plan Preparer:

		708-333-9915
John Behrens	Date	Phone Number
Response Manager		

Plan Approval:

		636-680-2422
Lonnie R. Wright	Date	Phone Number
Vice President, Health and Safety		

Plan Review:

		312-220-7000
Naren Babu	Date	Phone Number
START Project Manager		

Plan Review

		312-220-7000
Elisa Walker	Date	Phone Number
START, Health and Safety		

Accepted as a submittal:

		312-886-4314
Mr. Ramon Mendoza	Date	Phone Number
On Scene Coordinator		
USEPA Region 5		



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GLOSSARY OF ACRONYMS

AHA	Activity Hazard Analysis
APR	Air purifying respirator
ANSI	American National Standards Institute
COC	contaminant of concern
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CPR	Cardiopulmonary Resuscitation
CRZ	Contamination Reduction Zone
CSP	Certified Safety Professional
dBA	decibel A-weighted
DEET	N, N-diethyl-m-toluamide
EMR	experience modification rate
EMT	emergency medical technician
ERRS	Emergency and Rapid Response Services
USEPA	United States Environmental Protection Agency
EZ	Exclusion Zone
HAZWOPER	Hazardous Waste Operation and Emergency Response
HIPO	high loss potential
HMIS	Hazardous Materials Identification System
HTRW	hazardous, toxic and radioactive waste
IDLH	immediately dangerous to life and health
kV	Kilovolt
MCL	Maximum Contaminant Level
µg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
MSDS	Material Safety Data Sheet
NFPA	National Fire Prevention Association
NIOSH	National Institute of Occupational, Safety and Health
NPL	National Priority List
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
PM	Project Manager
POL	petroleum, oils, and lubricants
PPE	personal protective equipment
RIR	recordable incident rate
SCBA	self-contained breathing apparatus
SOP	Standard Operating Procedure
SOW	Scope of Work
START	Superfund Technical Assessment and Response Team
HASP	Site Health and Safety Plan
SHSO	Site Health and Safety Officer
WNV	West Nile Virus



1.0 INTRODUCTION AND SITE ENTRY REQUIREMENTS

This document describes the health and safety guidelines developed for the Sandies Dry Cleaner & Laundry project, to protect on-site personnel, visitors, and the public from physical harm and exposure to hazardous materials or wastes. The procedures and guidelines contained herein were based upon the best available information at the time of the plan's preparation. Specific requirements will be revised when new information is received or conditions change. A written amendment will document all changes made to the plan. Any amendments to this plan will be included in Attachment A. Where appropriate, specific OSHA standards or other guidance will be cited and applied.

All work practices and procedures implemented on site must be designated to minimize worker contact with hazardous materials and to reduce the possibility of physical injury. All work will be performed in accordance with applicable Federal 29 CFR 1910 and 1926 health and safety regulations, including the Federal 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response regulation.

The EPA OSC has the overall responsibility for safety on the site. ER (ERRS) and START will each be responsible for implementing safety for their respective personnel and following their corporate Health and Safety procedures.

1.1 Daily Safety Meetings

Daily safety meetings will be held at the start of each shift to ensure that all personnel understand site conditions and hazards, applicable standard operating procedures, personal protective equipment requirements and to address worker health and safety concerns.

1.2 Site Specific Training and Acknowledgement

The Response Manager shall be responsible for informing all individuals assigned to this project of the contents of this plan and ensuring that each person signs the Site Specific Training Record in Attachment Z. By signing the Site Specific Training Record, individuals acknowledge receipt of this training and that they recognize the potential hazards present on-site and the policies and procedures required to reduce the risk of exposure or adverse effects associated with these hazards.

1.3 Key Personnel

Project/Task Order: Sandies Dry Cleaners & Laundry Site	
Key Personnel	
Names and Titles	Contact Information
Mr. Ramon Mendoza – USEPA Region 5, OSC	312-886-4314 (office) 312-802-1409 (mobile) Mendoza.Ramon@epa.gov
John Behrens - Response Manager	708-473-7124 (Mobile) Email: j.behrens@erllc.com
John Behrens – SHSO	708-473-7124 (Mobile) Email: j.behrens@erllc.com
Lonnie R. Wright – Project HS Manager	636-680-2422 (Office) 636-262-0862 (Mobile) Email: l.wright@erllc.com
Naren Babu– START Project Manager	312-220-7000 (Office) 312-656-7685 (Mobile) Email: NBabu@otie.com
Naren Babu– START Field Lead and Health and Safety	312-220-7000 (Office) 312-656-7685 (Mobile) Email: NBabu@otie.com



Subcontractors	
Company	Scope of Services
TBD	TBD

2.0 ROLES AND RESPONSIBILITIES

2.1 Response Manager (RM): John Behrens

The Response Manager, as the field representative for ER and its subcontractors, has the responsibility for implementing the Site Health and Safety Plan (SHSP). The RM shall manage the project and ensure all health and safety requirements are met. The RM is the Site Health and Safety Officer for this project. Therefore, the RM is responsible for the duties listed in Section 2.2.

2.2 Site Health and Safety Officer (SHSO): John Behrens

The ER Site Health and Safety Officer is assigned to the site on a full-time basis with functional responsibility for assisting the RM with implementing the SHSP.

Specific Duties Include:

- a. Assist RM in providing a safe and healthful work environment.
- b. Supervise confined space entries.
- c. Assist RM in reporting and investigating all incidents.
- d. Ensure proper decontamination of personnel and equipment is accomplished.
- e. Ensure that air monitoring equipment is calibrated and operational.
- f. Conduct personal air monitoring as required.
- g. Perform respirator fit tests, as necessary.
- h. Inventory and inspect PPE prior to personnel entries into exclusion zone.
- i. Prepare summary letter of personal air sampling results.
- j. Ensure proper personal protective equipment is being utilized.
- k. Assist RM in obtaining required personnel training and medical records.
- l. Inspect first aid kits and fire extinguishers.

2.3 START Project Manager (PM):

The START PM is responsible for implementing the project objectives utilizing the personnel assigned. The START PM's primary function is to ensure that the technical, financial, and scheduling objectives are achieved successfully.

2.4 START Field Lead and Health and Safety:

The START Field Lead will be responsible for the daily documentation of all field activities and will perform health and safety monitoring and assist the SHSO to ensure compliance with all health and safety requirements. The START Field Lead will provide the initial technical review of all deliverables and data collection activities. Other responsibilities include those listed below.

- a. START will conduct headspace readings during the excavation activities to determine the extent of excavation needed. Subsequent to the excavation activities, START will collect soil samples from the sidewalls and/or bottom of the excavation which will be analyzed for VOCs.
- b. START will conduct regular routine perimeter air monitoring using a Personal DataRAM (PDR), MultiRAE and/or AreaRAE to measure dust and/or particulates plus VOCs during the excavation and other activities as directed by the OSC.
- c. Conduct air or other media monitoring activities to confirm cleanup goals have been met as directed by the OSC.



2.5 Other:

Any persons who observe a health and safety hazard should immediately report observations/concerns to appropriate key personnel listed in Section 2.1 or 2.2 above.

3.0 SITE BACKGROUND AND SCOPE OF WORK

3.1 Site Background

The former Sandies Dry Cleaner and Laundry facility (site) has been vacant since 2006 and is comprised of a commercial building located at 513 Grand Ave in Little Chute, Outagamie County, Wisconsin. The geographical coordinates for the building are 44.279208 degrees north latitude and 88.315852 degrees west longitude (Figure 1 – Site Location Map).

The site contains a two-story building with concrete flooring on the first floor and an unoccupied apartment on the second floor. The site building footprint is approximately 90 feet by 37.55 feet. The property area, which includes the site building and backyard area, is approximately 100.96 feet by 37.55 feet. The site is located among a mixture of residential and commercial properties. The site is surrounded by Grand Avenue to the east, the village-owned alley behind SDC to the west, Bakers Outlet and W. Lincoln Avenue to the south, and Weenies Still Bar and W Main Street to the north. Both Weenies Still Bar and Bakers Outlet share a brick wall with the site building on the north side and south side, respectively. Both businesses are operating and both have residences on the second floor. The Fox River is approximately 1,000 feet (0.2-miles) from the site on the southeast side and flows northeast to Lake Michigan.

Soil borings collected during EPA's SA in March-April 2011 indicates dark brown fill material with gravel from 0 to 2 feet followed by soft, light brownish red silty clay material. Hard clay was found around 14 feet. Moist soil, due to a shallow aquifer, was found below 4 feet. Groundwater flow is estimated to flow southwest towards the Fox River.

Dave Linskens is the owner of the site and operated Sandies Dry Cleaner until 2002. PCE was used as a dry cleaning solvent during dry cleaning operations. The owner of SDC is planning to use the unoccupied apartment on the second floor of SDC as his future residence.

Scope of Work for ER

ER has been tasked by the EPA to perform the following:

- 1) Mobilization
- 2) Site setup
- 3) Demolish concrete floor in dry cleaning room
- 4) Excavate and dispose of contaminated soil to meet cleanup goals as directed by the OSC.
- 5) Identify, characterize and dispose of other wastes and pollutants found onsite
- 6) Backfill and restore property per OSC instructions
- 7) Seal basement walls as needed in adjacent property
- 8) Install effective vapor control system as appropriate as directed by the OSC.
- 9) Demobilization

START has been tasked by the EPA to perform the following:

- 1) Conduct headspace readings during the excavation activities to determine the extent of excavation needed. Subsequent to the excavation activities, START will collect soil samples from the sidewalls and bottom of the excavation which will be analyzed for VOCs.
- 2) Conduct regular routine perimeter air monitoring using Personal DataRAMs (PDRs), MultiRAEs, ppbRAEs and AreaRAEs to measure dust, and/or particulates, and VOCs during the excavation activities.
- 3) Conduct air or other media monitoring activities to confirm cleanup goals have been met as directed by the OSC.
- 4) Document site activities and create and maintain a Site File.



4.0 HAZARD ASSESSMENT

This section is to be addressed in the daily tool box safety meeting as each task is to be initiated. Each Task-Specific Safety Assessment is designed to develop awareness to chemical and physical hazards specific to each task. It would be impractical to repeat in complete detail each control measure and SOP for each job task. Sources, Hazards and Control Measures will be addressed for each job task.

Specific work tasks with unique hazards and/or PPE requirements must be evaluated or reevaluated prior to beginning work. This task review will be led by the Project Health and Safety Manager and the SHSO, and will include knowledgeable individuals such as the worker(s) and the supervisor. PPE requirements, based on this assessment, will be included in Section 6 of the HASP or in the AHA for the specific task. All workers must be trained in the requirements of the HASP and the applicable AHAs prior to beginning work. The required PPE may be changed by the SHSO, based on the results of additional air monitoring, or on task-specific needs. Downgrades will require the approval of the Project Health and Safety Manager unless otherwise permissible by the HASP.

The following section outlines the AHAs, Referenced Standard Operations Procedures (SOPs) and Chemical Hazards associated with this project. Applicable SOPs are available from ER's Health and Safety Database. AHAs will be developed for each of the SOW activities listed in Section 3.2 and submitted prior to the start of field work.

The AHAs should be revised for site-specific activities and review with the work crew before commencing any activity.

The following table lists ER health and safety SOPs that are applicable to this project.

Referenced SOPs:	
ER SOPs applicable to this project or task order:	
HS-01 Air Monitoring and Sampling HS-02 BBP Exposure Control Plan HS-08 Decontamination Measures HS-10 Motor Vehicle Operation HS-12 Electrical - General HS-13 Excavation and Trenching Operations HS-15 Hazard Communication HS-16 Hearing Conservation	HS-17 Heat Stress HS-18 Heavy Equipment Operation HS-24 Personal Protective Equipment HS-26 Respiratory Protection HS-36 Proper Lifting Techniques HS-49 Tool Safety and Inspection HS-52 General Waste Management HS-53 Spill Prevention Response
START SOPs applicable to this project or task order:	
OTIE007D Subsurface Soil Sampling	
UXO known or suspected to present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	UXO support and plans provided Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Lifts Yes No <input checked="" type="checkbox"/>	
Items to be lifted:	Critical <input type="checkbox"/> Ordinary <input type="checkbox"/>
Excavations Yes <input checked="" type="checkbox"/> No	

4.1 Chemical Hazards

Site Contaminants/Chemicals of Concern					
Chemical	Media	PEL	TLV	Route of Entry	Symptoms Acute/Chronic
Perchloroethylene (PCE)	Soil Vapor	100 ppm	25 ppm	Inhalation Ingestion Contact	Irritation skin, eyes, mucous membranes; dermatitis; headache, blurred vision, dizziness, slurred speech, confusion; possible liver, kidney damage; potential carcinogen
Trichloroethene	Soil Vapor	100 ppm	50 ppm	Inhalation Ingestion Contact	Irritation skin, eyes, mucous membranes; dermatitis, headache, blurred vision, cardiac arryth, liver
1,2-Dichloroethylene	Soil Vapor	200 ppm	200 ppm	Inhalation Ingestion Contact	Irritate eyes, resp system, and CNS depression



Petroleum Hydrocarbons (Gasoline)	Liquid	None	300 ppm	Inhalation absorption Ingestion Contact	Irritation skin, eyes, mucous membranes; dermatitis; headache, blurred vision, dizziness, slurred speech, confusion; possible liver, kidney damage; potential carcinogen
Particulates not otherwise regulated (Dust)	Dust	15 mg/m3 total		Inh, Con	Irrit eyes, skin, throat, upper resp sys
Carbon Monoxide	Air	50 ppm	25 ppm	Inhalation	Headache, nau, lass, dizz, confusion
Diesel Fuel	Liquid	None	100 mg/m ³	Inhalation absorption Ingestion Contact	Eye irritation, pulmonary function changes; Potential occupational carcinogen

The above listings should not be taken as a complete assessment of the hazards posed by materials at the Sandies Cleaner & Laundry site. The known and unknown mixed chemical hazards at this site prevent a clear determination of the specific effects of discrete compounds. Therefore, personnel must be alert for symptoms of possible exposure such as unusual smells, stinging, burning eyes, nose and throat, skin irritation, as well as feeling extremely well, depressed, sleepy or tired. Symptoms must be immediately reported to the site supervisor.

4.2 Task Specific Hazards and Controls

Activity Hazard Analysis		
Job Task: Mobilization and Set Up		
Personal Protective Equipment: Level D		
Hazard	Sources	Control Measures
Traffic related injury	Driving motor vehicles	Follow HS-10 Motor Vehicle Operation Adjust controls/mirrors prior to operation Utilized defensive driving techniques.
Ergonomics	Lifting and Bending	Follow HS-36 Proper Lifting Techniques Use Buddy system Use mechanical means when feasible
Cuts/Punctures	Sharp Objects	Beware of sharp objects Wear cut resistant gloves
Heat	Seasonal Temperatures	Follow HS-17 Heat Stress SOP Schedule proper breaks Maintain communication/observation of co-worker Cool break area Proper hydration
Noise	Equipment/power hand tools	Hearing protection required when use powered hand tools Hearing protection for levels > 85 dBs
Skin reactions	Poisonous Plants	Survey work crew for past reactions and assign accordingly Survey area and identify sources Beware of and avoid contact Eliminate plant if possible
Wildlife/domestic animals	Insects/Spiders/Bees/Ticks/Mosquitoes/Dogs	Survey area and identify sources Beware of and avoid contact Apply appropriate repellent per label directions
Slips/Trips/Falls	Terrain Debris	Identify/mark hazards Remove debris from walking / working surfaces Cover/fill in holes Mow tall grass if feasible
Struck by/caught between	Vehicle & Equipment Operation/Traffic	Follow HS-10 Motor Vehicle Operation Follow HS-18 Heavy Equipment Operation Follow HS-30 Traffic Control Safety Only qualified drivers permitted to operate vehicles Wear ANSI Type 2 high-visibility safety vest Wear seat belts while in operation Back up alarms functional and loud enough to hear over surroundings



Task Specific Safety Assessment		
Job Task: Concrete Demolition & Soil Excavation		
Personal Protective Equipment: Level C and Modified D w/air monitoring justification		
Hazard	Sources	Control Measures
Struck by/caught between	Excavator/bobcat	Follow HS-18 Heavy Equipment Operation Only qualified drivers permitted to operate equipment Wear ANSI Type 2 high-visibility safety vest Wear seat belts while in operation Back up alarms functional and loud enough to hear over surroundings
Ergonomics	Lifting and Bending	Follow HS-36 Proper Lifting Techniques Use Buddy system Use mechanical means when feasible
PCE /VOC Exposure	Contaminated Soil	Avoid contact with contaminated soil Air monitoring to ensure levels remain below PEL Control work area Use proper Level C PPE per Section 6.0 of this HASP Cover roll-off box containing contaminated soil when not actively filling
Carbon Monoxide Exposure	Operating Equipment	Utilize ventilation fans inside building Monitor area with MultiRae
Heat	Seasonal Temperatures PPE Use	Follow HS-17 Heat Stress SOP Schedule proper breaks Maintain communication/observation of co-worker Cool break area Proper hydration
Electricity	Overhead power lines	Follow HS-23 LO/TO De-energize and move overhead service to building Maintain a minimum of 10' clearance from other overhead power lines.
Noise	Equipment/vehicles/ hand tools	Hearing protection for levels > 85 dBs; muffs and plugs during concrete demo
Open excavation	Cave In/Fall	Competent Person on site Use temp fencing to barricade site from public
Slips/Trips/Falls	Uneven Terrain, and Debris	Wear proper footwear per HS-24 with cleated soles Identify/mark hazards Remove debris from walking / working surfaces.

Activity Hazard Analysis		
Job Task: Backfill and Site Restoration		
Personal Protective Equipment: Level D		
Hazard	Sources	Control Measures
Heat	Summer Temperatures	Follow HS-17 Heat Stress SOP Schedule proper breaks Maintain communication/observation of co-worker Cool break area Proper hydration
Ergonomics	Lifting and Bending	Follow HS-36 Proper Lifting Techniques Use Buddy system Use mechanical means when feasible
Cuts/Punctures	Sharp Objects	Beware of sharp objects Wear cut resistant gloves
Noise	Equipment/vehicles/ hand tools	Hearing protection required when use powered hand tools Hearing protection for levels > 85 dBs
Open Trench	Cave In/Fall	Competent Person on site; use temp fencing to barricade site
Carbon Monoxide Exposure	Operating Equipment	Utilize ventilation fans inside building Monitor area with MultiRae
Slips/Trips/Falls	Uneven Terrain	Wear proper footwear per HS-24 with cleated soles Identify/mark hazards Remove hazards from walking / working surfaces.
Struck by/caught between	Vehicle & Equipment Operation/Traffic	Follow HS-10 Motor Vehicle Operation Follow HS-18 Heavy Equipment Operation Only qualified drivers permitted to operate vehicles Wear ANSI Type 2 high-visibility safety vest Wear seat belts while in operation Back up alarms functional and loud enough to hear over surroundings

The above listing should not be taken as a complete assessment of the hazards posed by materials at the Sandies Cleaner Laundry site. The various locations and underground contamination at this site prevent a clear determination of the specific effects of discrete compounds and conditions. Therefore, personnel must be alert for symptoms of possible exposure such as unusual smells, stinging, burning eyes, nose and throat, skin irritation, as well as feeling extremely well, depressed, sleepy or tired. Symptoms must be immediately reported to the site supervisor.

4.3 Physical Hazards

PHYSICAL/ENVIRONMENTAL HAZARD ANALYSIS		
HAZARD	PRE PLANNING TO CONTROL HAZARD	ACTIVE CONTROL MEASURES
Electrical	<ol style="list-style-type: none"> 1. Locate and mark existing energized lines. 2. De-energize lines if necessary to perform work safely. 3. All electrical circuits will be grounded. 4. All 120 volt single phase which are not a part of the permanent wiring will have a ground-fault interrupter in place. 5. Temporary wiring will be guarded, buried or isolated by elevation to prevent accidental contact by personnel or equipment. 6. Evaluate potential for high moisture/standing water areas and define special electrical wiring needs-typically requirement for low voltage lighting systems. 	<ol style="list-style-type: none"> 1. Utilize Qualified Electrical Contractor for any new or temporary electrical construction. 2. Ensure electrical equipment/material meet all local, state and federal code and specifications 3. Use GFCI for all power tool usage.
Ergonomic	<ol style="list-style-type: none"> 1. All operations evaluated for ergonomic impact. 2. Procedures written to define limits of lifting, pulling, etc. 3. Procedures to define how personnel will utilize proper ergonomic concepts and utilize mechanical material handling equipment. 4. Necessary mechanical material handling equipment specified and ordered for project. 	<ol style="list-style-type: none"> 1. Proper body mechanics techniques stressed and enforced on a daily basis. 2. Mechanical handling equipment maintained and utilized. 3. Proper body mechanics stressed in scheduled safety meetings. 4. Injuries reported and medically treated if in doubt about severity. 5. Operations changed as necessary based on injury experience or potential.
Existing Site	<ol style="list-style-type: none"> 1. Survey site prior to layout. Identify areas unsafe for personnel 	<ol style="list-style-type: none"> 1. Awareness to work environment - regular



PHYSICAL/ENVIRONMENTAL HAZARD ANALYSIS		
HAZARD	PRE PLANNING TO CONTROL HAZARD	ACTIVE CONTROL MEASURES
Topography	<ul style="list-style-type: none"> or equipment due to physical conditions. 2. Identify/locate existing utilities. 3. Determine impact of site operations on surrounding properties, communities, etc. 4. Identify mechanized equipment routes both on site and onto and off the site. 5. Layout site into exclusion and contamination reduction zones based on initial site evaluation. 	<ul style="list-style-type: none"> inspection/audits to identify changing conditions. 2. Shut down operations when unknown conditions encountered.
Fires & Explosions	<ul style="list-style-type: none"> 1. Evaluate all operations for fire and explosion potential. 2. Define specific procedures for unique operations presenting unusual hazard such as flammable tank demolition. 3. Ensure that properly trained personnel and specialized equipment is available. 4. Define requirements for handling and storage of flammable liquids on site, need for hot work permits and procedures to follow in the event of fire or explosion. 5. Define the type and quantity of fire suppression equipment needed on site. 6. Coordinate with local fire fighting agencies to discuss unique fire hazards, hazardous materials, etc. 7. Ensure site operations comply with 29CFR 1910.157G. 	<ul style="list-style-type: none"> 1. Inspect fire suppression equipment on a regular basis. 2. Store flammables away from oxidizers and corrosives. 3. Utilize Hot Work Permit for all hot work on-site. 4. Follow any site specific procedures regarding work around flammables. 5. Review and practice contingency plans. 6. Discuss on regular basis at scheduled safety meetings.
Flammable Vapor and Gases	<ul style="list-style-type: none"> 1. Evaluate site to determine sources of likely flammable gas or vapor generation. 2. Develop specific procedures to be followed in the event of exposure to flammables. 3. Specify specialized equipment needs for inerting flammable atmospheres, ventilating spaces and monitoring flammable vapor concentrations. 4. Define requirements for intrinsically safe equipment. 5. Develop contingency plan to follow in the event of fire or explosion. 	<ul style="list-style-type: none"> 1. Calibrated monitoring equipment available and utilized by trained personnel whenever working where flammable gas or vapor is present. 2. Monitoring performed at regular frequency and in all areas where vapor could generate or pool. 3. Equipment and operations shut down when threshold levels are exceeded. 4. Contingency plans reviewed regularly by all involved personnel. 5. Work areas are carefully inspected to look for possible ignition sources. Sources are removed. 6. Operations shut down if specific task procedures can't be followed to the letter.
Heavy Equipment Operation	<ul style="list-style-type: none"> 1. Define equipment routes and traffic patterns for site. 2. Insure that operators are properly trained on equipment operation for all equipment required on project. 3. Define safety equipment requirements, including back up alarm and roll over, for all equipment on site. 4. Define equipment routes and traffic patterns for site. 5. Implement SOP of requiring operators to safety inspect equipment on a daily basis in accordance with manufacturer requirements. 6. Evaluate project requirements to ensure that equipment of adequate capacity is specified. 	<ul style="list-style-type: none"> 1. Equipment inspected as required. 2. Equipment repaired or taken out of service. 3. Ground spotters are assigned to work with equipment operators. 4. Utilize standard hand signals and communication protocols. 5. Personnel wear the proper PPE; utilize hearing protection, gloves for handling rigging, etc. 6. Equipment safety procedures discussed at daily scheduled safety meetings. 7. Personnel do not exceed lifting capacities, load limits, etc. for equipment in question. 8. Personnel follow basic SOP's which prohibit passengers on equipment, activating brakes and grounding buckets, securing loads prior to movement, etc.
Illumination	<ul style="list-style-type: none"> 1. Evaluate all operations and work areas to determine lighting requirements. 2. Specify specialized lighting requirements including explosion proof, intrinsically safe, lighting needs. 3. Determine if nighttime outdoor operations are necessary. 4. Evaluate tasks to be performed and number of light plants necessary to allow operations. 5. Ascertain if outdoor lighting from nighttime operations will have an impact on surrounding communities. 	<ul style="list-style-type: none"> 1. Inspect specialized equipment and discard or replace as needed. 2. Add additional lighting to areas with lighting deficiencies. 3. Inspect drop cords and portable lights on regular basis. Replace or repair as necessary.
Noise	<ul style="list-style-type: none"> 1. Local community noise standards examined. 2. Expected loud operations evaluated to determine compliance with community standards. 3. Loud operations scheduled for approved time periods. 4. Noise level standards established for equipment brought onto 	<ul style="list-style-type: none"> 1. Personnel receive annual audiogram. 2. Personnel required to wear hearing protection. 3. Routine noise level monitoring and dosimetry performed.

PHYSICAL/ENVIRONMENTAL HAZARD ANALYSIS		
HAZARD	PRE PLANNING TO CONTROL HAZARD	ACTIVE CONTROL MEASURES
	site. 5. Hearing protection requirements defined for personnel expected to have excessive exposures.	4. Defective equipment repaired as needed. 5. Ongoing hearing conservation education promoted at scheduled safety meetings. 6. Medical evaluation following noise (impact) exposure if symptoms present themselves.
Personal Injuries	1. Site operations will be evaluated for exposures with serious injury potential such as falling objects, pinch points, flying objects, falls from elevated surfaces, etc. 2. A written Fall Prevention Program will be developed if workers will be required to work at heights greater than 6 feet from unguarded work locations. 3. PPE requirements will be based on potential for injury.	1. Personnel will wear required PPE. 2. Specialized equipment such as rope grabs, winches, etc. will be inspected prior to each use. 3. Defective equipment will be immediately replaced. 4. All injury and near miss incidents will be reported to the SHSO. 5. First aid/CPR trained person on site at all times. 6. Transport for medical care if necessary.
Small Equipment Usage	1. Site operations will be evaluated to determine need for specialized intrinsically safe, explosion-proof and UL approved equipment and instruments. 2. Implement requirement for G.F.I., double insulated tool usage, or assured grounding program in all outdoor operations, will be utilized. 3. Specify equipment needs to ensure that equipment used only for the purpose for which it is designed and to prevent abuse or misuse of the equipment. 4. Specify requirements for the inspections and maintenance of specialized equipment. 5. Specify that all equipment utilized on the project meets all OSHA requirements.	1. Inspect each tool prior to each use. 2. Ensure all guards are in use and properly positioned. 3. Ensure item being worked on is properly braced if necessary. 4. Get help when appropriate to hold or brace item being worked on. 5. Wear leather or other appropriate gloves in addition to level C PPE.
Weather Conditions	1. Evaluate prevailing weather conditions for the site. 2. Contingency plans developed for likely severe weather conditions such as tornado, and extreme thunderstorm. 3. Provide for daily weather forecast service in extreme weather areas. 4. Plan to weatherize safety systems, such as showers and eye washes that would be impacted by extreme cold weather. 5. Order necessary specialized cold weather clothing. 6. Grounding and bonding requirements defined for thunderstorm areas. 7. Sheltered air conditioned break areas provided for extreme hot and cold weather zones.	1. Employees trained in contingency plan for severe weather conditions. 2. Emergency water sources inspected regularly in cold areas. 3. Weather service contacted regularly during storm conditions. 4. Supervisory personnel cease operations during extreme storm conditions (i.e., thunderstorms). 5. Personnel evacuate to safe assembly area.
Heat Stress	1. Anticipate possible high temperatures (summer months). 2. Be aware of heat stress symptoms, quit sweating, pale, clammy skin, dizziness	1. Cool break area. 2. Drink water. 3. Buddy system/ awareness 4. First aid on site. 5. Medical care if symptoms persist.
Cold Stress	1. Anticipate possible low temperatures (winter months). 2. Remember the temperature does not have to be below freezing to have a cold stress situation.	1. Warm break area. 2. Warm decaffeinated drinks. 3. Buddy system/ awareness. 4. First aid on site. 5. Medical care if symptoms persist

5.0 Training Requirements

This section describes ER's project training requirements and site visitor policy. Training of all personnel shall be in accordance with OSHA 29 CFR 1910.120 and the National Fire Protection Association (NFPA) standards.

5.1 Project Training Requirements

The training listed in Table 5-1 will be provided to project participants as noted. All required training will be documented and this documentation maintained onsite.

Project Training Requirements:		
Topic	Description	Personnel

Project Training Requirements:		
Topic	Description	Personnel
General Training		
Site Safety and Health Plan	Site-specific hazards and control requirements, before commencement of field work. Includes training in proper use and care of PPE.	All project personnel
Activity Hazard Analysis	Activity-specific hazards, controls and training requirements for a specific phase or activity, prior to commencement of activity	Workers, supervisors and oversight personnel engaged in the activity
Daily Safety Briefing	In addition to plan-of-the-day and daily hazard reminders, often used to cover a specific topic; provided refresher training on various issues; or changes in hazards, controls or procedures.	All field workers, supervisors and field oversight personnel
Emergency Action Plan	Roles, responsibilities, recognition of emergency conditions, reporting and notification, evacuation and other procedures.	All project personnel, with detailed information on procedures for workers with special responsibilities
OSHA 40-Hour Hazardous Waste Operation (HAZWOPER) Training	General hazards and controls for hazardous waste activities at remediation sites, prior to performing work in an exclusion zone.	General site workers, supervisors, oversight personnel on HAZWOPER sites
OSHA 8-Hour Supervisor	Managing HAZWOPER work activities	Supervisors and management support staff on HAZWOPER sites
OSHA 8-Hour Refresher	Current annual refresher for HAZWOPER sites.	Workers, supervisors and oversight personnel engaged in the activity
OSHA 10-Hour Construction Safety	10-Hour OSHA Construction Safety Course	SHSO at a minimum.
Hazard Communication	Requirements for MSDS, labels; hazards of site materials and controls; location of and access to inventories and MSDS.	All project personnel potentially exposed to hazardous materials
Fire Extinguisher	General education on selection, distribution, and proper use of fire extinguishers.	All project personnel
Special Training		
First aid/ Cardiopulmonary Resuscitation (CPR)	Red Cross, National Safety Council or other authorized course, with current refresher	At least 2 project personnel
Fall Protection	Fall (from elevation) hazards, fall protection techniques, especially proper use of personal fall arrest systems and rescue procedures.	Task-specific, workers exposed to fall hazards.
Competent Person	Familiar with OSHA regulations and is capable of identifying excavation hazards and authorized to take corrective measures	Project Supervisor or Equipment Operator
Lockout/Tagout	Site-specific energy control and verification procedures.	Authorized personnel working on de-energized systems, and affected employees whose work may be impacted by a lockout/tagout situation.
Other Heavy Equipment operations	Qualified by Construction Manager, Superintendent or Equipment Supervisor as documented on ECC Equipment Operator Qualifications Form	Equipment Operators
Power tools (e.g. chain saws, chippers, powder-actuated tools, compressed air systems)	Hazards and proper use and maintenance as described in operations manual. Powder-operated tool users certified by manufacturer.	Tool users

5.2 Visitor Indoctrination Policy

All site visitors will be required to review the daily tailgate safety issues and sign the visitor log. At a minimum, all visitors must be informed of the anticipated hazards and PPE requirements, designated work zones, escort procedures, and emergency procedures.

6.0 **PERSONAL PROTECTIVE EQUIPMENT**

The following is a brief description of the personal protective equipment, which may be required during various phases of the project. The U.S. EPA terminology for protective equipment will be used; Levels A, B, C and D.

Respiratory protective equipment shall be NIOSH-approved and use shall conform to OSHA 29 CFR Part 1910.134 Requirements. Each employer shall maintain a written respirator program detailing selection, use, cleaning, maintenance and storage of respiratory protective equipment. The written Respirator Program will be maintained at the local and regional offices.



- 6.1 Level A Protection Shall Be Used When: (NOT ANTICIPATED)
- The extremely hazardous substance requires the highest level of protection for skin, eyes and the respiratory system;
 - Substances with a high degree of hazard to the skin are known or suspected;
 - Chemical concentrations are known to be above IDLH levels; or,
 - Biological hazards requiring Level A are known or suspected.
- 6.2 Level B Protection Shall Be Used When: (NOT ANTICIPATED)
- The substance(s) has been identified and requires a high level of respiratory protection but less skin protection;
 - Concentrations of chemicals in the air are IDLH or above the maximum use limit of an APR with full-face mask;
 - Oxygen deficient or potentially oxygen deficient atmospheres (<19.5%) are possible; and/or, Confined space entry may require Level B.
 - Incomplete identification of gases and vapors, but not suspected to be harmful to skin or skin absorbable
- 6.3 Level C Protection Shall Be Used When:
- The same level of skin protection as Level B, but a lower level of respiratory protection is required;
 - The types of air contaminants have been identified, concentrations measured, and an air purifying respirator is available that can remove contaminants; or,
 - The substance has adequate warning properties and all criteria for the use of APR respirators has been met

Level C Protective Equipment at a Minimum Shall Consist of:

Air Purifying Respirator	NIOSH approved Full-face
Cartridges	Combo
Chemical Resistant/Protective Coveralls (type)	Particulate resistant (i.e. Tyvek or equivalent)
Gloves	Nitrile if handling contaminated soil, leather if operating equipment*
Safety shoes/Boots (type)	Steel Toed
Hard Hat	ANSI approved
Respiratory Inserts	As required
Other (List _____)	N/A
Modifications:	*Use cut resistant gloves when handling sharp objects.

Mod Level D Protection Shall Be Used When:

- The atmosphere is demonstrated to be within OSHA permissible limits
- Work functions preclude splashes, immersion or the potential for unexpected inhalation of, or contact with, hazardous concentrations of harmful chemicals.

Mod Level D Protection Equipment at a Minimum Shall Consist of:

Chemical Resistant/Protective Coveralls	Particulate resistant (i.e. Tyvek or equivalent)
Safety Shoes/Boots	Steel toed/shank work boots
Boot Covers (booties)	Latex
Work Gloves	Cotton or Leather*
Hard Hat	ANSI approved
Face Shield	As necessary
Safety Glasses	ANSI approved
Modifications:	* Wear cut resistant gloves when handling sharp objects

6.5 Level D Protection Shall Be Used When:



- The atmosphere is demonstrated to be below OSHA permissible exposure limits
- Work functions preclude splashes, immersion or the potential for unexpected inhalation of, or contact with, hazardous concentrations of harmful chemicals.

Level D Protection Equipment at a Minimum Shall Consist of:

Standard Work Clothes	Sleeved shirt/long pants
Rain Suit	As required
Safety Shoes/Boots (type)	Steel Toed
Boot Covers (booties)	During muddy conditions as necessary
Work Gloves	Cotton or leather*
Hard Hat	ANSI approved
Safety Glasses	ANSI approved
Modifications:	*Use cut resistant gloves when handling sharp objects.

6.6 Decisions to Upgrade/Downgrade PPE

All decisions to downgrade from Level B to C or D must be accompanied by air monitoring results. The Regional Safety Managers must be advised of on-site decisions to downgrade. All decisions must be documented with an Addendum to the Plan.

The following conditions will necessitate reevaluation of PPE use.

- commencement of a new work not previously identified
- change of job tasks during a work phase
- change of season/weather
- contaminants other than those identified in Safety Plan
- change in ambient levels of contaminants
- change in work which affects degree of chemical contact

6.7 Project Personal Equipment Requirements

Project Personal Protective Equipment Requirements:							
Activity	Respiratory Protection	Head Protection	Body Protection	Hand Protection	Eye/Face Protection	Foot Protection	Hearing Protection
Site Setup (Level D)	None	ANSI-approved hardhat	Standard Work Clothes	Leather or cut resistant work gloves	ANSI-approved safety glasses	ANSI-approved safety boots	Plugs or muffs when using power tools
Concrete Demo & Excavation (Level C) Initial	Full-face APR with combo P100/OV cartridges	ANSI-approved hardhat	Tyvek or equivalent	Leather or cut resistant work gloves over nitrile liners	ANSI-approved safety glasses	ANSI-approved safety boots with boot covers	Plugs or muffs when using power tools
Excavation (Modified Level D) Consistent with section 6.6	None	ANSI-approved hardhat	Tyvek or equivalent	Leather or cut resistant work gloves over nitrile liners	ANSI-approved safety glasses	ANSI-approved safety boots with boot covers	Plugs or muffs when using power tools
Site Restoration (Level D)	None	ANSI-approved hardhat	Standard Work Clothes	Leather work gloves	ANSI-approved safety glasses	ANSI-approved safety boots	Plugs or muffs when using power tools

Personal Protective Equipment Inspection and Care

Inspection and care of PPE are covered in the ER Corporate SOP HS-24 and in the START Field Officer Safety Manual.



6.8 Respiratory Protection Program

ER shall implement HS-26 Respiratory Protection Program for its employees and subcontractors and train them on its contents. The program will be administered by the SHSO.

Respiratory protective equipment shall be NIOSH-approved and use shall conform to OSHA 29 CFR Part 1910.134 Requirements. ER and subcontractors shall maintain a written respirator program detailing selection, use, cleaning, maintenance and storage of respiratory protective equipment.

7.0 MEDICAL MONITORING REQUIREMENTS

7.1 Pre-Employment Medical Examination

- a. Pre-employment medical examinations are required for persons working at hazardous waste sites.
- b. All examinations must be completed and documented prior to assignment to this site.
- c. All examinations will be conducted following parameters established by WorkCare™.

7.2 Site Specific Medical Examination

- a. N/A for the Sandies Cleaner & Laundry Site

7.3 Annual Medical Examination

The medical examination must have been within a 12 month period prior to on-site activity and repeated annually.

7.4 Suspected Exposure Medical Examination

- a. Following any suspected uncontrolled exposure to site contaminants, personnel should be scheduled for a special medical examination.
- b. The medical examination will be specific for the contaminants and the associated target organs or physiological system.
- c. Questions regarding the type of medical examination can be directed to ER's Corporate Health and Safety Manager.

7.5 Contractor Physical Examination Requirements

All subcontractors entering the contamination reduction or exclusion zone will have adequate medical surveillance satisfying 29 CFR 1910.120.10 (f).

8.0 Health and Hazard Monitoring

According to 29 CFR 1910.120 (h) Air Monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection needed on-site. USEPA START contractor shall be tasked for all air monitoring on this project. ER will ensure they maintain an air monitoring program to evaluate concentrations of specific chemical groups or contaminants in ambient air during work activities. This program will include both real-time, direct monitoring equipment, and chemical-specific personal air monitoring as appropriate.

Both area and personal monitoring will be conducted to document potential exposures to hazardous constituents, as well as to evaluate the adequacy of the Personal Protection Equipment (PPE) program.

8.1 Routine Air Monitoring Requirements

- Upon initial entry to rule out IDLH conditions
- When the possibility of an IDLH condition or flammable atmosphere has developed
- When work begins on a different portion of the site
- Contaminants other than those previously identified are being handled

- A different type of operation is initiated
- Employees are handling leaking drums or containers or working in areas with obvious liquid contamination
- During confined space work

Air monitoring will consist at a minimum of the criteria listed below. All air monitoring data will be documented and available in the command post site files for review by all interested persons. Air monitoring instruments will be calibrated and maintained in accordance with the manufacturer's specifications. Calibration and maintenance performed will be entered in the site log and/or instrument log book.

8.2 Site Specific Air Monitoring Requirements

Health Hazard Monitoring:					
Real Time (Air, noise, heat, radiation, light)					
Activity	Target Analyte	Instrument	Frequency	Action Levels	Actions/Upgrade and Rationale
Site Mobilization (Level D)	None	N/A	N/A	N/A	N/A
Concrete Demo & Excavation (Level C/Mod D)	PCE	Multi-gas monitor (MultiRAE or equivalent)	Periodic/every day	½ TLV (12.5 ppm)	Upgrade to Level C if action level exceeded or improve engineering controls Upgrade to Level B if Level "C" max exceeded
	Carbon Monoxide	Multi-gas monitor (multiRAE or equivalent)	Periodic/every day	½ TLV (12 ppm) IDLH 1200 ppm	Improve engineering controls; upgrade to level "B"
	Nuisance Dust	PDR	Periodic/every day	2.5 mg/m3	Upgrade to Level C if action level exceeded or improve engineering controls
Site Restoration (Level D)	Carbon Monoxide	MultiRae	Periodic/every day	1/2 TLV (12 ppm)	Improve engineering controls; upgrade to level "B"
Site wide	Temperature Extremes Heat	N/A	Frequent breaks and fluids shall be provided	Variable depending on the individual and work activity	Schedule outside work around extreme Summer temps.

* The reading must be sustained for at least one (1) minute in the breathing zone.

START will conduct perimeter air monitoring using a Personal DataRAM (PDR), MultiRAEs, ppbRAEs and AreaRAEs to measure dust and/or particulates, and VOCs during the excavation activities.

8.3 Integrated Personal Exposure Monitoring

Integrated personal exposure monitoring will be conducted to document PCE levels in the work zones. Sampling for PCE shall be conducted by ER utilizing equipment and media appropriate to OSHA methods. Analysis will be done by AIHA accredited laboratory. Sampling will be conducted during the concrete demolition & soil excavation phase of the project.

9.0 **CONTAMINATION CONTROL, SANITATION AND WASTE MANAGEMENT**

9.1 Work Zones

The primary purpose for site controls is to establish the hazardous area perimeter, to reduce migration of contaminants into clean areas and to prevent access or exposure to hazardous materials by unauthorized persons. At the end of each workday, the site should be secured or guarded, to prevent unauthorized entry. Site work zones will be maintained as needed by the RM. Site work zones will be clearly marked and include:



Clean Zone/Support Zone

This uncontaminated support zone or clean zone will be the area outside the exclusion and decontamination zones and within the geographic perimeters of the site. This area is used for staging of materials, parking of vehicles, office and laboratory facilities, sanitation facilities, and receipt of deliveries. Personnel entering this zone may include delivery personnel, visitors, security guards, etc., who will not necessarily be permitted in the exclusion zone. All personnel arriving in the support zone will upon arrival, report to the command post and sign the site entry/exit log. There will be one controlled entry/exit point from the clean zone to the decontamination zone.

Decontamination Zone

The decontamination zone will provide a location for removal of contaminated personal protective equipment and final decontamination of personnel and equipment. All personnel and equipment should exit via the decon area. A separate decontamination area will be established for heavy equipment.

1. The decontamination zone is a buffer zone between contaminated and clean areas.
2. Identified by yellow banner guard.
3. Decon line is located in the northeast corner of the building adjacent to the office area

Exclusion Zone/Hot Zone

The exclusion zone will be the "hot-zone" or contaminated area inside the site perimeter. Entry to and exit from this zone will be made through a designated point and all personnel will be required to sign the hot zone entry/exit log located at the decon area. Appropriate warning signs to identify the exclusion zone should be posted (i.e. "DANGER - AUTHORIZED PERSONNEL ONLY", "PROTECTIVE EQUIPMENT REQUIRED BEYOND THIS POINT", etc.) Exit from the exclusion zone must be accompanied by personnel and equipment decontamination as described in Section 10.0.

1. Will be identified by red banner guard.
2. These areas will be defined by Red banner guard
3. General Safety Rules for Exclusion Zone
 - a. wear the appropriate level of PPE defined in plan
 - b. do not remove any PPE or break the integrity to pick, scratch, or touch parts of your body
 - c. no smoking, eating or drinking
 - d. no horseplay
 - e. no matches or lighters in this zone
 - f. implement the communication and line of sight system

9.2 General Field Safety Rules

- Horseplay is not permitted at any time.
- All visitors must be sent to the command post.
- It is ER policy to practice administrative hazard control for all site areas by restricting entrance to exclusion zones to essential personnel and by using operational SOPs.
- Whenever possible, avoid contact with contaminated (or potentially contaminated) surfaces. Walk around (not through) puddles and discolored surfaces. Do not kneel on the ground or set equipment on the ground. Stay away from any waste drums unless necessary. Protect equipment from contamination by bagging.
- Eating, drinking, or smoking is permitted only in designated areas in the support zone
- Cell phone use in designated areas only and is prohibited in EZ and CRZ
- Hands and face must be thoroughly washed upon leaving the decon area.
- Beards or other facial hair that interferes with respirator fit will preclude wearing a respirator.
- All equipment must be decontaminated or discarded upon exit from the exclusion zone.
- All personnel exiting the exclusion zone must go through the decontamination procedures described in Section 10.0.
- Safety Equipment described in Section 6.0 will be required for all field personnel.
- Personnel will only travel in vehicles where individual seats for each occupant are provided.

- Seat belts will be worn as required.
- Fire extinguishers will be available on site and in all areas with increased fire danger such as the refueling area.
- A minimum of two personnel will always be on site whenever heavy equipment is operated.
- Only necessary personnel need to be on or around heavy equipment.
- Employees will not interfere with or tamper in any way with air monitoring equipment.
- Backhoes or other equipment with booms shall not be operated within 10 feet of any electrical conductor.

Minimum Clearance from Energized Overhead Electric Lines

NOMINAL SYSTEM VOLTAGE	MINIMUM REQUIRED CLEARANCE
0-50 kV	10 feet
51-100 kV	12 feet
101-200 kV	15 feet
201-300 kV	20 feet
301-500 kV	25 feet
501-750 kV	35 feet
751-1000 kV	45 feet

- Visitor log will be maintained at the command post or with the security guard. All personnel coming on site will sign in and out on a daily basis.
- Security will be maintained at the site by closing all gates during normal work hours. Site will be locked up in the evening.
- If unauthorized members of the public are found on site, contact OSC immediately and do not leave the individual unattended.
- Visitors are not allowed in the work areas without authorization. Visitors must sign in at the Command Post and receive authorization to enter the site.
- Buddy System
 - The buddy system is mandatory at anytime that personnel are working in the exclusion zone, remote areas, on tanks, or when conditions present a risk to personnel.
 - A buddy system requires at least two trained/experienced people who work as a team and maintain at a minimum audible and/or visual contact while operating in the exclusion zone.
- Communication Procedures
 - Radios and/or cell phones will be used for onsite communications.
 - The crews should remain in constant radio or visual contact while on site.
 - The site evacuation signal will be 3 blasts on the air or vehicle horn.

10.0 DECONTAMINATION PROCEDURES

In general, everything that enters the exclusion zone at this site must either be decontaminated or properly discarded upon exit from the exclusion zone. All personnel, including any state and local officials must enter and exit the hot zone through the decon area. Prior to demobilization, contaminated equipment will be decontaminated and inspected before it is moved into the clean zone. Any material that is generated by decontamination procedures will be stored in a designated area in the exclusion zone until disposal arrangements are made.

NOTE: The type of decontamination solution to be used is dependent on the type of chemical hazards. The decontamination solution for this site is simple green & water. Decontamination solution will be changed daily (at a minimum) and collected and stored on-site until disposal arrangements are finalized.

10.1 Procedures for Equipment Decontamination

Following decontamination and prior to exit from the hot zone, the Response Manager shall be responsible for insuring that the item has been sufficiently decontaminated. This inspection shall be included in the site log.



Equipment decontamination will consist of the following steps: Clean with simple green & water after gross removal of soil.

10.2 Procedure for Personnel Decontamination

This decontamination procedure applies to personnel at this site wearing Level C protection. These are the minimum acceptable requirements:

Station 1: Equipment Drop

Deposit equipment used on-site (tools, sampling devices and monitoring instruments, radios, etc.) on plastic drop cloths. These items must be decontaminated or discarded as waste prior to removal from the exclusion zone.

Station 2: Outer Boot and Outer Glove Wash and Rinse

Scrub outer boots, outer gloves and/or splash suit as needed with decontamination solution. Rinse off using water.

Station 3: Outer Boot and Glove Removal

Remove outer boots and gloves. If outer boots are disposable, deposit in container with plastic liner. If non-disposable, store in a clean dry place.

Station 4: Outer Garment Removal

If applicable, remove SCBA back-pack and remain on air as long as possible. Remove Chemical Resistant Outer Garments and deposit in container lined with plastic. Decontaminate or dispose of splash suits as necessary.

Station 5: Respiratory Protection Removal

Remove hard-hat, face-piece, and if applicable, deposit SCBA on a clean surface. APR cartridges will be discarded as appropriate. Wash and rinse respirator at least daily. Wipe off and store respiratory gear in a clean, dry location. (See Attachment D)

Station 6: Inner Glove Removal

Remove inner gloves. Deposit in container for disposal.

Station 7: Field Wash

Thoroughly wash hands and face with soap and water. Shower as soon as possible.

Eating, drinking, chewing gum/tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and/or ingestion of materials is prohibited in any areas where the possibility of contamination exists and is permitted only in the designated break area.

Personnel will not wear or bring dirty/decontaminated clothing into the break areas.

10.3 Disposition of Decontamination Wastes

1. All equipment and solvents used for decontamination shall be decontaminated or disposed of with the established waste streams.
2. Commercial laundries or cleaning establishments that decontaminate or are used to launder contaminated clothing shall be informed of the presence and potentially harmful effects of the contaminants.

11.0 HAZARD COMMUNICATION PROGRAM

Each contractor will be responsible for maintaining a copy of their Hazardous Communication Program and MSDS' on site. The following items are specific to this job site:

Each contractor will be responsible for maintaining a copy of their Hazardous Communication Program and MSDS' on site. The following items are specific to this job site:



11.1 Material Safety Data Sheets

1. Material Safety Data Sheets will be maintained at the Command Post in the Health and Safety Binder or readily available via the intranet/internet.
2. MSDS' will be available to all employees for review during the work shift.

11.2 Container Labeling

1. All containers received on site will be inspected by the contractor using the material to ensure the following:
 - a. all containers clearly labeled
 - b. appropriate hazard warning
 - c. name and address of the manufacturer

11.3 The following chemicals were brought to the site:

1. Gasoline
2. Diesel
3. Simple Green
4. Calibration Gases
5. _____

11.4 Employee Training and Information

Prior to starting work, each employee will attend a health and safety orientation and will receive information and training on the following:

- an overview of the requirements contained in the Hazardous Communication Standard
- Hazardous chemicals present at the site
- the location and availability of the written Haz Comm Program
- physical and health effects of the hazardous chemicals
- methods of preventing or eliminating exposure
- emergency procedures to follow if exposed
- how to read labels and review MSDS' to obtain information
- location of MSDS file and location of hazardous chemical list

12.0 EMERGENCIES/INCIDENTS/INJURIES

It is essential that site personnel be prepared in the event of an emergency. Emergencies can take many forms; illnesses or injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather. The following sections outline the general procedures for emergencies. Emergency information should be posted as appropriate.

12.1 Emergency Contacts for the Sandies Dry Cleaners & Laundry Site

Emergency Call List and Project Organization		
Service	Name/Organization	Emergency Phone
Fire/Emergency Medical	Village of Little Chute Volunteer Fire Department	911 or (920) 788-7399
Police	Fox Valley Metro Police Department	911 or (920) 788-7505
Sheriff	Outagamie County	911
*Hospital	Appleton Medical Center 1818 N. Meade Street Appleton, WI. 54911	911 or 920-731-4101
* Occupational Medicine Facility	Aurora Health Center Clinic 855 N. Westhaven Dr. Oshkosh, WI 54904	920-303-8700



USEPA Representative(s)	Ramon Mendoza Kathy Halbur, EPA OSC	312-802-1409 920-634-9072
Poison Control Center		800-222-1222
ER Response Manager	John Behrens	708-473-7124
ER SHSO	John Behrens	708-473-7124
ER Project HS Manager	Lonnie Wright	636-262-0862
START Project Manager	Naren Babu - Otie	312-656-7685
START H&S Manager	Naren Babu - Otie	312-656-7685
START Field Lead	Naren Babu - Otie	312-656-7685

The route to the hospital and clinic will be verified by John Behrens. Distance from site to hospital is approximately 5.17 miles. Approximate driving time is 10 minutes.

*Directions from Site to Hospital are located in Attachment B.

NOTE: Maps and directions to the hospital will be posted in the vehicles and the site office.

The following individuals have been trained in CPR and First Aid: John Behrens, Rich Fellores

12.2 Additional Emergency Numbers

National Response Center	800-424-8802
AT&F (Explosives Information)	800-424-9555
Chemtrec	800-424-9300
USEPA Region 5 24/7 Spill Line	312-353-2314

ER Corporate Contacts

ER Corporate (24 Hr.)	888-814-7477
ER Corporate (St. Louis)	636-227-7477

12.3 Emergency Equipment Available On-Site

COMMUNICATIONS EQUIPMENT	LOCATION
Public Telephones	N/A
Private Telephones	N/A
Mobile Telephones	John Behrens 708-473-7124
Two-Way Radios	N/A
Emergency Alarms/Horns	Air Horns/Vehicle Horns
Other:	N/A

MEDICAL EQUIPMENT	LOCATION
First Aid Kits	In ER vehicles; site office; CRZ
Stretcher/Backboard	N/A
Eye Wash Station: (within 100 feet of hazard zone)	CRZ
Safety Shower	CRZ

FIRE FIGHTING EQUIPMENT	LOCATION
Fire Extinguishers	In ER vehicles; site office; CRZ; Hot zone
Other	N/A

SPILL OR LEAK EQUIPMENT	LOCATION
Absorbent Boom/Pads:	Support Zone
Dry Absorbent:	Support Zone

12.4 Incident Reporting/Investigations

- All injuries or incidents must be reported to the Response Manager or SHSO immediately.
- The Response Manager will contact ER Project HS Manager by telephone immediately.
- The Response Manager, SHSO and all affected employees will conduct an immediate investigation of the incident.
- The Response Manager will assign a supervisory individual to accompany all injured personnel to the clinic and follow guidelines outlined in the ER Return to Work Program.
- Copies of all Incident Reports will be sent to the ER Vice President, Health and Safety.

13.0 **EMERGENCY RESPONSE CONTINGENCY PLAN (ADD A CONTINGENCY FOR A MAJOR STORM/TORNADO)**

13.1 Project Personnel Responsibilities During Emergencies

RESPONSE MANAGER (RM)

As the administrator of the project, the RM has primary responsibility for responding to and correcting emergency situations. The RM will:

- Take appropriate measures to protect personnel including: withdrawal from the exclusion zone, total evacuation and securing of the site or up-grading or down-grading the level of protective clothing and respiratory protection.
- Take appropriate measures to protect the public and the environment including isolating and securing the site, preventing run-off to surface waters and ending or controlling the emergency to the extent possible.
- Ensure that appropriate Federal, State and local agencies are informed, and emergency response plans are coordinated. In the event of fire or explosion, the local fire department should be summoned immediately. In the event of an air release of toxic materials, the local authorities should be informed in order to assess the need for evacuation. In the event of a spill, sanitary districts and drinking water systems may need to be alerted.
- Ensure that appropriate decon treatment or testing for exposed or injured personnel is obtained.
- Determine the cause of the incident and make recommendations to prevent the recurrence.
- Ensure that all required reports have been prepared.

13.2 Medical Emergencies:

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket.) First aid should be administered while awaiting an ambulance or paramedics. All injuries and illnesses must immediately be reported to Project Health and Safety Manager.

Onsite First Aid Support

Onsite medical support during project execution will be available from two or more individuals who are trained in First Aid and Cardiopulmonary Resuscitation (CPR) and blood borne pathogens.

First aid kits shall be Type III, 16 unit kits, including one pocket mouthpiece or CPR barrier. Kits shall be checked prior to use, and at least weekly when work is in progress to ensure that contents are replaced as used.

Medical Transport of Employees and Case Management

For non-emergency injuries, a local clinic will be identified with the assistance of the Corporate Medical Consultant WorkCare, Inc. WorkCare Incident Intervention (II) will be contacted immediately to establish a medical treatment plan. If a clinical evaluation is determined to be necessary the WorkCare II physician/nurse will contact the clinic ahead of the arrival of the patient to establish oversight of case management. Under no

circumstances will an injured employee drive unescorted to a hospital, clinic, etc. An employee with minor injury may be transported by car after first aid treatment is given. The HSO or other project management personnel will transport the injured person to the facility. The employee who transports the injured person shall be trained in first aid and CPR whenever possible. When the injury is severe, or when in doubt concerning the severity of injury, the employee will be transported by ambulance.

Injured employees that require medical treatment or are taken to a doctor, hospital, clinic, etc., will not be allowed to resume work without a written return to work statement from the treating physician. This statement shall supply a medical diagnosis of the problem, the date of return to work, and work limitations. Should a return to work statement such as "light duty" be given, the treating physician will be contacted to determine the specific limitation. ER will make an assessment of work the employee normally performs whether or not the limitation interferes with the employee's normal work.

Whenever there are questions on the appropriateness of the diagnosis or prescribed course of treatment, WorkCare will be contacted to arrange for a second opinion. Copies of all Incident and Investigation Reports will be sent to the ER Project Health and Safety Manager.

13.3 Fire or Explosion:

In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival the RM or designated alternate will advise the fire commander of the location, nature and identification of the hazardous materials on-site.

If it is safe to do so, site personnel may:

- Use firefighting equipment available on site.
- Remove or isolate flammable or other hazardous materials which may contribute to the fire.

13.4 Spills, Leaks or Releases:

In the event of a spill or a leak, site personnel will:

- Locate the source of the spillage and stop the flow if it can be done safely.
- Begin containment and recovery of the spilled materials.

13.5 Evacuation Routes and Resources:

Evacuation routes have been established by work area locations for this site. All buildings and outside work areas have been provided with two designated exit points. Evacuation should be conducted immediately, without regard for equipment under conditions of extreme emergency. See site map for evacuation routes.

- Evacuation notification will be three blasts on an air horn, vehicle horn, or by verbal communication via radio.
- Keep upwind of smoke, vapors or spill location.
- Exit through the decontamination corridor if possible.
- If evacuation is not via the decontamination corridor, site personnel should remove contaminated clothing once they are in a location of safety and leave it near the exclusion zone or in a safe place.
- The RM will conduct a head count to insure all personnel have been evacuated safely.
- In the event that emergency site evacuation is necessary, all personnel are to:
 - Escape the emergency situation;
 - Decontaminate to the maximum extent practical; and,
 - Meet at the command post.
- In the event that the site is no longer in a safe zone, meet: Across Grand Avenue in front of the Post Office or upwind of the site.
- In the event of severe weather / tornado monitor weather reports and if necessary seek shelter at the Little Chute Fire Department Tornado Shelter 200 West McKinley Ave Little Chute, Wisconsin. A map to the Tornado Shelter will be posted in the Site office area.



**ENVIRONMENTAL
RESTORATION, LLC**

**ERRS REGION 5, CONTRACT EP-S5-09-05
SITE HEALTH AND SAFETY PLAN
SANDIES DRY CLEANER & LAUNDRY SITE**



**ATTACHMENT A
SITE SAFETY PLAN AMENDMENTS**



SITE SAFETY PLAN AMENDMENT	
Amendment No.:	
Site Name:	
Date of Issue:	
Type of Amendment:	
Reason for Amendment:	
Alternate Safeguard Procedures:	
Required Changes in PPE:	

USEPA On-Scene Coordinator (Date)

ER Response Manager (Date)

ER Project Health and Safety Manager (Date)

START Project Manager (Date)

START Safety Manager (Date)

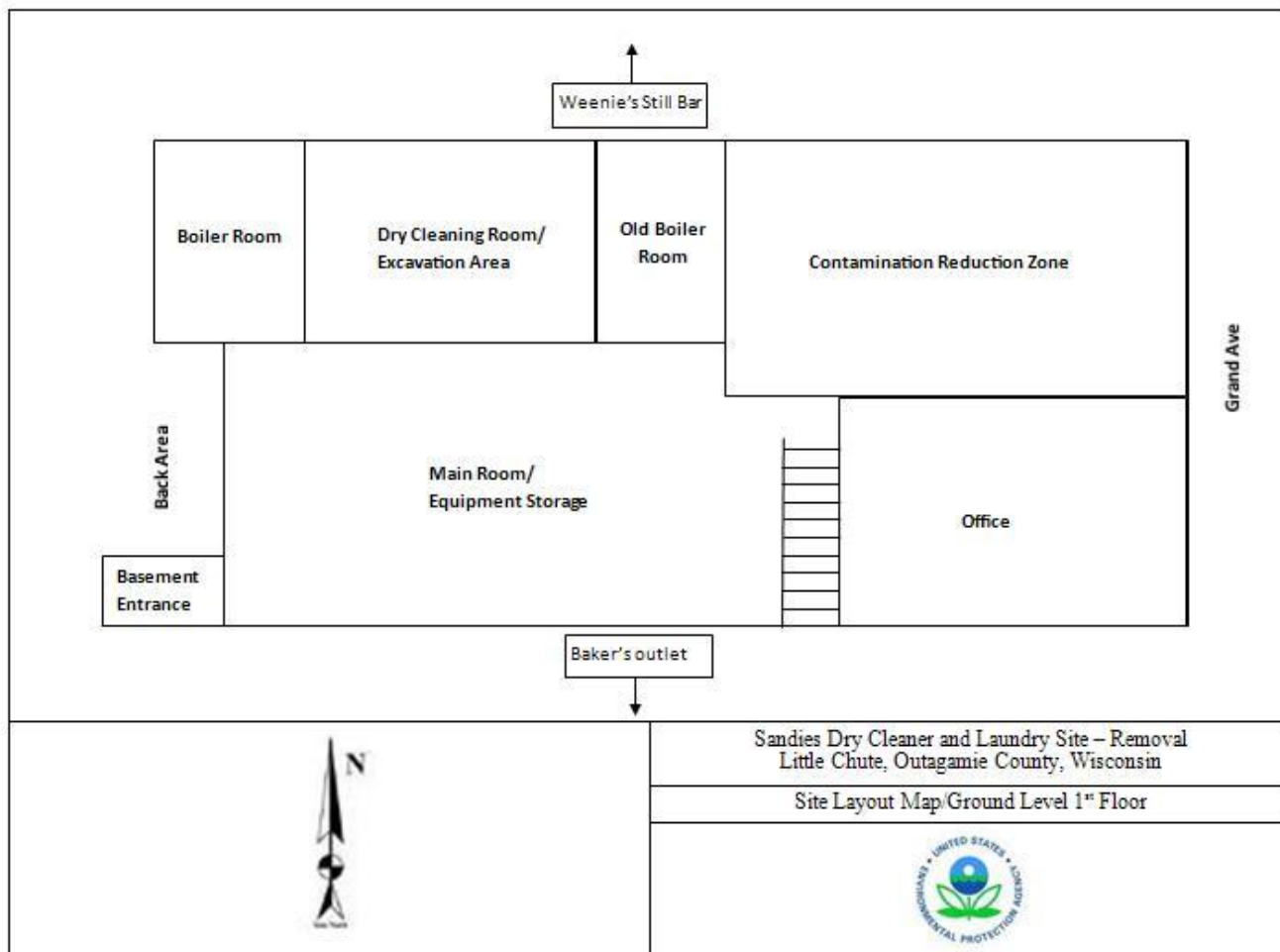


**ENVIRONMENTAL
RESTORATION, LLC**

**ERRS REGION 5, CONTRACT EP-S5-09-05
SITE HEALTH AND SAFETY PLAN
SANDIES DRY CLEANER & LAUNDRY SITE**

ATTACHMENT B

SITE MAPS



Total Travel Estimate: 5.16 miles - about 10 minutes



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A	513 Grand Ave Little Chute, WI 54140-1707	Miles Per Section	Miles Driven
●	1. Start out going north on Grand Ave toward E Main St / WI-96 .	Go 0.05 Mi	0.05 mi
↩	2. Take the 1st left onto W Main St / WI-96 . <i>Up the Hill is on the left</i> <i>If you reach E McKinley Ave you've gone about 0.1 miles too far</i>	Go 0.1 Mi	0.2 mi
↪	3. Take the 2nd right onto Madison St / CR-N . <i>Madison St is just past Monroe St</i> <i>If you reach Jefferson St you've gone about 0.1 miles too far</i>	Go 0.5 Mi	0.6 mi
↩	4. Turn left onto W North Ave / CR-OO . Continue to follow CR-OO W .	Go 3.8 Mi	4.5 mi
↩	5. Turn left onto N Meade St . <i>N Meade St is 0.3 miles past N Park Dr Ln</i> <i>Open Pantry Food Mart is on the right</i> <i>If you reach N Oneida St you've gone about 0.4 miles too far</i>	Go 0.7 Mi	5.2 mi
■	6. 1818 N MEADE ST is on the left . <i>Your destination is just past E Arnold St</i> <i>If you reach E Grant St you've gone a little too far</i>		5.2 mi
B	1818 N Meade St Appleton, WI 54911-3454	5.2 mi	5.2 mi

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9/8/2011



ATTACHMENT C

CHEMICAL HAZARD INFORMATION



Right to Know Hazardous Substance Fact Sheet

Emergency
Responders
Quick Reference

Common Name: **CARBON MONOXIDE**

Synonyms: Carbonic Oxide; Exhaust Gas; Flue Gas

CAS No: 630-08-0

Molecular Formula: CO

RTK Substance No: 0345

Description: Colorless, odorless gas

HAZARD DATA

Hazard Rating	Firefighting	Reactivity
2 - Health 4 - Fire 0 - Reactivity DOT#: UN 1016 ERG Guide #: 119 Hazard Class: 2.3 (Poisonous Gas)	Carbon Monoxide is a FLAMMABLE GAS. Stop flow of gas and use water spray to disperse vapors. POISONOUS GASES ARE PRODUCED IN FIRE. Use water spray to keep fire-exposed containers cool. Vapors may travel to a source of ignition and flash back. Carbon Monoxide may form an ignitable vapor/air mixture in closed tanks or containers.	Carbon Monoxide is not compatible with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE) and ALKALI METALS (such as LITHIUM, SODIUM and POTASSIUM). <i>Liquified, cold Carbon Monoxide</i> may react vigorously with water.

SPILL/LEAKS

Isolation Distance:

Small Spill: 30 meters (100 feet)

Large Spill: 150 meters (500 feet)

Fire: 800 meters (1/2 mile)

Stop flow of gas. If source of leak is a cylinder and the leak cannot be stopped in place, remove the leaking cylinder to a safe place in the open air, and repair leak or allow cylinder to empty.

Keep **Carbon Monoxide** out of confined spaces, such as sewers, because of the possibility of an explosion.

Turn leaking cylinder with leak up to prevent escape of gas in liquid state.

Purge with *inert gas* before attempting repairs.

Use only non-sparking tools and equipment, especially when opening and closing containers of **Carbon Monoxide**.

Carbon Monoxide is harmful to aquatic life at very low concentrations.

PHYSICAL PROPERTIES

Odor Threshold:	Odorless
Flash Point:	Flammable gas
LEL:	12%
UEL:	75%
Auto Ignition Temp:	1,125°F (607°C)
Vapor Density:	0.97 (air = 1)
Vapor Pressure:	>750 mm Hg at 68°F (20°C)
Specific Gravity:	0.79 (water = 1)
Water Solubility:	Very slightly soluble
Boiling Point:	-313°F (-192°C)
Melting Point:	-337°F (-205°C)
Critical Temp:	-282°F (-139°C)
Ionization Potential:	14 eV
Molecular Weight:	28

EXPOSURE LIMITS

OSHA: 50 ppm, 8-hr TWA

NIOSH: 35 ppm, 10-hr TWA; 200 ppm, 15-min Ceiling

ACGIH: 25 ppm, 8-hr TWA

IDLH: 1,200 ppm

The Protective Action Criteria values are:

PAC-1 = 83 ppm PAC-2 = 83 ppm PAC-3 = 330 ppm

PROTECTIVE EQUIPMENT

Gloves:	Insulated work gloves (double glove for spills)
Coveralls:	Tychem® BR, Responder® and TK (330-minute breakthrough) >10% LEL wear flash protection or turnout gear
Respirator:	SCBA

HEALTH EFFECTS

Eyes:	No information available
Skin:	Skin contact with <i>liquid Carbon Monoxide</i> can cause frostbite
Inhalation:	Headache, dizziness, lightheadedness and fatigue, convulsions and loss of consciousness

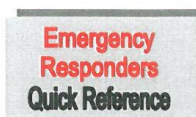
FIRST AID AND DECONTAMINATION

Remove the person from exposure.
Flush eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn.
In case of contact with liquid Carbon Monoxide, immerse affected part in warm water. Seek medical attention.
Begin artificial respiration if breathing has stopped and CPR if necessary.
Transfer promptly to a medical facility.
Medical observation is recommended as symptoms may be delayed.

January 2010



Right to Know Hazardous Substance Fact Sheet



Common Name: **TRICHLOROETHYLENE**

Synonyms: Ethylene Trichloride; TCE; Trichloroethene

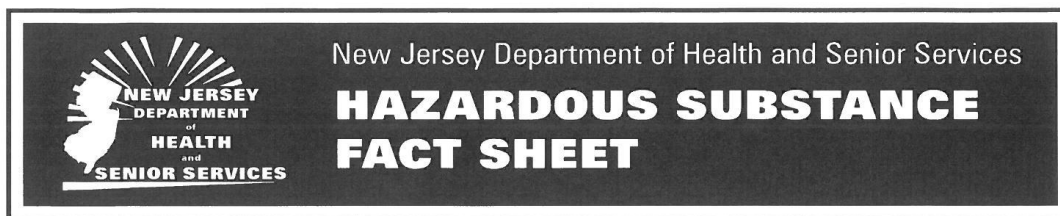
CAS No: 79-01-6

Molecular Formula: C_2HCl_3

RTK Substance No: 1890

Description: Clear, colorless liquid with a sweet, *Chloroform-like* odor

HAZARD DATA		
Hazard Rating	Firefighting	Reactivity
3 - Health 1 - Fire 0 - Reactivity DOT#: UN 1710 ERG Guide #: 160 Hazard Class: 6.1 (Poison)	<p>Trichloroethylene may burn, but does not readily ignite.</p> <p>Use dry chemical, CO_2, water spray or alcohol-resistant foam as extinguishing agents.</p> <p>POISONOUS GASES ARE PRODUCED IN FIRE, including <i>Hydrogen Chloride</i> and <i>Phosgene</i>.</p> <p>CONTAINERS MAY EXPLODE IN FIRE.</p> <p>Use water spray to keep fire-exposed containers cool.</p> <p>Use water spray to reduce vapors.</p> <p>Trichloroethylene accumulates static charge.</p>	<p>Trichloroethylene will react explosively with <i>finely divided</i> or <i>powdered</i> BARIUM, BERYLLIUM, and MAGNESIUM.</p> <p>Trichloroethylene reacts with ACTIVE METALS (such as LITHIUM, SODIUM and TITANIUM) to cause flashing and sparks.</p> <p>Trichloroethylene will react with STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE) and EPOXIDES to form spontaneously flammable <i>Dichloroacetylene</i>.</p> <p>Trichloroethylene is not compatible with STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC); ISOCYANATES; EPICHLOROHYDRIN; ALCOHOLS; and GLYCOLS.</p>
SPILL/LEAKS		PHYSICAL PROPERTIES
<p>Isolation Distance:</p> <p>Spill: 50 meters (150 feet)</p> <p>Fire: 800 meters (1/2 mile)</p> <p>Absorb liquids in vermiculite, dry sand, earth, fly ash or cement powder and place into sealed containers for disposal.</p> <p>DO NOT wash into sewer.</p> <p>Use only non-sparking tools and equipment, especially when opening and closing containers of Trichloroethylene.</p> <p>Metal containers should be grounded and bonded as Trichloroethylene accumulates static charge.</p> <p>Trichloroethylene is slightly toxic to aquatic life.</p>		<p>Odor Threshold: 1.4 ppm</p> <p>Flash Point: $>200^\circ F$ ($93^\circ C$)</p> <p>LEL: 8%</p> <p>UEL: 10.5%</p> <p>Auto Ignition Temp: $788^\circ F$ ($420^\circ C$)</p> <p>Vapor Density: 4.5 (air = 1)</p> <p>Vapor Pressure: 58 mm Hg at $68^\circ F$ ($20^\circ C$)</p> <p>Specific Gravity: 1.5 (water = 1)</p> <p>Water Solubility: Slightly soluble</p> <p>Boiling Point: $189^\circ F$ ($87^\circ C$)</p> <p>Melting Point: $-99^\circ F$ ($-73^\circ C$)</p> <p>Ionization Potential: 9.5 eV</p> <p>Molecular Weight: 131.4</p>
EXPOSURE LIMITS		PROTECTIVE EQUIPMENT
<p>ACGIH: 10 ppm, 8-hr TWA; 25 ppm, 15-min STEL</p> <p>IDLH: 1,000 ppm</p> <p>The Protective Action Criteria values are:</p> <p>PAC-1 = 130 ppm</p> <p>PAC-2 = 450 ppm</p> <p>PAC-3 = 3,800 ppm</p>		<p>Gloves: Silver Shield®/4H®, Viton and Barrier® (>8-hr breakthrough)</p> <p>Coveralls: Tychem® F, BR, LV, Responder®, and TK; Zytron® 500; ONESuit® TEC; and Trelchem® HPS and VPS (>8-hr breakthrough)</p> <p>Respirator: >10 ppm - Supplied air or SCBA</p>
HEALTH EFFECTS		FIRST AID AND DECONTAMINATION
<p>Eyes: Irritation and burns</p> <p>Skin: Irritation and burns</p> <p>Inhalation: Headache, dizziness, lightheadedness, visual disturbances, nausea and vomiting, and passing out</p> <p>Chronic: Cancer (liver, kidney, and lung) in animals</p>		<p>Remove the person from exposure.</p> <p>Flush eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn. Seek medical attention.</p> <p>Quickly remove contaminated clothing and wash contaminated skin with large amounts of soap and water. Seek medical attention.</p> <p>Begin artificial respiration if breathing has stopped and CPR if necessary.</p> <p>Transfer promptly to a medical facility.</p>



Common Name: **TETRACHLOROETHYLENE**

CAS Number: 127-18-4
DOT Number: UN 1897

RTK Substance number: 1810
Date: April 1996 Revision: March 2002

HAZARD SUMMARY

- * **Tetrachloroethylene** can affect you when breathed in and by passing through your skin.
- * **Tetrachloroethylene** should be handled as a **CARCINOGEN--WITH EXTREME CAUTION**.
- * **Tetrachloroethylene** can cause reproductive damage. Handle with extreme caution.
- * Contact can cause skin irritation, burns and drying and cracking of the skin.
- * Exposure to **Tetrachloroethylene** can irritate the eyes, nose, mouth and throat.
- * High exposure can cause headache, dizziness, lightheadedness, nausea, vomiting and even passing out.
- * Breathing **Tetrachloroethylene** can irritate the lungs causing coughing and/or shortness of breath. Higher exposures can cause a build-up of fluid in the lungs (pulmonary edema), a medical emergency, with severe shortness of breath.
- * **Tetrachloroethylene** may damage the liver and kidneys and affect the nervous system.

IDENTIFICATION

Tetrachloroethylene is a clear liquid with a sweet *Chloroform*-like odor. It is used in dry cleaning and metal degreasing.

REASON FOR CITATION

- * **Tetrachloroethylene** is on the Hazardous Substance List because it is regulated by OSHA and cited by ACGIH, DOT, NIOSH, NTP, DEP, IARC, HHAG, NFPA and EPA.
- * This chemical is on the Special Health Hazard Substance List because it is a **CARCINOGEN**.
- * Definitions are provided on page 5.

HOW TO DETERMINE IF YOU ARE BEING EXPOSED

The New Jersey Right to Know Act requires most employers to label chemicals in the workplace and requires public employers to provide their employees with information and training concerning chemical hazards and controls. The federal OSHA Hazard Communication Standard, 1910.1200, requires private employers to provide similar training and information to their employees.

- * Exposure to hazardous substances should be routinely evaluated. This may include collecting personal and area air samples. You can obtain copies of sampling results from your employer. You have a legal right to this information under OSHA 1910.1020.
- * If you think you are experiencing any work-related health problems, see a doctor trained to recognize occupational diseases. Take this Fact Sheet with you.
- * **ODOR THRESHOLD = 47 ppm.**
- * The range of accepted odor threshold values is quite broad. Caution should be used in relying on odor alone as a warning of potentially hazardous exposures.

WORKPLACE EXPOSURE LIMITS

OSHA: The legal airborne permissible exposure limit (PEL) is **100 ppm** averaged over an 8-hour workshift, **200 ppm** not to be exceeded during any 15 minute work period, and **300 ppm** for 5 minutes during any 3 hours.

NIOSH: Recommends that exposure to occupational carcinogens be limited to the lowest feasible concentration.

ACGIH: The recommended airborne exposure limit is **25 ppm** averaged over an 8-hour workshift and **100 ppm** as a STEL (short-term exposure limit).

- * **Tetrachloroethylene** may be a **CARCINOGEN** in humans. There may be no safe level of exposure to a carcinogen, so all contact should be reduced to the lowest possible level.
- * The above exposure limits are for air levels only. When skin contact also occurs, you may be overexposed, even though air levels are less than the limits listed above.

WAYS OF REDUCING EXPOSURE

- * Where possible, enclose operations and use local exhaust ventilation at the site of chemical release. If local exhaust ventilation or enclosure is not used, respirators should be worn.
- * Wear protective work clothing.
- * Wash thoroughly immediately after exposure to **Tetrachloroethylene** and at the end of the workshift.



Right to Know Hazardous Substance Fact Sheet



Common Name: **DIESEL FUEL**

Synonyms: #2 Heating Oil; Distillate (Light) Diesel Fuels

CAS No: 68476-34-6

Molecular Formula: Unspecified

RTK Substance No: 2444

Description: Brown to straw-colored, slightly thick liquid with a Petroleum odor

HAZARD DATA		
Hazard Rating	Firefighting	Reactivity
1 - Health 2 - Fire 0 - Reactivity DOT#: UN 1202 ERG Guide #: 128 Hazard Class: 3 (Flammable)	Diesel Fuel is a COMBUSTIBLE LIQUID. Use dry chemical, CO ₂ , water fog or foam as extinguishing agents. POISONOUS GASES ARE PRODUCED IN FIRE, including <i>Sulfur Oxides</i> and <i>Nitrogen Oxides</i> . CONTAINERS MAY EXPLODE IN FIRE. Use water spray to keep fire-exposed containers cool. Vapors may travel to a source of ignition and flash back.	Diesel Fuel is not compatible with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE) and ALKALI METALS (such as LITHIUM, SODIUM and POTASSIUM). Diesel Fuel may accumulate static electrical charge of sufficient energy to cause a fire and/or explosion in the presence of flammable and/or combustible materials.

SPILL/LEAKS
Isolation Distance: Small Spill: 60 meters (200 feet) Large Spill: 330 meters (1,100 feet) Fire: 800 meters (1/2 mile) Absorb liquids in vermiculite, dry sand, earth, or a similar material and deposit in sealed containers. DO NOT wash into sewer. May affect aquatic life.

PHYSICAL PROPERTIES
Odor Threshold: 0.7 ppm Flash Point: >125°F (>52°C) LEL: 0.6% to 1.3% UEL: 4.7% to 7.5% Auto Ignition Temp: 351° to 624°F (177° to 329°C) Vapor Density: >3 (air = 1) Vapor Pressure: less than 1 mm Hg at 68°F (20°C) Specific Gravity: 0.87 to 0.95 (water = 1) Water Solubility: Insoluble Boiling Point: 340° to 676°F (171° to 358°C) Molecular Weight: varies by composition

EXPOSURE LIMITS
OSHA: None NIOSH: Lowest feasible (<i>Diesel Exhaust</i>) ACGIH: 100 mg/m ³ , 8-hr TWA IDLH: None

PROTECTIVE EQUIPMENT
Gloves: Nitrile and Neoprene Coveralls: DuPont Tychem® SP, Polycoat, F, BR, LV, Responder® and TK; Kappler® Zytron® 200 and Zytron® 300; and Saint-Gobain ONESuit® TEC Respirator: >100 mg/m ³ - APR with Organic vapor cartridge and particulate pre-filters >1,000 mg/m ³ - Supplied air

HEALTH EFFECTS
Eyes: Irritation Skin: Irritation, drying and cracking with redness and swelling Inhalation: Nose, throat and lung irritation with coughing, wheezing and shortness of breath. Headache, dizziness, blurred vision, and loss of balance and coordination

FIRST AID AND DECONTAMINATION
Remove the person from exposure. Flush eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn. Quickly remove contaminated clothing and wash contaminated skin with large amounts of soap and water. Begin artificial respiration if breathing has stopped and CPR if necessary. Transfer to a medical facility.



**ATTACHMENT Z
SITE-SPECIFIC TRAINING RECORD**



SITE-SPECIFIC TRAINING RECORD

This is to advise that _____ conducted a Site-Specific Training
(Instructor's name)
course for _____ at the
(Company Name)
_____ project on _____.
(TO #, Project Name) (Date)

The total duration of the instructions was _____ hours.

Instruction covered the topics checked off below:

- Site Location, Description and History ☐
- Potential site hazards (chemical, physical, and biological) ☐
- Chemical, physical, and toxicological properties of site contaminants ☐
- Safe work practices ☐
- Training requirements ☐
- Medical Surveillance ☐
- Control Zones ☐
- Monitoring ☐
- Selection, use, and limitation, of personal protective equipment ☐
- Personnel and equipment decontamination ☐
- Emergency response procedures ☐
- Hazard communication ☐
- Blood borne pathogen briefing ☐

The following participant attended the training course for the full duration indicated above.

Name (Print)

Signature