*CEM SERVICES*

# Site Specific Health and Safety Plan

# For

# Site Characterization

# At

# 1130 Niagara Street, Buffalo NY

## January 2014

**REVISION #___1.2_____**

**REVISION #_____**

PREPARED BY: MARK A. COTTER ; MS, CIH, CSP

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## APPROVALS AND SIGNATURE

**Raj Chopra**

**Site Safety Representative- CEM Inc.** **Date**

**Mark A. Cotter CIH, CSP**

**Certified Industrial Hygienist # 5897** **Date**

# Health & Safety Plan
# 1130 Niagara Site

## Executive Summary

This site specific Health and Safety Plan (HASP) is designed for ensure worker protection for work involving the site investigationof the former 1130 Niagara facility. This work does involve sub grade excavation.. This HASP was written to meet job specifications for Project #1130 Niagara Street.

This site specific Health and Safety Plan (HASP) sets forth the requirements and procedures necessary to protect the workers, public, and environment during the execution of the contract .The health and safety protocol established in this site specific Health and Safety Plan (HASP) are based upon the available site data provided Numerous Documentation reviewed for this HASP includes, project site investigations received by CEM Services, Inc and provides site background information and chemical hazards known and/or anticipated to be present based This Site Specific Health and Safety (HASP) is intended solely for use of this specific project at 1130 Niagara Site, Niagara Falls, New York and is intended to be a minimal requirements for all workers at this job site.

Based on changing site conditions and unforeseen conditions there may be a need to amend and modify this site specific Health and Safety Plan (HASP) which will trigger a need for future review and approval .

All operations and equipment used in association with the referenced excavation construction project will, comply with all applicable Federal, State, Local health and safety regulations including;

- 29 CFR 1910, General Industry, Occupational Safety and Health (OSHA) Safety and Health Standards
- 29 CFR 1926, Construction Industry, OSHA Safety and Health Standards
- NYS ICR 56 and EPA NESHAPS and NYS Engineering approved Variance
- Other applicable Federal, State, and Local regulations

It is CEM Services, Inc's responsibility to comply with applicable federal, state and local regulations in the execution of this project. In concert with the applicable laws, CEM Services, Inc personnel and subcontractor employees will comply with the procedures set forth in this site-specific HASP to meet project objectives and ensure worker protection.
All Contractor personnel, Subcontractor personnel, visitors, and other qualified persons wishing to gain entry to the site (work area as defined in subsequent sections of this document) after the start of work will:

1. Read or review the contents of this HASP with the Site Superintendent or Health and Safety Manager; and

2. Acknowledge, in writing, on the attached worker HASP Certification Form, their understanding of this HASP and all revisions made to it. (Figure 1.0)

## FIGURE 1.0

## WORKER HASP CERTIFICATION FORM

All Contractor personnel, Subcontractor personnel, visitors, and other qualified persons requesting entry to the regulated work areas are required to complete Worker HASP Certification Form (Figure 1.0) to acknowledge their understanding of this HASP.

NOTE: A copy of this HASP will be maintained by CEM Services, Inc in the field office for review by Government, Contractor, and/or Subcontractor personnel.

| **The following undersigned certify that this Health and Safety Plan (HASP) has been communicated and they understand will follow stated procedures to ensure worker protection and maintain regulatory compliance** | | | |
|---|---|---|---|
| **Printed Name** | **Signature** | **Company** | **Date** |
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# Section 1.0

# Project Description

## 1.1 Site Description and Background

The Site has been occupied by several businesses since approximately 1925 including a steel company, a bowling alley, an auto parts and service station, a contractor's yard, and a storage facility. From 1960-2005, Curtis Screw Co., Inc. occupied the Site as a manufacturer of machined parts for the automotive industry. The products were manufactured primarily of steel and aluminum, but also included brass. The plant included assorted machining operations such as screw machining, die grinding, aqueous cleaning, and scrap metal recovery, oil recovery, and degreasing. Based on information from the Erie County Department of Real Property Tax Services available at http://www.erie.gov/ecrpts/webprop.asp, Curtis Screw Co., Inc. was identified as the owner of the Site from 1960 to 2005. Gerspach Properties, LLC purchased the Site in 2005. The Site was utilized by Leisure Living from 2005-2008, a swimming pool products online retailer, to operate its business and store its inventory. In June 2008 a fire destroyed parcel 2 portion of the property. Leisure Living moved its operations to Tonawanda following the fire but continues to store some pool supplies at the Site. The office area remains vacant.

## 1.2 General Summary of Work

CEM Services, Inc will provide all necessary labor, equipment, materials, temporary site controls, facilities, and utilities as required to complete the work described in the Site proposal. It is anticipated that airborne levels of will be minimal at near surface soil elevations.

The scopes of work (SOW) to be performed by CEM Services, Inc in association with this contract generally are as follows:

- Obtain required approvals and mobilize to project site;
- Call Dig Safe NY

- Initial delineation of work zones. Delineation of work zones may be subject to change based upon the results of CEM Services, Inc's work procedures and locations and coordination with NYS DEC.

- Set up staging and decontamination areas, as necessary.

- Implementation of, community ( perimeter) monitoring and engineering controls

- Place and maintain during the initial phase of the project barricades, warning signs, and hazard markings.

- Provide an excavator to dig trenches.

- Provide a Drill rig to put in monitoring wells and soil samples.

The site shall be operated and maintained by CEM Services, Inc throughout the duration of the Contract as specified in the Contract Documents. The requirements of the HASP shall be in effect from initial site mobilization through final demobilization. The requirements of this HASP including modification to standard operating procedures, engineering controls and levels of personal protective equipment that may be required during this project based upon changing site conditions, the availability of data, personal sampling results and environmental monitoring. Such changes will be published as a revision to this document and will be distributed to the Owner and affected employees.

## Section 2.0

## Hazard Assessment & Risk Analysis

A hazard assessment and risk analysis for chemical, physical, and biological hazards associated with this project is presented in Table 1.0 Task specific procedures that specifies control measures for specific tasks to ensure the health and safety of workers on this job site are presented in Table 2.

### Table 1.0
### Hazard Assessment & Risk Analysis

| Task | Potential Exposure Risk |
|---|---|
| Mobilization/Demobilization | Low |
| Site Set-Up | Low |
| Sampling | Moderately |
| Operation of heavy equipment | Moderately |
| Drill Rig operation | Moderately |
| Backfill of site | Low |
| | |

**Anticipated Exposure Risk Definitions:**

LOW = Non-Intrusive Work--No Chance of Exposure.

SLIGHT = Non-Intrusive Work, Possible Safety Hazards with Tools-Little to No Chance of Exposure.

MODERATE = Non-Intrusive Work, Possible Safety Hazards with Powered Tools, Heavy Equipment, and/or work near or in water. No Possible Exposure to Contaminants.

MODERATELY/Intrusive Work, Possible Safety Hazards with Equipment--Exposure to Contaminants.

HIGH = Possible.

HIGH = Intrusive Work, Possible Safety Hazards with Equipment--Exposure to Contaminants Probable.

## 2.1 Chemical Hazards

The primary chemical hazard substances known or suspected to exist on-site based upon the analytical data provided by includes; non friable asbestos and poly aromatic hydrocarbons (PAH) in the soil. The hazards associated with these chemical substances are discussed in Table 2 in Section 3. The potential routes of exposure for these contaminants include inhalation, ingestion and dermal contact.

- **PAH'S**

There is known polyaromatic hydrocarbon (PAH'S) soil contamination on the site. The depth and concentration of PAH contaminated soil has been documented Potential routes of exposure to this contaminant include inhalation, ingestion, and dermal contact. Exposure to PAH be may be harmful to the central nervous system, the kidneys or the liver. PAH exposure may also cause irritation when they contact the skin, or may irritate mucous membranes if they are inhaled. Some PAH are known or suspected carcinogens (or cancer-causers). Levels of personal protective equipment and the air-monitoring schedule are discussed in subsequent sections of this HASP

The levels of personal protective equipment (PPE) identified in Section 5.0 of the HASP have been assigned by task, known/anticipated chemical toxicity, and potential exposure risks. Action levels for PPE upgrade/ downgrades are based on OSHA Action Levels and Permissible Exposure Levels (PEL'S) to ensure worker safety based on air monitoring results, the level of PPE may require modification as work progresses

- .**TCE**

TCE is known to be on the site, exact location and amounts are unknown. TCE exposure has been shown to be associated with central nervous system symptoms such as headaches, dizziness, and confusion. Additional effects include liver, kidney, immunological, endocrine, and respiratory problems (1). In adults, TCE exposure was associated with increased risk of liver and biliary tract cancer, and marginally increased risk of non-Hodgkin's lymphoma (1, 11).
The levels of personal protective equipment (PPE) identified in Section 5.0 of the HASP have been assigned by task, known/anticipated chemical toxicity, and potential exposure risks.

## 2.2 Physical Hazards

The following general, physical, and ergonomic hazards may be associated with this project:

1. **Potential Hazard:** Possible injury resulting from the operation of heavy equipment.

   **Procedure(s) to Mitigate Hazard:** (1) Before any machinery or mechanized equipment is placed in use, it will be inspected and tested by a competent person and certified to be in safe operating condition. CEM Services, Inc will designate a competent person to be responsible for the inspection of all machinery and equipment daily and during use to make sure it is in safe operating condition. Tests will be made at the beginning of each shift during which the equipment is to be used to determine that the brakes and operating systems are in proper working condition. Any machinery or equipment found to be unsafe will be tagged and its use prohibited until unsafe conditions have been corrected. (2) Only qualified personnel will operate machinery and mechanize equipment. (3) Equipment deficiencies observed at any item that affect their safe operation will be corrected before continuing operation.

2. **Potential Hazard:** Possible exposure to continuous sound pressure levels in excess of 85 dBA

continuous noise or 140 dBA impact or impulse noise (i.e., split-spoon hammer) during heavy equipment operation.

**Procedure(s) to Mitigate Hazard:** An audio dosimeter will be utilized to measure sound levels during work activities to ensure compliance with 29CFR 1926.52. PPE (disposable earplugs or earmuffs with a noise rating reduction NRR rating of 25 or greater) will be worn if OSHA action levels for noise levels are achieved. Noise hazards will be evaluated by the on- site Cerrone health and safety manager.

3. **Potential Hazard:** Uncontrolled release of hazardous energy (kinetic and/or potential [stored]).

   **Procedure(s) to Mitigate Hazard:** The Lockout/Tag out procedures provided in CEM Services, Inc Employee Safety Manual will be followed when working on machines and equipment in which the unexpected energizing or start-up of the machines or equipment, or release of stored energy could cause injury to employees.

4. **Potential Hazard:** Slips, Trips, and Falls.

   **Procedure(s) to Mitigate Hazard:** (1) Exercise extreme caution in all work areas. (2) Be sure of footing during equipment access/egress and when moving through the work area. (3) avoid stepping or standing on uneven or unsteady surfaces. (4) Clearly delineate open pits, wells, and other fall hazards with orange safety fencing. Securely cover as appropriate.

   Although not anticipated any time that employees will be exposed to a fall hazards or leading edge hazards during the course of the excavation work, in the event a fall hazard exists protection or provide fall protection to prevent will be implemented in accordance with the CEM Services, Inc Employee Safety Manual and applicable regulations.

   Proper project housekeeping is the key to preventing any slip, trips, or falls. Project personnel will do everything possible to keep the project site neat and tidy. Material and equipment storage will be limited to designated staging areas.

5. **Potential Hazard:** Lifting/Carrying.

   **Procedure(s) to Mitigate Hazard:** (1) Limit lifting to low weight. (2) Lift with legs, not back. (3) Use forklift, drum cart, or other appropriate equipment whenever possible. (4) Get assistance.

6. **Potential Hazard:** Exposure to inclement weather.

   **Procedure(s) to Mitigate Hazard:** (1) Follow the procedures for the prevention and/or treatment of heat or cold stress (if ambient air temperatures exceed $70^{o}$F or drop below $40^{o}$F) described in CEM Services, Inc Employee Safety Manual. (2) Adhere to the emergency response procedures provided in Section 10.0 of this HASP.

7. **Potential Hazard:** Housekeeping/Site Security

   **Procedure(s) to Mitigate Hazard:** (1) Store equipment property. (2) Remove rubbish/scrap material from work area. (3) Ensure no equipment or materials are left unattended. (4) Keep all tools, heavy equipment and materials locked in temporary site lock-up facility.

8. **Potential Hazard:** Vehicle Traffic

**Procedure(s) to Mitigate Hazard:** (1) Utilize warning signs and flagman (men) as appropriate to direct traffic away from work area. (2) Adhere to requirements of Contract Documents and site usage plan. (3) Don high visibility vests as required.

9. **Potential Hazard:** Hand/Power Tools

**Procedure(s) to Mitigate Hazard:** (1) Verify that guards and safety devices are in place before, during, and after operation. (2) Maintain and inspect per manufacturer's recommendations. (3) Utilize proper PPE.

10. **Potential Hazard:** Above and/or Underground Utilities within Work Area(s)

**Procedure(s) to Mitigate Hazard:** (1) Obtain a site utility plan or mark out and ensure that electrical lines (if any) are not energized. (2) Obtain identification of all underground facilities in areas, which are to be excavated or graded from those parties owning the facilities prior to commencement of work. (2) Adhere to guidelines set forth in the CEM Services, Inc Employee Safety Manual. (3) Contact UFPO New York One Call system for stake out and confirmation of all utility disconnects.

11. **Potential Hazard:** Heat stress Monitoring

The contractor will monitor personals' heart rate and oral temperature on days of extreme weather conditions.

12. **Potential Hazard:** Training and Experience of heavy equipment operators

The contractor will maintain record and experience of each individual operator and particular use of equipment

13. **Potential Hazard:** Lock out/ Tagout

Although not anticipated the contractor will use the lockout tagout procedures if required in the CEM Services safety manual.

Records of all safety and health inspections that are conducted on-site will be maintained by CEM Services safety manager.

# Table 2

## Task Specific Procedures
## 1130 Niagara Site

| Task | Sub-Tasks | Activity | Hazard | Protective Measures |
|---|---|---|---|---|
| Initial Mobilization and Demobilization | Walking site, Equipment delivery | Use of hand tools/equipment. Survey site. | Risk from working around trucks and equipment. Minimal anticipated exposure to contaminants based on limited data provided by. | Engineering controls such as proper training/work practices use of PPE such as hard hats, safety glass, gloves and vests. **LEVEL D protection** |
| Site Set-Up | Mobilization, wash station, demarcate areas, site layout | Demarcate work areas. | Work around heavy equipment, lifting, pinch point, trips/falls, cuts, etc. | Engineering controls such as proper training/work practices use of PPE such as hard hats, safety glass, and vests. **LEVEL D protection** |
| Test Trenches and Drilling | Dig test trench areas and drill rig for soil/water sampling | Use of heavy equipment, power tools, and hand tools | Falls, cuts, injury from falling objects, and release of kinetic or stored energy, electrical hazards, and work around heavy equipment. | Use of proper working practices (i.e., lock-out/ tag-out), and PPE. Proper heavy equipment operation. **Modified D/LEVEL C protection** |
| Backfilling and Re-grading | use of excavated material as backfill. | Trucking, loading, and unloading | Potential trench cave-in, engulfment in materials, potential exposure to particulates. Work around heavy equipment. | Proper heavy equipment operation, proper loading and unloading, sloping and shoring, use of engineering controls such as water to control particulate. PPE for backfill if excavated material is used. **LEVEL D protection** |

# Section 3.0
# Standard Operating Procedures

## 3.1 General

The following standard operating procedures will be implemented for all work tasks associated with below grade soils disturbance. The procedures set forth in this section are subject to change based upon on-going review of air monitoring samples for both personal sample results collected by CEM Services, Inc's third party consultant and the environmental monitoring results collect and provided by or their duly authorized representative. Any changes to these procedures will be published as a revision to this document and distributed to employees working on this project.

### 3.1.1 Health and Safety Officer

The health and safety officer

### 3.1.2 Emergency Co-Ordinator

The emergency co-ordinator will be CEM Servicess site supervisor. His responsibilities will be implement the emergency procedures and report to an emergency response agencies, he will need to identify the hazards and stabilize the situation. He will take reasonable measures to control the site from fire or explosion and on a daily basis plan the evacuation routes and communicate to employees. He will also be responsible for all follow up activities of the incident.

## 3.2 Engineering/ Dust Suppression Controls

The PAH's in the soil may pose a health hazard when soil is disturbed and contaminated soil particulates become airborne. The primary engineering control to mitigate fugitive particulate emissions will be water to periodically mist the soil and haul roads.
CEM Services Inc. will monitor and control the dust and particulate emission and effectiveness of dust suppression. Dust Suppression will be maintained by CEM Services Inc. and will be responsible to ensure that sufficient water is available for dust suppression. Dust suppression techniques, during excavation is further identified in the work plan.
CEM Services Inc. will review the results of the airborne particulate dispersion calculations and modify the dust suppression system(s) accordingly. All applicable Local, State and Federal regulations shall be followed.
Trucks and construction equipment will use caution and prudent speeds to further help mitigate particulate migration.

## 3.3 Administrative Controls

All contractor employees performing work within the excavation work zone or decontamination stations must complete site-specific training and orientation prior to the commencement of their work. The training will include but not be limited to the following:

- Standard operating procedures;
- Site specific hazards and risk analysis:
- Hazard recognition;
- Requirements and use of personal protective equipment;
- Communication of the site usage plan detailing work zones, haul roads and decontamination stations;

- Personal and equipment decontamination procedures;
- Environmental and personal monitoring program and results;
- Emergency contingency procedures including evacuation routes and muster points will be established
- General corporate and site safety rules.

Any subcontractors wishing to gain entry to the site will be required to obtain a copy of this HASP prior to site admittance and to follow its guidelines while on the job. A consent form must be signed and filed on-site with CEM Services, Inc. Subcontractors are responsible for ensuring that their employees conform to all health and safety regulations.

### 3.3.1 Emergency and First Aid

The contractor will have available the following on-site, including a trained person in first aid.

- First aid kit containing medications, burn treatment, abrasion, fractions to accommodate the amount of employees on-site
- Portable eye wash
- (1) 20lb fire extinguishers
- Blankets and Towels
- Emergency siren

### 3.3.2 Site Communications

The contractor will provide the following:

- Post emergency numbers
- Ensure employees work in the buddy system
- Provide an employee alarm system
- Furnish employees with two-way radios

### 3.3.3 Safety Meetings

The contractor will provide a daily “toolbox” safety meeting and also discuss the daily activities and issues on the project. The health and Safety officer an conduct additional meetings if necessary.

### 3.3.4 Custodian

The contractor will assign a custodian to the Health and Safety officer to maintain the H&S equipment and supplies

### 3.4 Personal Hygiene

All contractor employees performing work within the excavation work zone or decontamination station(s) must comply with the following personal hygiene requirements:

- Eating, drinking, chewing gum/tobacco, smoking, applying cosmetics or any other activity which increases the probability of hand to mouth contact is strictly prohibited.
- Upon exiting the work area and completion of decontamination procedures eating, drinking, chewing gum/tobacco, smoking or application of cosmetics will be permitted in designated areas.
- Carrying of food, beverage, cosmetic or tobacco items into the work area is prohibited.
- Practice good hygiene by changing soiled clothing/PPE regularly and by washing face, neck, hands and forearms when needed.
- Ensure that all safety equipment and personal protective equipment and clothing are kept clean and well maintained.
- All regulations will be posted on site.

### 3.5 Establishment/Control of Work Zones

CEM Services, Inc Project Team will be responsible for establishing regulated work zones Work Zones shall be defined as follows:

- **Regulated Work Zone.** The Regulated Work Zone shall include all areas where demolition is occurring, inside the fence line and or, where air monitoring results for PAH's has exceeded the OSHA action Levels. The level of PPE required in regulated work zones with elevated PAH airborne concentrations shall be decided by project safety manager in consultation with project Certified Industrial Hygienist (CIH) and be based on the airborne concentrations of PAH's. PPE may include HEPA cartridges, Type coveralls and gloves. Potential downgrade to Level D will be determined by the site health and safety manager after air monitoring results are deemed below OSHA Action Levels (AL). As work within the regulated work zone proceeds, the delineating boundary shall be relocated as necessary to prevent the accidental contamination of nearby people and equipment. High visibility, orange safety fencing and/or caution tape shall delineate the regulated work zone.

- **Unauthorized persons will not be permitted entry into Regulated Work Area**

1. CEM Services, Inc will insure that all work zones are properly established and maintained.

2. All work areas will be clearly laid out and delineated to prevent unauthorized access.

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### 3.6 Hazardous Waste Removal, Transport, Disposal and Spills

- All on- site solid materials (soil, concrete, etc.) will remain on-site pending sampling/ analysis at a certified laboratory and tested for potential hazardous constituents and approval is obtained from landfill for appropriate disposal in accordance to Federal and New York State disposal regulations.

- CEM Services, Inc will dispose of all used personal protective equipment that cannot be decontaminated.

- In the event of a spill or leak of a petroleum product and or other material that could have adverse impact on person or environment, the employee making the discovery will immediately notify his/her supervisor and CEM Services Inc. On-Site safety Manager for evaluation and response . and whether the leak is an incidental spill that will be cleaned immediately or whether an emergency response is required.

- Responses to incidental releases of hazardous substances where the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel are not considered to be emergency response operations. Incidental releases will be contained and cleaned up by personnel in the area. Instruction will be provided in the cleanup of spills, including the use of spill kits for non-emergency spills.

- If there is a probability that the spill will extend beyond the immediate area, result in an environmental release, or exceed the capabilities of the on-site personnel, the Site Manager is to inform the CEM Services Inc. who will determine whether a response by the Spill Response Team is If emergency response crews are mobilized, the supervisor or knowledgeable employee will provide the responders with relevant information.

### 3.7 Site Specific Safety Rules

Workers shall refrain from unsafe and improper practices, including both the violation of written rules and regulations and generally accepted practices in the industry for safe conduct. CEM Services Inc. will conduct daily tool box safety meeting prior to start of work.

- The use of alcoholic beverages, intoxicants, narcotics, marijuana, or other similar substances, by employees, or their possession, while on duty or on City's property is prohibited. Workers shall not be permitted to report for duty under the influence of any alcoholic beverage, intoxicant, narcotic, marijuana, or other controlled substance, or any medication, including those prescribed by a doctor, that may in any way adversely affect their alertness, coordination, reaction, response or safety.
- Scuffling, horseplay, practical jokes, and all conduct of a similar nature, is prohibited.
- All vehicle accidents related to project activities, both on-site and off-site, shall be reported immediately to the Project Safety Manager
- All persons are prohibited from having firearms or other weapons, including knives with a blade in excess of three inches, in their possession while on duty or on City's property, except those authorized to have them in the performance of their duties or those given special permission.
- Good housekeeping shall be established for the prevention of accidents, injuries and fires. Clean-up will be conducted on a daily basis.
- Objects that constitute a slipping or tripping hazard must not be left in walking areas.
- Workers must not wear or use anything that impairs vision or hearing except hearing protection as required by specific activities. Listening to personal MP3 players, radio, CD, or tape players is

prohibited while on duty.

- Machines or vehicles must not be left unattended with the engine running. If a machine is left unattended, it must be in gear with brakes set. If it is equipped with a blade, pan or bucket, the blade, pan, or bucket shall be lowered to the ground.
- All machinery and equipment left unattended must be left inoperable and secured against movement.
- Workers must not create any condition at the work site that would interfere with natural water drainage.
- Safeguards and safety signs shall be provided by the Contractor and shall be kept in place and in good condition.
- Equipment and vehicles must be operated at a safe speed, being aware of operating conditions

## 3.8 First Aid/Medical

- At least one person who has current training and certification in first aid and Cardiopulmonary Resuscitation (CPR) will be on site at all times when work is being performed. The first-aid program will comply with OSHA 29 CFR 1926.50. A fully stocked first-aid kit will be maintained on site at the CEM Services Site Trainer / Office. In the event of an accident involving personal injury or illness, minor first aid treatment shall be administered.

- CEM Services Inc. shall maintain the capability to make emergency calls to ambulance services at all times. In most circumstances, an injured person will be taken to the medical facility for sprains/strains, minor cuts and abrasions and similar injuries. If the injury or illness is determined to be life threatening, the designated medical facility will be notified.

## 3.9 Emergency Response / Site Evacuation / Contingency Plan

- CEM Services Inc shall report and investigate accidents, injuries and illnesses; and analyze related data for trends and lessons learned.
- CEM Services will notify the Engineer and Health Safety Officer
- All personnel will be decontaminated and treated with first aid if necessary

- Emergency contact information including telephone numbers of NF Memorial hospital, Fire department, NYSDEC Spill Response Office, Etc. will be posted on site at CEM Services Inc trailer/ office and this list of emergency numbers will be provided to all contractors on site.

- CEM Services Inc must immediately notify verbally, and then in writing (within 24 hours), of any on-site event or condition that adversely affects, or may adversely affect personnel, the public, property, or the environment.

- In situations where any of the conditions mentioned above occur, the scene surrounding or associated with the event shall be preserved for full and joint investigation of each injury/illness, accident, incident, near miss, or environmental non-compliance.

- In the event that site evacuation is required, the CEM Services Inc On-Site Safety Manager will become incident commander and direct all staff to assembly area. A head count will be taken to determine if all on- site personnel are accounted for. Emergency response personnel will be contacted as necessary.

- CEM Services will evacuate workers to an up wind location

- Identification and air monitoring of contaminates if there is a release

- A means of egress will be maintained at all times. Vehicles and equipment will be positioned so they will not block access to any exit or main thoroughfare.

- Fire protection equipment will be readily available and in working order as required by OSHA 29 CFR 1926.150. All regulations of the OSHA 29 CFR 1926, Subpart F will be followed. Fire protection will be implemented through the use of measures to include effective housekeeping, providing adequate numbers of fire extinguishers, and controlled storage of flammable liquids and other combustible materials.

- In the event of a fire, the Niagara Falls Fire Department is to be notified immediately. However, If it is safe to do so and they are properly trained, on-site personnel will attempt to extinguish the fire with the available fire extinguishers and isolate any nearby flammable materials.

- If a fire occurs in an area where combustible or flammable materials are present, the first action shall be evacuation of all personnel from the area to a remote location upwind of the fire. If there is any doubt about the safety of extinguishing the fire, site personnel will evacuate. The supervisor or knowledgeable employee will provide the fire department with relevant information.

- In the event of tornado or severe thunderstorm warnings or the threat of other severe weather conditions, those tasks necessary to stabilize the work site shall be immediately performed and personnel will proceed to shelter

- **NO workers will be allowed reenter the site unless the ALL CLEAR is provided by the Incident Commander.**

### 3.9.1 Site Control

The entire site is fenced off and the area inside the fence line is considered the work area. Decontamination of equipment is as per NYS ICR 56 or approved variance.

- Emission control will be used by misting or watering the piles of debris as they are being removed.
- Contamination control will be by the use of berms and wet methods.
- Housekeeping of the area will be a continual effort on a daily basis during construction
- CEM Services will use the proper landyards and fall protection equipment if needed, it is not anticipated
- Confined space (see plan) not anticipated

## Section 4.0

## Air Monitoring Program

### 4.1 Scope of Air Monitoring

There will be 2 distinct air monitoring programs at this work site; personal air monitoring for worker protection to ensure OSHA compliance and community air monitoring Program ( CAMP ) to evaluate fugitive dust and the effectiveness of dust suppression controls .A summary of the air monitoring, frequency of sample collection and analytical methodologies is presented in Table 3.0 below .

Air monitoring and documentation will be conducted by the CEM Services, Inc's third party consultant to confirm that the levels of PPE, engineering, and administrative controls are adequate to protect the workers, general public, and environment. In addition to the personal monitoring program established by this HASP, CEM Services, Inc will also collect, document and provide results in writing of real time particulate monitoring and documentation perimeter monitoring for contaminates of concern . Subsurface soil contamination is not homogeneous and the concentration of contaminants is potentially variable. Therefore, the air monitoring program may require modification based on changing site conditions.

# TABLE 3.0

# AIR MONITORING SUMMARY

| POTENTIAL CONTAMINANT | PEL / ACTION LEVEL (AL) | FREQUENCY OF SAMPLE COLLECTION | ANALYTICAL METHOD | COMMENT |
|---|---|---|---|---|
| PARTICULATES (TACM 4031)<br><br>RESPIRABLE DUST | AL 150um/m3<br><br>PEL 10 MG/ M3<br>AL 5 MG / M3 | DAILY SAMPLING OF UPWIND AND DOWNWIND PERIMETER LOCATIONS<br><br>DAILY OSHA SAMPLING OF WORKERS | REAL- TIME INSTRUMENTATION PER NYSDEC TAGM 4031<br><br>NIOSH 0600 | COMMUNITY AIR MONITORING PROGRAM (CAMP )<br><br>OSHA PERSONAL SAMPLING WILL BE DONE FOR DUST.<br><br>SAMPLING MAY BE TERMINATED IF CONCENTRATION IS BELOW ACTION LEVEL AND NEA IS CONDUCTED |
| POLYAROMATIC HYDROCARBONS (PAH) | PEL 1PPM<br><br>AL 0.5 PPM | DAILY SAMPLE COLLECTION DURING SOIL EXCAVATION | PAH AIR MONITORING USING EITHER A MULTI GAS METER OR PASSIVE DOSIMETER PER OSHA METHOD 1005 ( OR EQUILAVENT) | SAMPLING MAY BE TERMINATED IF CONCENTRATION IS BELOW ACTION LEVEL AND NEA IS CONDUCTED<br><br>COMMUNITY AIR MONITORING PROGRAM (CAMP) WILL INCLUDE PAH MONITORING AT SITE PERIMETER |
| Trichloroethylene (TCE) | TLV: 537 mg/$m^3$<br><br>PEL: 1054 mg/$m^3$ | Daily sampling during excavation | OSHA Analytical Method (OSHA 1001) | SAMPLING MAY BE TERMINATED IF CONCENTRATION IS BELOW ACTION LEVEL AND NEA IS CONDUCTED<br><br>COMMUNITY AIR MONITORING PROGRAM (CAMP) WILL INCLUDE TCE MONITORING AT SITE PERIMETER |

## 4.2 Personal Air Monitoring

The collection of personal samples will be conducted through CEM Services, Inc's third party consultant utilizing instruments that will be operated only by persons with appropriate training in the care, calibration, operation, and limitations of the equipment. All instruments will be inspected regularly and field calibrated to determine background concentrations prior to use. An accredited and licensed laboratory will analyze samples. Results of personal air monitoring results will be made available in writing to personnel working on this project.

Sampling will be performed and laboratory analysis in accordance to NIOSH methodologies.
Personal air sampling will be conducted for each major work task with a potential airborne hazard. In the event that personal results are consistently below the OSHA action levels, PPE levels may be modified. The decision to either upgrade PPE protection or downgrade PPE protection will be the responsibility of the CEM Services Inc. On-Site Safety Manager. Personal samples will be collected on a periodic basis throughout the duration of the project to verify site conditions.

Negative exposure assessments (NEA) based on representative personal (STEL) and Full Shift (8 hr.) air samples for workers inside the regulated work area may be conducted in accordance to OSHA standards. These NEA's will be used to justify a potential downgrade in PPE from Level C to Level D at this work site. The NEA's will be documented in accordance to OSHA requirements and include representative air samples for the job tasks with the greatest potential for exposure.
It is understood that additional negative exposure assessments (NEA) must be made whenever a change occurs in practices, procedures, equipment, personnel, or other factors that could be expected to result in a potential change in worker exposure.
If air monitoring measures airborne concentrations above the OSHA action levels, then personal protection, engineering, and administrative controls will be reviewed by CEM Services Inc. On-Site Safety Manager to mitigate airborne hazards. Daily air samples will be collected for any job task with measured concentrations above the OSHA Action Level to monitor the effectiveness of engineering and administrative control measures to ensure worker safety.

## 4.3 Community Air Monitoring

Airborne dust and PAH'S concentrations will be monitored using real-time air monitoring instrumentation. Data from real-time monitors identified as acceptable in TAGM 4046 will be logged at 15 minute intervals. Baseline levels of dust will be established, followed by periodic measurements at upwind and downwind locations as outlined in NYSDEC TAGM 4031 *Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.* Particulate air sampling will be conducted prior to work activities to establish background airborne particulate concentrations in the project work area.
Air monitoring for targeted air contaminants will be conducted during the pre-construction period for a baseline conditions and during all work days. If it is raining, particulate/ dust sampling may not be required. This decision to terminate air sampling will be determined by CEM Services Inc. On-Site safety manager and documented in daily log book. It should be noted that air sample locations may be altered due to weather conditions (wind direction) and that additional locations may be added at the discretion of the third party monitor. The levels of acceptance will be in accordance with TAGM 4031.
Due to the potential for disturbing contaminated soils during demolition, the third party monitor will observe excavation practices of the Contractor during each work shift. Special attention will be paid to the potential for fugitive dusts, to prevent off site migration of particulates.

If any detectable emission is noted at the perimeter of the work area, the work will be stopped and an immediate evaluation of in-place engineering controls for the emission location will take place. The evaluation may include, but is not limited to, work activities, monitoring the downwind readings from the excavation area, and vapor suppression techniques as required to remove vapors from the downwind area. Modifications to engineering controls will be made immediately. The work will not be restarted until engineering controls are modified or determined to be functioning properly.

**1. Air Sampling and Analytical Methodology**

During demolition operations, there will be on- going air sampling. Methodologies employed will follow EPA or National Institute of Occupational Safety and Health (NIOSH) protocols or other approved methodologies. Generally, sampling that requires laboratory analysis will be performed every work shift.

**2. Particulate and Dust**

Daily asbestos air monitoring will be conducted by the Engineer and CEM Services will do dust monitoring of particulates on the perimeter as per NYS TAGM.

**3. Weather**

The contractor will review weather conditions on a daily basis

**4. Monitoring Data**

Copies of daily monitoring logs, sampling logs, and daily inspection reports will be kept in a binder and made available for review at CEM Services Inc. field office during the project. At the project completion, a final report that summarizes the daily activities, procedures, and monitoring/sampling results will be prepared for inclusion with the project. Air monitoring results will be made available to regulatory personnel upon request.

## Table 4

## Potential Site Contamination Hazards

| Chemical of Concern | Maximum Concentration if Known | Potentially Contaminated Media | OSHA PEL[B] ACGIH TLV | Route of Exposure | Exposure Symptoms/Primary Hazards |
|---|---|---|---|---|---|
| PAH | Unknown | Air/Soil/ water | TLV: 50 mg/m$^3$<br><br>PEL: 100 mg/m$^3$ | Inhalation, Ingestion, Absorption, Contact | Central nervous system, the kidneys or the liver. PAH may also cause irritation when they contact the skin, or may irritate mucous membranes |
| TCE | Unknown | Air/Soil/ water | TLV: 537 mg/m$^3$<br><br>PEL: 1054 mg/m$^3$ | Ingestion, Absorption, Contact | TCE exposure has been shown to be associated with central nervous system symptoms such as headaches, dizziness, and confusion |

## Section 5.0

## Personal Protective Equipment

Workers at this job site will use Level D Personal Protective Equipment (PPE) unless on- going air monitoring warrants increased level of PPE to Level C.

A list of the equipment and supplies needed for Level C PPE protection and level D PPE is described in (Table 5.1) and 5.2 below ;

### Table 5.1

**LEVEL C PERSONAL PROTECTIVE EQUIPMENT (PPE)**

- Disposable tyvek coveralls
- Hard hats, safety glasses, leather work gloves, leather work boots with rubber boot covers, high visibility vests and hearing protection as needed
- Nitrile gloves worn over a non-latex inner glove for work that may result in employee's direct contact with below grade soils
- NIOSHA approved Half-face respirators with combination HEPA/Chemical cartridges.

CEM Services, Inc's Safety Department staff and the third party consultant will determine the levels of personal protective equipment. Employees will be required to acknowledge that the use of specified equipment will be a mandatory condition of work at the project site.

Any change to the types of personal protective equipment utilized throughout the duration of the work at the project site will be published and distributed to employees as a revision to this document.

It is a possibility site conditions will allow a downgrade to worker protection to Level D PPE. This downgrade is acceptable if personal air monitoring documents airborne concentrations for target airborne contaminants are below OSHA action levels and a negative exposure assessment (NEA) is documented meeting OSHA criteria. **No changes to the specified levels of worker protection will be made without the written approval of the On- site Health and Safety Manager.**

For any PPE downgrade to Level D, the Negative Exposure Assessment (NEA) must document the job tasks with the highest risk of exposure, and the job tasks documented in NEA for the PPE downgrade shall be identical to the future job tasks (i.e. no change in process, working conditions, staffing). .

A list of the equipment and supplies needed for Level D PPE protection is described in (Table 5.2 ) below;

### Table 5.2

**LEVEL D PERSONAL PROTECTIVE EQUIPMENT (PPE)**

- coveralls
- Hard hats, leather work gloves,
- Safety boots (ANSI Std. F2413-05 )
- high visibility vests and hearing protection as needed
- Eye/ face protection ( ANSI Z87.1 )

The level of PPE protection for site workers can vary due to changing site conditions and on- going air monitoring on this job site will be critical to determine appropriate worker protection

If airborne concentration levels for measured contaminants are above the action levels as referenced in Section 4.0 (Table 3.0) of this HASP, then personal protective equipment will immediately be modified to ensure worker safety and health. In addition, the engineering and administrative control measures will be also be reviewed for effectiveness to ensure worker protection and regulatory compliance.

Based on existing site characterization data and prior soil sampling ,it is anticipated that non- intrusive work including; employees operating trucks / heavy equipment on -site will require Level D protection. However, this risk assessment will be verified with air monitoring and negative exposure assessment for these job tasks.

To further mitigate potential exposure to vehicle operators, drivers will remain in vehicles with the windows closed and mechanical ventilation systems shut off when hauling potentially contaminated soils and other excavated material. Fugitive road dust will be minimal due to dust suppression program in place.

Employees may elect to don PPE when not required by this HASP. CEM Services, Inc will provide the equipment, training and medical surveillance required for use of the PPE so long as the voluntary use does not create any additional safety or health hazards.

## Section 6.0

## Medical Surveillance

Medical monitoring is required by OSHA as a means of monitoring worker exposure to certain toxic substances (i.e. asbestos, heavy s). Although the scope of work and site conditions for this project DO NOT meet the criteria set forth in 29CFR1926.65, CEM Services, Inc has elected to established a Medical Surveillance Program (MSP) for employees engaged in on-site operations which involve below grade soil disturbance.

A baseline medical surveillance examination will be given not more than one year prior to a worker reporting to the job site to work in contaminated areas. Copies of the physician's statement certifying each employee's ability to work at task-specific operations, as well as their suitability for wearing respirators will be maintained by the CEM Services, Inc's Health and Safety Director.

### 6.1 Episodic Examinations

Non-scheduled medical examinations may be required upon acute exposure, at the discretion of the Health and Safety Director or occupational physician, or upon receipt of a request for a medical examination from any employee with symptoms of exposure to hazardous substances, or following injuries, etc. Episodic examinations will be provided, if required, by that person's direct employer through their Medical Surveillance Program.

### 6.2 Annual or Termination Exams

All personnel participating in the medical monitoring program (i.e., those personnel who have the potential to be exposed to below grades soils, those who will don respiratory protection, etc.) will have annual examinations and follow-up examinations upon completion of the work. Biological monitoring for target heavy s levels will be conducted as part of these examinations in accordance with 29 CFR 1926. Employees will be notified of their blood levels within five working days of receipt of biological monitoring results.

The annual and termination exams will be complementary in scope with the baseline exams to the degree sufficient to allow comparison of individual biologic parameters. Additional testing for the purpose to further diagnose occupationally induced or significant abnormalities will be at the discretion of the examining physician.

Subcontractors whose personnel work on the site will provide documentation for maintenance on-site that their personnel are participating in an on-going medical surveillance program and are physically fit to work on a hazardous waste site and wear respirators (for applicable personnel).

### 6.3 Abnormal Medical Surveillance Results

In general, whenever any medical test which is of significance yields abnormal results, the test will be repeated. Whenever abnormal results are substantiated, the worker may be restricted or excluded from areas which are potentially contaminated or thought to compromise his/her safety. The decision of worker disposition will rest with the examining physician.

## Section 7.0

## Decontamination Procedures

Personnel decontamination procedures are not anticipated at this site. However, at any time when personal or environmental air monitoring levels exceed the action level personal decontamination may be required.
Equipment / vehicle decontamination will be done on site. All vehicles leaving the site will be washed

### 7.1 Equipment Decontamination

Equipment decontamination, including dump trucks and heavy equipment involved in operations contacting potentially contaminated soils, which are below grade will be decontaminated prior to leaving the job site.

- Equipment decontamination will occur within designated existing truck wash area, which will be provided and maintained by CEM Services, Inc.
- CEM Services, Inc will be responsible for the cleaning and maintenance of storm drains and wastewater collection and disposal.
- Construction equipment shall undergo a gross decontamination in an area designated by CEM Services, Inc with the use of hand tools including track spades and shovels.
- Construction equipment will be thoroughly pressure washed to remove dirt and residue at the designated truck wash area.
- Detergents and surfactants will be used on an as needed basis.

### 7.2 Personal Decontamination

If air sampling data for selected contaminates exceeds the OSHA Action Level, personal decontamination may be required. Workers shall go through the decontamination procedures listed below upon leaving the designated work zone;

- Gross decontamination, including the removal of soil accumulation on boots and outer gloves will occur with PPE intact in an area designated.
- Wash, removal and storage of rubber or outer boots.
- Wash, removal and storage of outer nitrile gloves.
- Removal and disposal of tyvek coveralls in designated container provided by NRG.
- Removal, cleaning and storage or respirator.
- Personal hygiene procedures including washing of hands, face and forearms.

# APPENDIX A

## Community Protection

## Fugitive Dust Suppression and Particulate Monitoring Program (TAGM - 4031)

# Fugitive Dust Suppression and Particulate Monitoring Program (TAGM - 4031)

**Issuing Authority:** Michael J. O'Toole, Jr.

**Title:** Director, Division of Environmental Remediation

**Date Issued:** Oct 27, 1989

## 1. Introduction

Fugitive dust suppression, particulate monitoring, and subsequent action levels for such must be used and applied consistently during remedial activities at hazardous waste sites. This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring program as an element of a hazardous waste site's health and safety program.

## 2. Background

Fugitive dust is particulate matter--a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles, liquid droplets or solids, over a wide range of sizes--which becomes airborne and contributes to air quality as a nuisance and threat to human health and the environment.

On July 1, 1987, the United States Environmental Protection Agency (USEPA) revised the ambient air quality standard for particulates so as to reflect direct impact on human health by setting the standard for particulate matter less than ten microns in diameter ($PM_{10}$); this involves fugitive dust whether contaminated or not. Based upon an examination of air quality composition, respiratory tract deposition, and health effects, $PM_{10}$ is considered conservative for the primary standard--that requisite to protect public health with an adequate margin of safety. The primary standards are 150 ug/$m^3$ over a 24-hour averaging time and 50 ug/$m^3$ over an annual averaging time. Both of these standards are to be averaged arithmetically.

There exists real-time monitoring equipment available to measure $PM_{10}$ and capable of integrating over a period of six seconds to ten hours. Combined with an adequate fugitive dust suppression program, such equipment will aid in preventing the off-site migration of contaminated soil. It will also protect both on-site personnel from exposure to high levels of dust and the public around the site from any exposure to any dust. While specifically intended for the protection of on-site personnel as well as the public, this program is not

meant to replace long-term monitoring which may be required given the contaminants inherent to the site and its air quality.

## 3. Guidance

A program for suppressing fugitive dust and monitoring particulate matter at hazardous waste sites can be developed without placing an undue burden on remedial activities while still being protective of health and environment. Since the responsibility for implementing this program ultimately will fall on the party performing the work, these procedures must be incorporated into appropriate work plans. The following fugitive dust suppression and particulate monitoring program will be employed at hazardous waste sites during construction and other activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.
2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Such activities shall also include the excavation, grading, or placement of clean fill, and control measures therefore should be considered.
3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns ($PM_{10}$) with the following minimum performance standards:

   Object to be measured: Dust, Mists, Aerosols
   Size range: <0.1 to 10 microns
   Sensitivity: 0.001 $mg/m^3$
   Range: 0.001 to 10 $mg/m^3$
   Overall Accuracy: ±10% as compared to gravimetric analysis of stearic acid or reference dust

   Operating Conditions:
   Temperature: 0 to 40$^oC$
   Humidity: 10 to 99% Relative Humidity

   Power: Battery operated with a minimum capacity of eight hours continuous operation

   Automatic alarms are suggested.

Particulate levels will be monitored immediately downwind at the working site and integrated over a period not to exceed 15 minutes. Consequently, instrumentation shall require necessary averaging hardware to accomplish this task; the P-5 Digital Dust Indicator as manufactured by MDA Scientific, Inc. or similar is appropriate.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the entity operating the equipment to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.
5. The action level will be established at 150 ug/$m^3$ over the integrated period not to exceed 15 minutes. While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/$m^3$, the upwind background level must be measured immediately using the same portable monitor. If the working site particulate measurement is greater than 100 ug/$m^3$ above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7). Should the action level of 150 ug/$m^3$ be exceeded, the Division of Air Resources must be notified in writing within five working days; the notification shall include a description of the control measures implemented to prevent further exceedences.
6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure $PM_{10}$ at or above the action level. Since this situation has the potential to migrate contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:
    1. Applying water on haul roads.
    2. Wetting equipment and excavation faces.
    3. Spraying water on buckets during excavation and dumping.
    4. Hauling materials in properly tarped or watertight containers.
    5. Restricting vehicle speeds to 10 mph.
    6. Covering excavated areas and material after excavation activity ceases.
    7. Reducing the excavation size and/or number of excavations.

    Experience has shown that utilizing the above-mentioned dust suppression techniques, within reason as not to create excess water which would result in unacceptable wet conditions, the chance of exceeding the 150 ug/$m^3$ action level at hazardous waste site remediations is remote. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. If the dust suppression techniques being utilized at the site do not lower particulates to an acceptable level (that is, below 150 ug/$m^3$ and no visible dust), work must be suspended until appropriate corrective measures are approved to remedy the situation. Also, the evaluation of weather conditions will be necessary for proper fugitive dust control--when extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended.

There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require appropriate toxics monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.