

# **BONESTROO SITE SAFETY AND HEALTH PLAN**

Site Name: Lilydale Regional Park Environmental Cleanup

Bonestroo Project #: 000211-09114-0

The information presented in this Site Safety and Health Plan (SSHP) is intended for field activities at the above-referenced site. Bonestroo makes no warranties regarding the accuracy of this document and nothing contained herein shall be construed as providing recommendations or direction, either expressed or implied, regarding health and safety measures to be taken by anyone other than Bonestroo personnel. Non-Bonestroo personnel shall be responsible for complying with their own site safety plans and local, state and/or federal regulations.

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## **A. INTRODUCTION**

The purpose of this Site Safety and Health Plan (SSHP) is to identify, evaluate, and control the potential safety and health hazards associated with the planned tasks at the Lilydale Regional Park in St. Paul, Minnesota (the Site) and to protect the health and safety of all Bonestroo employees involved. The planned tasks for which Bonestroo will provide oversight are removing, characterizing, and managing waste materials (waste materials) encountered during excavating activities.

The work is being performed under applicable state and federal rules and, therefore, this program shall comply with all applicable Minnesota Occupational Safety and Health Administration rules and requirements in 29 Code of Federal Regulations (CFR) 1910 (ref. MN Department of Labor and Industry), including 1910.120-Hazardous Waste Operations and Emergency Response (HAZWOPER).

Bonestroo field activities must be conducted in compliance with this SSHP. The Site Safety Officer (SSO) will be responsible for implementing this SSHP and will have the authority to alter this plan as necessary to meet the objectives of this plan. Personnel covered by this SSHP who cannot or will not comply with the SSHP will be excluded from on-site activities.

As stated above, Bonestroo does not assume responsibility for the actions of contractors or sub-contractors at the site. They will be required to develop and follow their own SSHP related to specific on-site activities. In that regard, any Bonestroo employee who will be on site will be required to sign the SSHP review found in Section O of this SSHP.

This SSHP was prepared from the best available information concerning site conditions at the time of development. The health and safety specifications in this SSHP are based on reasonably available sampling information and reports. The project manager or SSO have the authority to amend any part of this program at anytime due to changes to site conditions that may affect the health and safety of on-site personnel.

**B. BACKGROUND INFORMATION**

1. Project Name: Lilydale Regional Park Environmental Cleanup
2. Project Location: St. Paul, Minnesota
3. Client Name: City of St. Paul (the City)
4. Client Contact: Ms. Alice Messer, City of St. Paul, Phone: 651-266-6412
5. Bonestroo Project Manager: Stuart Gross Phone: 262-643-9159
6. Anticipated On-Site Personnel:

<u>Name</u>	<u>Affiliation</u>	<u>Function</u>
<u>Richard Pager</u>	<u>Bonestroo</u>	<u>SSO, Environmental Professional</u>
<u>Clint Jordahl</u>	<u>Bonestroo</u>	<u>Environmental Professional</u>
<u>Dan Feldt, MPH, CIH</u>	<u>Bonestroo</u>	<u>Sr. Certified Industrial Hygienist</u>

7. Plan Prepared by: Dan Feldt, MPH, CIH Date: 4/12/10; 8/6/10
8. Plan Reviewed by: Stuart Gross, PG Date: 4/13/10

**C. SITE INFORMATION****Site Descriptions (see Attachment A Site Map)****Lilydale Marina Demolition – Site #1**

The Lilydale Marina demolition site is located between the Mississippi River and Lilydale Road generally in the southwest quarter of the northeast quarter of Section 14 T28N, R23W. The location of this site is shown in Attachment A. The site covers a little more than 6 acres and includes two large waste piles each approximately 2 acres in area and rising 12 to 18 feet above the surrounding terrain.

It appears that Lilydale Marina was in operation between the late 1950s or early 1960s and sometime between 1980 and 1984. The former owner of Lilydale Marina brought demolition material on to the property between 1953 and 1974 to construct a boat storage area at an elevation above the flood threat. Waste material exposed at the surface consists of demolition debris comprised primarily of concrete, bituminous pavement and dimension stone. In places the waste material is retained by stacked concrete and stone and by wooden utility pole retaining walls. The tops of the piles are very uneven likely as a result of differential settlement. The site fronts approximately 700 feet along the river with demolition debris extending into the river and both up and down stream along the shoreline. The small marina building formerly located between the debris piles and near the river has been removed, and there is an abandoned underground petroleum pipeline that runs southeast to northwest between the two debris piles.

Given the relatively uniform and apparently inert nature of the material that has been observed at this site, there is little concern of significant contamination. Piled demolition debris will be removed from this area to level the ground at an elevation of approximately 700 feet once the area is finished with topsoil. Achieving the desired outcome may or may not result in complete removal of the debris. If the monitoring and testing conducted during the removal indicates significant contamination or a regulatory conflict in leaving a specific media on the site, appropriate cleanup goals will be developed in consultation with the City and MPCA.

## Lilydale Park Dump – Site #2

The Lilydale Park dump site is located on the northwest side of Lilydale Road/West Water Street between roadway and the Mississippi River, and approximately one-quarter mile from the Lilydale Marina (Site #1). It straddles the border between Dakota and Ramsey Counties, but appears to be located primarily in Dakota County. It is generally located in the northwest quarter of the northwest quarter of Section 13 T28N, R23W. The location of this dump is shown in Attachment A.

This site is an irregularly shaped area about 6¼ acres rising about 10 to 16 feet above the surrounding terrain. The surface of the site is well vegetated with grasses and weeds, but in contrast to the surrounding landscape, it generally lacks trees. A small amount of concrete and wood can be seen protruding through the uneven surface of the landfill in several areas.

The Lilydale Park dump site was accumulated within the footprint of Lilydale Auto Parts, which appears to have begun as a small operation along Lilydale Road/West Water Street during the mid- to late-1950s. The salvage yard was slowly expanded northwesterly away from the road, and along with a garage and office building, the facility occupied approximately 6 acres by the mid-1970s.

The landfill was accumulated at the site sometime after 1974, and it appears to have been received final cover by 1980. Little information is available about the material deposited at the site; however, it appears that buildings and other “environmental intrusions” were collected from the park property and aggregated at this site according to the plan developed by the Ramsey County Open Space System during 1973. It also appears that the solid waste that had been dumped in a wooded area northeast of Lilydale Auto Parts site during the 1940s and 1950s was consolidated in the landfill, probably sometime between 1979 and 1980.

During January 1988, the City’s Division of Parks and Recreation consultant conducted soil borings at four known waste disposal areas lying within the Park. The borings showed primarily bricks, concrete, and wood in a matrix of clay and sand soil. No organic vapors were detected in photoionization detector (PID) screenings. No polychlorinated biphenyls (PCBs) were detected. Trace metals were detected, but only lead (Pb) was detected at any level of concern at 380 milligrams per kilogram (mg/kg). In addition, 4,4'-dichlorodiphenyltrichloroethane (4,4'-DDT) was detected at a concentration of 0.1 mg/kg. Even though asbestos was not detected in any of the investigatory borings, since the materials detected were general commercial buildings materials, the potential for the presence of asbestos at the site is acknowledged.

In May 2010, Bonestroo completed a Phase II Environmental Site Assessment (Phase II ESA) of the Lilydale Park Dump site. The project involved the excavation of three test pits; observation of the materials encountered; field screening soil samples with a PID and an X-ray fluorescence analyzer (XRF); and laboratory analyses of selected soil and waste samples.

Asbestos-Containing Building Materials (ACBMs) were discovered in small amounts throughout the profile of each pit. The types of materials encountered (transite, vinyl composite floor tile and mastic) would generally be considered nonfriable in their undamaged state. However, it appeared that all of the material was damaged to varying extents and incorporated with soil and other debris so that all the dump material will be regulated as Asbestos-Containing Waste Material (ACWM).

Antimony, Cadmium, Copper, Selenium and Zinc were all also detected in one or more samples at concentrations above applicable regulatory limits, but aside from asbestos, the primary contaminant of concern at the site appears to be lead which was pervasive in the waste material at concentrations in excess of the applicable Tier 2 Recreational Soil Reference Value (SRV) and the Tier 1 Soil Leaching Value (SLV). Soil Volatile Organic Compounds (SVOCs) in the form of Benzo(a)pyrene equivalents (BaP equivalents) were also present at the site in concentrations above the SLV and applicable SRV.

**Potential Hazard to Personnel**

<u>  X  </u>	Fire/explosive condition
<u>  X  </u>	Worker exposure/injury
<u>  X  </u>	Confined spaces
<u>      </u>	Steep/uneven terrain
<u>  X  </u>	Chemicals/contaminants
<u>  X  </u>	Traffic/heavy machinery
<u>  X  </u>	Noise exposure
<u>  X  </u>	Thermal exposure
<u>  X  </u>	Asbestos
<u>  X  </u>	Trace Metals
<u>      </u>	Other (describe) _____

**Protective Equipment Required**

<u>  X  </u>	First aid kit
<u>  X  </u>	Eye wash
<u>      </u>	Ladder
<u>      </u>	Lights
<u>  X  </u>	Safety Glasses
<u>  X  </u>	Communication
<u>  X  </u>	Hard Hat
<u>  X  </u>	Hearing Protection
<u>  X  </u>	Dust Mask
<u>  X  </u>	Synthetic Gloves
<u>  X  </u>	High Visibility Vest

Estimated Days on site: 8 weeks (40 days)

**D. SITE SAFETY PROCEDURES**

A meeting will be held weekly between the Bonestroo environmental professionals at the site and the Bonestroo project manager (PM) and certified industrial hygienist (CIH). Safety consultations with the CIH will also be held at any other time necessary to ensure that Bonestroo personnel are informed and educated regarding the potential health and safety hazards at the site. All Bonestroo field personnel will be required to participate in these meetings. The on-site SSO will initiate and conduct the meetings.

The SSO will also conduct frequent inspections of site conditions, facilities, equipment, and activities to determine whether the Site Safety Plan is adequate and being followed. In order to make safety inspections effective, the following guidelines should be observed.

- Review the results of these inspections with either Bonestroo PM or CIH.
- Re-inspect any identified problems to ensure that they have been corrected.
- Document all inspections and subsequent follow-up actions in field notebook kept for this project. Retain these records until site activities are completed and at least 5 years after project has been completed.

The frequency of inspections shall be both at the beginning and the end of each work shift or when site conditions change due to factors such as weather, tasks being performed, or new potential hazards discovered or introduced during site activities.

**Perimeter Establishment**

Perimeter will be established around each site using a fence or other marking material. The sites will be designated as the "work zones." The fence/markers will provide site security to prevent unauthorized entry.

**Site Entry Procedures**

Before entering a work zone, the SSO shall check in any other Bonestroo personnel and make sure that they: 1) have been informed of any potential site safety and health hazards, and 2) have donned the required PPE.

**Site Control**

The following procedures shall be observed to minimize the potential for contaminant transfer, personnel exposure to hazardous materials, and work place injury.

- The fenced/marked areas of the sites will be designated as the "Work Zones."
- Site #2 will be herein referred to as the "Asbestos Work Zone", and will also be established by the contractor.
- Contamination reduction zones and/or a support zones will be established as necessary for each Site depending on conditions encountered.

### **E. CONTAMINANT/CHEMICAL HAZARD ASSESSMENT**

Demolition debris and wastes were reportedly piled at these sites between the 1950s and the late 1970s, but there are no reports of industrial wastes being disposed of at either site. No sampling or analysis has been conducted at Site 1; however, asbestos-containing building materials (ACBM), lead at a maximum concentration of 3090 parts per million [ppm], and several Semi Volatile Organic Compounds (SVOCs) have been detected at regulated concentrations in soil samples collected at Site 2. In addition, low concentrations of pesticides, PCBs (polychlorinated biphenyls), antimony, cadmium, copper, selenium, and zinc have also been detected in soil samples collected from Site 2. Since dust-control measures will be implemented as necessary to achieve no visible emissions as part of the asbestos abatement requirement, dust with trace levels of metals and SVOCs are not anticipated to pose a significant exposure potential. The following hazard assessment is related to on-site substances that have already been encountered.

<b><u>Substance</u></b>	<b><u>OSHA-Permissible Exposure Limits (Minnesota)</u></b>
Asbestos	0.1 fibers per cc, 8-hr. time-weighted (TWA); 1.0 f/cc 30 min. average
Lead	0.050 milligrams per cubic meter, TWA
Antimony	0.5 milligrams per cubic meter, TWA
Cadmium	0.005 milligrams per cubic meter, TWA (action level 0.0025 mg/m <sup>3</sup> )
Copper	1.0 milligram per cubic meter, TWA
Selenium	0.2 milligrams per cubic, TWA
Zinc	10 milligrams per cubic meter, TWA
4,4'-DDT	1.0 milligrams per cubic meter of air, TWA (S)
Benzo(a)pyrene	0.2 milligrams per cubic meter, 0.02 ppm, TWA (as benzene soluble fraction)

*Notes: (S) = significant potential for exposure via skin absorption*

### **F. PHYSICAL HAZARD ASSESSMENT**

#### **Flammables/Explosives**

It is unlikely that explosive atmospheres will be encountered while performing tasks. However, it is always possible unknown chemicals may be encountered. Therefore, the following standard safety procedures will be implemented.

- All field vehicles and heavy equipment will be equipped with a type-ABC fire extinguisher. Fire extinguishers will be mounted on the vehicles where field personnel can easily access them. A fire extinguisher check, including inspection of gauges, hoses, and tanks, will be done monthly to ensure proper operation of the equipment.
- If necessary, other appropriate firefighting equipment will be summoned.
- Open fires and burning are prohibited. Smoking will be prohibited at the site by all Bonestroo employees.

## **Heavy Equipment**

The hazards associated with the operation of heavy equipment can be affectively managed through adequate training and continual awareness. Constant visual and verbal contact should be maintained with the operators of mobile equipment. All Bonestroo personnel working around heavy equipment will wear high-visibility vests, hard hats and safety-toed boots (at a minimum). When working around a backhoe, employees should be aware of the digger arm and bucket swinging and the counter weight coming around from the back. Materials can also fall from the bucket at any time causing serious injury. In that regard, it is even more important to be aware of operating equipment by visible means.

## **Noise**

If working near equipment (i.e. within 15 feet) which are obvious significant noise generators, hearing protection shall be worn.

## **Slips, Trips, and Falls**

Although it can be difficult to prevent slips, trips, and fall hazards, these hazards can be minimized by keeping work areas as free of obstructions as possible, and by awareness of surroundings. Personnel should always be aware of the terrain they are walking across and have sure footing, taking very deliberate steps and the easiest path of travel. Cones and or caution tape will be used to mark identifiable hazards. In the event that only one Bonestroo field person is on site, that person should inform all contractors on site of where they will be and what they will be doing. Conversely, the Bonestroo employee should inquire as to what the other contractors will be doing.

## **Lifting**

Field operations often require that physical labor tasks be performed. All Bonestroo employees should employ proper lifting procedures and should not attempt to lift bulky or heavy objects (greater than 40 pounds) without assistance.

## **Tools and Equipment**

Hazards related to the use of tools and equipment are generally associated with improper handling and/or inadequate maintenance. Management of these hazards requires a regular and diligent maintenance and effective training of employees in the proper use of these tools. Electrical cords on portable equipment must have unbroken insulation and should not be exposed to water or other liquids. A ground fault circuit interrupter outlet or cord must be used with any portable electrical equipment when used outdoors.

## **Temperature-Related Stress**

If the work is conducted during warm weather months (May-September), the the potential for days with excessive heat is acknowledged. However, it is also acknowledged that this project will likely not involve significantly strenuous activities on the part of Bonestroo employees.

- Heavy physical exertion
- Being unaccustomed to working in heat (i.e. lack of acclimatization)
- Wearing protective clothing that traps body heat
- Age: older people may have less body water and lower sweat gland efficiency
- Obesity: which makes the body work harder to perform tasks and dissipate heat
- Medications that can interfere with normal body reactions to heat
- Excess use of alcohol

During hot or humid days, and especially during the performance of strenuous work on such days, extra precautions should be taken to reduce the potential for heat stress. Examples of these are:

- More frequent rest periods.
- More frequent water and/or electrolyte-replacing beverages.
- Take advantage of the cooler parts of the day for more strenuous activities.
- Stay out of direct sunlight if possible.
- Wear loose, light colored clothing.

**G. PERSONAL PROTECTIVE EQUIPMENT**

Based on the information available to date related to Site 1 (Marina) and the anticipated work, the health risk to Bonestroo personnel is low, and **Level D protection** will be used during oversight of excavation activities. Work practices and visual observations will be utilized to minimize the risk of exposure to unknowns.

If conditions change (e.g., unknown contaminants encountered, obvious adverse physical effects of site personnel, etc.) and a higher degree of protection appears necessary, the SSO will consult the CIH and PM and the required changes in personal protective equipment (PPE) will be made. A change in the level of PPE will result in this SSHP being amended as necessary and reviewed by the CIH.

<b><u>Project Task (Sites 1 and 2*)</u></b>	<b><u>Level of Protection Haz. Waste &amp; Non-Haz. Site (A, B, C, D, [Other Specify Below])<sup>1</sup></u></b>
_____	_____
Project Oversight	Level D
Soil/Waste Sampling	Level D
Air Monitoring	Level D

**\*If Bonestroo personnel are required to enter the Asbestos Work Zone, the PM and CIH shall be notified, and Level C PPE will be required.**

*(<sup>1</sup>See Appendix A for PPE description by level)*

**H. DECONTAMINATION**

No non-disposable tools (i.e. in need of decontamination) are likely to be used on this project by Bonestroo employees, and no potential need for decontamination of equipment or personnel is recognized.

**I. MEDICAL REQUIREMENTS**

Considering the history of the site, medical monitoring and surveillance is not considered a requirement. Any site-specific testing shall be identified below.

**Site-Specific Medical Procedures/Tests:**

<u>Parameter</u>	<u>Required Testing</u>	<u>Action Level</u>
N/A	N/A	N/A

All Bonestroo employees will be medically qualified and fit tested for respiratory protection as appropriate. However, no respiratory protection other than voluntary use is foreseen for the duration of this project.

**Medical Data Summary**

If applicable (see above) this form shall be completed by Bonestroo personnel before commencing activities at the site. This form shall be kept at the project site for the duration of project activities. This form must be provided to any physician if medical assistance is necessary for any on-site individuals.

(Medical Data Summary Forms are provided in Attachment C)

**J. TRAINING REQUIREMENTS**

All Bonestroo personnel who participate in response actions where they may be exposed to toxic and/or hazardous substances must complete at least an initial 40 hours of health and safety training required by 29 CFR 1910.120, and subsequent annual refreshers. The dates of certification are documented in both of the following Bonestroo offices.

Bonestroo  
 12075 North Corporate Parkway Suite 200  
 Mequon, Wisconsin 53092-2600  
 POC: Ms. Cathy Lamers  
 651-604-4795

Bonestroo  
 2335 West Highway 36  
 St. Paul, Minnesota 55113  
 POC: Ms. Maureen Rehfuß  
 651-775-5124

**Confined-Space Entry**

Bonestroo employees who are engaged in activities at sites covered by 29 CFR 1910.120 are prohibited from entering confined spaces.

**K. AIR MONITORING**

This air monitoring plan outlines the equipment and procedures that will be used to monitor air quality at the site, if deemed necessary by the SSO in conjunction with the CIH. The plan also provides the process used to determine if emission control or emergency response procedures should be implemented.

Air quality testing may be necessary within the work zone. The purpose of each monitoring location is outlined below.

## Work Zones

Work zone monitoring is intended to provide any indication of the need to 1) cease work and evaluate excavation activities and 2) upgrade from Level D to a higher level of protection.

Monitoring is used as the first indication that airborne contaminant concentrations have increased to a concern level and/or that a "hot spot" has been discovered. It is also used to set the required level of worker protection.

While in work zones, the SSO will utilize, as necessary, portable hand-held instruments (i.e., PID and 4-gas meter) to measure the concentration of total VOCs, hydrogen sulfide (H<sub>2</sub>S), carbon monoxide (CO), oxygen, and % Lower Explosive Limit (LEL). These instruments provide instantaneous readings on a continuous basis.

No other direct readout air monitoring equipment is applicable to Bonestroo's responsibilities on this project.

Regular and periodic work zone air monitoring measurements will be recorded in the project field book.

## Asbestos Work Zone (Site #2)

It should be understood by all Bonestroo employees visiting this site that a separate and exclusive Asbestos Work Zone will be established around operations involving asbestos-containing materials. At the writing of this SSHP, Site #2 is an Asbestos Work Zone. Establishment of the perimeter of this Work Zone shall be the responsibility of the contractor selected for removing the asbestos waste. Bonestroo employees will enter this work zone only for as long as necessary to verify or investigate environmental conditions, and then only with Level C protection until air monitoring results allow for downgrading to Level D.

## Action Levels

An action level is the measured concentration of a specific contaminant in the air that triggers emission control and/or emergency response procedures. The emergency response and emission control procedures are presented in Section L of this Site Safety Plan.

**Immediate Action Levels** have been developed to address a sudden spike in contaminant levels. The immediate action levels apply to a situation where the concentration of emissions immediately change from acceptable to an "action level." If an immediate action level is exceeded in the work zone, work will cease and investigation and emission control procedures initiated immediately. Notification of the PM and CIH will be required whenever action levels are exceeded. Based on the data from this site, it is extremely unlikely that an immediate action level will be exceeded during the remediation work.

Chemical Of Concern	Immediate Action Level
Flammable/Combustible Gas	10% LEL
Hydrogen Sulfide (H <sub>2</sub> S)	10 ppm
Oxygen	<19.5% or >23.5%
Carbon Monoxide (CO)	50 ppm
Total VOC	50 ppm
Asbestos	Visual ID of potential bulk material or visual evidence of breaches in asbestos abatement enclosures.

The air monitoring plan will be implemented using the equipment shown in the table below. Servicing, maintaining, and calibrating monitoring equipment shall be performed in accordance with manufacturers' recommendations.

<u>Type of Equipment</u>	<u>Model Type</u>
Photoionization Detector	RAE Systems ppb-Rae or similar
Multigas Meter (H <sub>2</sub> S, CO, Oxygen, Combustible Gas)	MSA Passport or similar

All direct readout detection equipment shall be bump-checked (i.e. exposed to standard cal gas) on at least a daily basis or more often if reliability is in question.

**Asbestos**

Daily sampling for airborne concentrations of asbestos will be conducted simply to document potential exposures. A personal sampling pump will be worn by the SSO on a daily basis, and will be submitted for analysis at a local AIHA-certified laboratory for 24-hour turn-around. The results will be recorded in the project field book as they become available from the laboratory and after review by the CIH.

**Asbestos Action Level**

If asbestos fibers are detected in a concentration at or above 0.05 fibers per cc of air (8 hr. TWA), Bonestroo's work activities will be temporarily suspended pending an investigation and determination by the SSO and the CIH regarding: 1) the effectiveness of the dust suppression techniques, 2) changes in protection level (i.e. A, B, C, D), and 3) if additional visual inspection or bulk sampling may be necessary.

**L. EMERGENCY PLAN**

This emergency action plan can be fully or partially activated depending on the extent of the encountered incident. The plan will be activated whenever an emergency is discovered. Where possible, the emergency incident will be brought under control by the on-site personnel. The SSO has full responsibility in the event of an emergency and will be required to determine if outside response needs to be contacted.

The personnel who have responsibilities in the event of an emergency are listed below with their area(s) of responsibility. In addition, procedures to be followed in the event of a site evacuation are also outlined.

**Emergency Personnel Responsibilities**

<u>Name</u>	<u>Responsibility</u>
<u>Richard Pager</u>	<u>SSO, direct evacuation and contact emergency personnel</u>
<u>Clint Jordahl (Bonestroo)- Alternate</u>	<u>_____</u>
<u>_____</u>	<u>_____</u>
<u>_____</u>	<u>_____</u>

The SSO is the on-site emergency coordinator who has the responsibility for controlling emergency response operations at the site until relieved by a law enforcement or rescue professional. In the event of an emergency, the SSO must identify, as best as possible, all hazardous substances or conditions present. He must implement appropriate emergency operations in accordance with this plan. In addition, he must limit the number of personnel exposed to the emergency by communicating with all personnel on site, but primarily and officially Bonestroo personnel, and assuring that they get to a safe area. The SSO, or a designee, will be on site at all times during the work listed above and will be familiar with this emergency plan.

## Communication

Before starting field activities, the St. Paul fire and police departments will be notified of the planned activities by the SSO. If an emergency occurs, fast and effective communication is essential. There are three important elements to effective communications:

- The appropriate message to be communicated must be determined.
- The message then must be transmitted accurately.
- The person receiving the message must understand the message.

Call from a safe area. The following information should be given:

- Inform the dispatcher of the emergency
- Identify yourself
- Indicate if someone is injured
- Describe how to get to the area of emergency

After making the call, evacuate the injured to a safe area if they can be moved and wait to meet the responders.

Communication will be accomplished through direct-voice contact and cell phones. The SSO will have a cell phone either on person or in the field vehicle at all times while performing tasks at landfill. Also, an air horn will be provided as part of on-site equipment and kept near the SSO and other designated individuals in hazard areas. Verbal communication and blasts from the air horns will be used to alert field workers in the case of an emergency. This will be reviewed with all Bonestroo field personnel before site entry and every morning during the safety meeting.

## Medical Emergencies

The SSO will contact off-site responders for transport of the injured individual to a health care facility. The closest trauma center is:

United Hospital, 333 Smith Avenue N., St. Paul  
5.9 miles from the site; telephone 651-241-8000.

The closest fire/rescue station is:

St. Paul Fire Department, 33 Cesar Chavez Street  
2.1 miles from the site (dial 911).

Outside medical assistance should be requested if any of the following conditions are suspected or occur:

- Cardiac Arrest
- Chest Pain
- Breathing Difficulty
- Heat Stroke
- Burns (2nd or 3rd degree over 10 percent of the body or about the face or neck)
- Diabetic Emergency
- Drug Overdose
- Traumatic Injury
- Seizure
- Smoke, Heat or Toxic Gas Inhalation
- Uncontrollable Bleeding

Emergency eye wash bottles will be kept on site in case of any eye emergencies requiring immediate flushing of the eyes to prevent permanent damage to the person's sight. If outside assistance is required, immediately dial 911.

## **Emergency Procedures**

### **INJURY**

- Two 5-second air horn blasts shall be sounded.
- All Bonestroo site personnel shall assemble at the "entrance" to the work zone.
- The SSO shall evaluate the nature of injury and contact outside emergency services if needed.
- Move victim to the "transport area" if practical.
- Perform emergency decontamination procedures (section below)(should not be necessary)
- As a last resort, transport victim to hospital if needed or inform outside emergency personnel of situation and designated medical facility.
- No persons shall re-enter the Work Zone until the cause of the injury (or symptoms) is determined.
- Perform an accident investigation using Attachment D (Incident Report Sheet).

### **DECONTAMINATION DURING MEDICAL EMERGENCIES**

If emergency life-saving first aid and/or medical treatment are required, decontamination procedures may be limited or omitted. If the contamination does not present a hazard to the rescue personnel, life-saving care may be instituted immediately. If contamination will present a risk to rescue personnel, minimal decontamination should be performed to allow initiation of aid. Although highly unlikely, if contamination presents a significant risk to rescue personnel, then decontamination will need to be performed until the contamination is no longer a risk as determined by the SSO.

Medical assistance personnel will be notified before transporting the victim if the victim may be contaminated. Assurance must be made that the medical personnel at the receiving area are able and willing to handle a victim who is contaminated. Site personnel will accompany contaminated victim to the medical facility to advise on matters involving decontamination. A copy of this SHSP, including materials safety data sheets (MSDS) (if known), will be brought along with the victim.

### **HEAT INJURY**

Heat-related illnesses range from heat fatigue to heat stroke. Heat stroke is a life-threatening condition and requires immediate treatment to prevent irreversible damage or death. Emergency personnel should be summoned immediately and instructed that the situation is life-threatening.

As much clothing should be removed as possible/practical, and the injured removed to an area out of direct sunlight and into a cool environmental if available. If possible, soak the person's clothing with cool water. If the person is conscious, give cold liquid to drink.

Less serious forms of heat stress also require prompt attention. Unless the victim is obviously contaminated, decontamination may be omitted or minimized and treatment should begin immediately.

### **Fire/Explosion**

If fire or explosions occur on the Landfill, the following actions will be performed.

- Any personnel who discover a fire should immediately notify 911 to request assistance.
- Two 5-second blasts should be sounded on the air horn.
- On-site Bonestroo personnel, under the direction of the SSO, will attempt to control or extinguish the fire with a fire extinguisher, if possible.

- Evacuation of the affected area may be necessary in case of major fire or explosion. All personnel will be familiar with excavation procedures and means of exit from their work areas.
- Emergency Response officials will determine the appropriate actions for off-site response actions.

### Unknown Intact Drums

If drums or containers are encountered during the work, the drums or containers will be inspected from the surface for the following items.

- Symbols, words or other marks on the drum indicating that its contents are hazardous (e.g., radioactive, explosive, corrosive, toxic or flammable)
- Symbols, words, or other marks on the drum indicating that it contains discarded laboratory chemicals, reagents, or potentially dangerous materials in small volume individual containers
- Evidence of deterioration such as corrosion, rust, and leaks
- Evidence that the drum is under pressure such as swelling and bulging
- Drum type and drum lid
- Generator name

Conditions in the immediate vicinity of the drums or containers will be monitored using the PID and a combustible gas meter to assess the possible contents of the drums. If the drums appear to be empty or crushed, the drums will be removed and placed in the waste storage area for further detailed inspection. If intact drums are encountered, operations will cease until the SSO determines that activities may continue. A hazardous waste contractor will then be contacted, as determined necessary by the SSO, to safely remove, stabilize, transport, and arrange for disposal of the waste.

### Spill/Release

If a spill or release occurs, the following steps will be performed.

- Report it immediately to the SSO.
- All Bonestroo personnel shall then re-locate upwind and upgradient of the spill to a safe distance (e.g., 1000 feet).
- SSO will assess the spill and inform the excavator contractor to put absorbent material down to try to contain the spill if possible.
- If spill or release cannot be contained and/or cannot be safely characterized, two 5-second blasts shall be sounded on the air horn and all Bonestroo personnel shall be evacuated immediately to an area outside the work zone and upwind from the spill.
- The SSO will immediately contact the State Duty Officer to report the spill as may be required by MN Stat. §115.061. The PM will also be contacted to discuss the procedure for spill response.
- The PM or the PM's designee will contact the MPCA VIC Program Staff and any Dakota and/or Ramsey County Emergency management officials as may be required.
- The SSO, in conjunction with the CIH, will coordinate with the spill release contractor and MPCA staff to determine if there is a threat to the neighboring communities. Should the neighboring community require evacuation, the SSO will transmit this information to the local (i.e., county) emergency government organizations.

Ramsey County Emergency Government	(651) 482-5238
Dakota County Emergency Government	(651) 438-4703
MPCA Chemical Spill Telephone:	800-422-0798

**Air Release Assessment/Notification**

An Air Monitoring Plan (Section K) has been developed to ensure that safe air quality conditions prevail during the site work above for both on-site personnel. Air quality will be monitored in the work zone at the Site, as deemed necessary by the SSO. Corrective actions will be triggered for the Work Zone and a notification protocol will be initiated if predefined action levels are exceeded. The action levels are designed to short-circuit potential air quality concerns before they occur. However, in the event of a potential or real environmental threat to the surrounding communities, all agencies listed above will be notified.

**ACTION LEVEL EXCEEDANCE NOTIFICATIONS**

If an action level exceedance occurs, the SSO will:

- Notify other contractors on site; and
- Notify the CIH and the PM for additional guidance.

**OFF-SITE RESPONSE ACTIONS**

Based on the history of the site, no off-site response actions are likely.

**ON-SITE RESPONSE ACTIONS**

If an action level is exceeded, any or all of the following actions will be performed.

- Addition of moisture (misting) to soils.
- Application of a vapor barrier (e.g., plastic) to the soil or soil piles.
- Reduction of equipment speeds when excavating or moving soils.
- Limitation of the rate of excavation.
- Cessation of soil excavation.
- Upgrade of PPE

**Adverse Weather Conditions**

If the SSO is notified of adverse weather conditions, the following steps shall be performed.

- The SSO will determine if work can continue without endangering the health and safety of the Bonestroo workers. The SSO will monitor the weather during the a.m. and p.m. hours and will document it in the field logbook. Some of the items to be considered before determining the continuance of work are:
  - Potential for heat stress and heat related injuries
  - Dangerous weather related working conditions (high winds)
  - Limited Visibility
  - Potential for electrical storms/lightning. No activities will be permitted during electrical storms
  - Tornado watches and warnings. No activities will be permitted during a tornado warning

In the event of a weather emergency:

- Take appropriate cover in low areas or depressions, or vehicles depending on the emergency.
- Work will cease until the conditions clear up and all watches/warnings are lifted.

**General Site Evacuation Procedures**

Exit work zone. Stay upwind of any spill or fire in the area. Contact PM, CIH and emergency services if necessary.

First Aid procedures for a variety of situations are included in Appendix B.

**M. EMERGENCY REFERENCES****Emergency Resources**

* Ambulance	<u>911</u>
* Hospital Emergency Center	<u>(651) 482-5238</u>
* Local Police	<u>911</u>
* Fire Department	<u>911</u>
* State Duty Officer	<u>(800) 422-0798</u>
* Explosives Disposal Unit	<u>NA</u>

Before initial activities at the site, police and fire emergency services will be contacted to ensure that they are aware of the situation and will be better prepared in the event of an emergency.

**Other Emergency Contacts**

* Bonestroo Mequon Office	<u>(800 ) 776-7140</u>
* CIH (Dan Feldt, Mequon, cell)	<u>(414) 305-1984</u>
* Bonestroo- St. Cloud Office	<u>(320) 251-4553</u>
* National Response Center	<u>(800) 424-8802</u>
* Project Manager (Stu Gross, Mequon, cell)	<u>(414) 526-3974</u>
* PM Alternate (Clint Jordahl, St. Cloud, cell)	<u>(320) 266-0351</u>

*(Note: Incident reports are provided in Attachment D)*

**N. EVACUATION/HOSPITAL ROUTES**

United Hospital  
333 Smith Avenue N  
St. Paul, Minnesota  
(651) 241-8000

1. Start out going SOUTH on LILYDALE RD/CR-45 toward CHEMUNG ST. 1.5 miles
2. Turn LEFT onto SIBLEY MEMORIAL HWY/MN-13/CR-45. 0.1 mile
3. Merge onto I-35E N via the ramp on the LEFT. 3.8 mile
4. Take EXIT 106A toward GRAND AVE. 0.3 mile
5. Turn SLIGHT RIGHT onto GRAND AVE. 0.1 mile
6. Turn SLIGHT LEFT onto SMITH AVE N. 0.1 mile
7. 333 SMITH AVE N is on the LEFT.

**O. SITE-SAFETY PLAN REVIEW**

This document shall be signed by Bonestroo site personnel before their first site visit.

"I have read and understand the contents of this Site Safety Plan and will comply with its provisions, requirements, and restrictions."

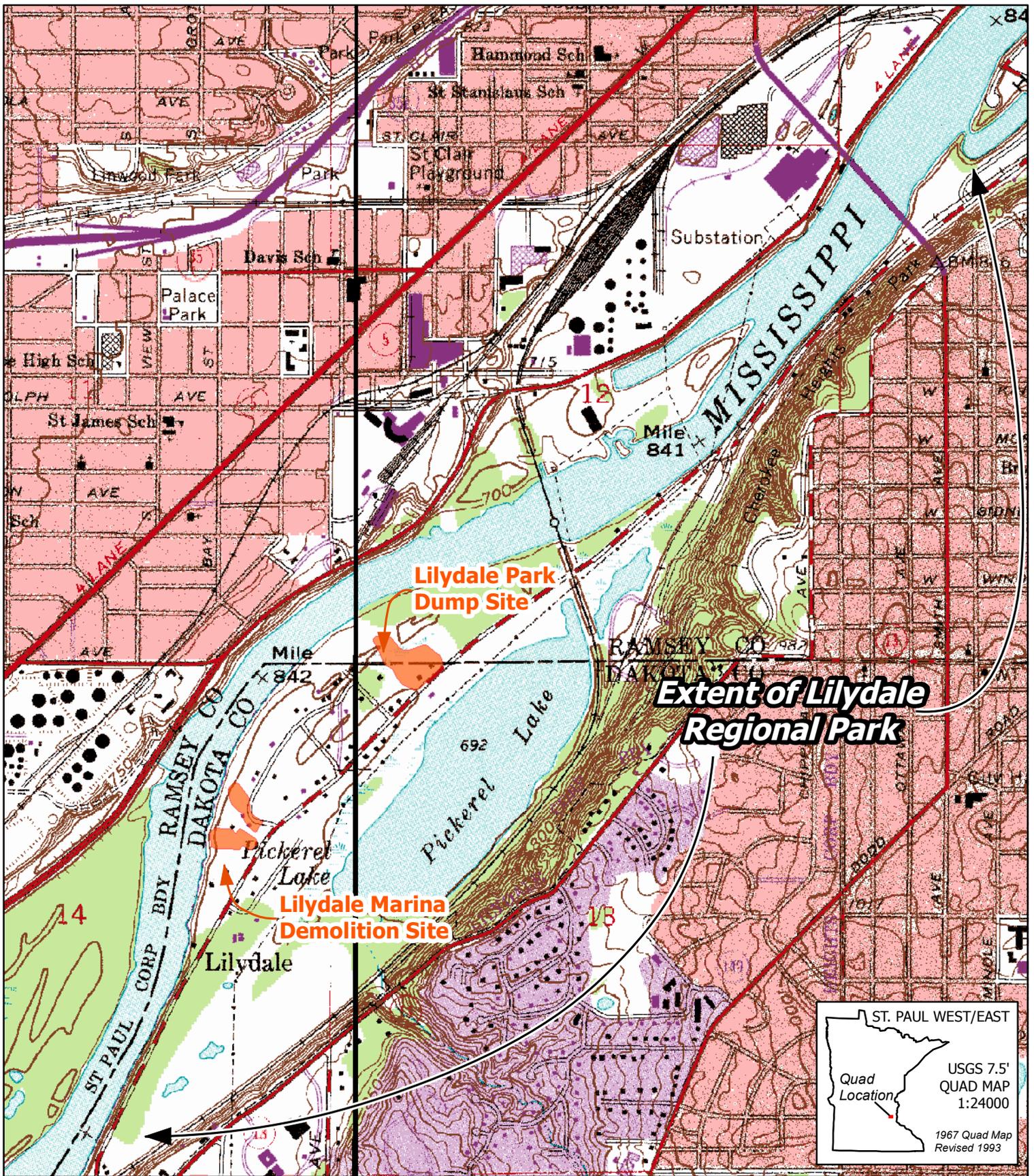






**ATTACHMENT A**

**SITE MAP**



## Phase II Environmental Site Assessment



2335 West Highway 36  
 St. Paul, MN 55113  
 (651) 636-4600

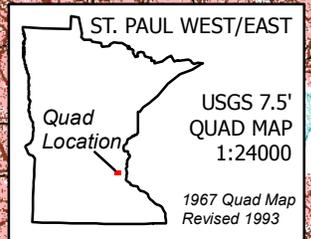
City of St. Paul  
 Division of Parks and Recreation

Figure 1 - Site Location

Job No.  
 211-09116-0

Scale  
 1:16000

Date  
 6/02/2010





**ATTACHMENT B**

**MEDICAL DATA SUMMARY FORMS**

**MEDICAL DATA SUMMARY FORM**

This form shall be completed by Bonestroo personnel prior to commencement of activities of the of the prefect site. This form shall be kept at the project site for the duration of project activities. This form must be delivered to the attending physician when medical assistance is required.

Site: \_\_\_\_\_

Location: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Home Phone: (\_\_\_\_) \_\_\_\_\_

Height: \_\_\_\_\_ Weight: \_\_\_\_\_ Age: \_\_\_\_\_ Sex: \_\_\_\_\_

In case of emergency contact: \_\_\_\_\_

Address: \_\_\_\_\_

Phone (\_\_\_\_) \_\_\_\_\_

Allergies: \_\_\_\_\_

Recent Illnesses: \_\_\_\_\_

Previous exposure to hazardous substances? \_\_\_\_\_ Yes \_\_\_\_\_ No

Current medication: \_\_\_\_\_

Medical restrictions: \_\_\_\_\_

Name of personal physician: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: (\_\_\_\_) \_\_\_\_\_

Date Completed: \_\_\_\_\_



**ATTACHMENT C**  
**INCIDENT REPORT SHEETS**





**APPENDIX A**

**PERSONAL PROTECTIVE EQUIPMENT**

### **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

1. Level A protection should be selected when the highest level of respiratory, skin, eye, and mucous membrane protection is needed.
  - Positive-pressure, self contained, breathing apparatus (MSHA/NIOSH approved) **(REQUIRED)**
  - Fully encapsulated, chemical resistant suit **(REQUIRED)**
  - Chemical-resistant inner and outer gloves **(REQUIRED)**
  - Chemical-resistant boots with steel toe and shank **(REQUIRED)**
  - Chemical-resistant coveralls
  - Two-way radio communication **(REQUIRED)**
2. Level B protection should be selected when the highest level of respiratory protection is needed, but with a lesser degree of skin and eye protection.
  - Positive-pressure, self contained, breathing apparatus (MSHA/NIOSH approved) **(REQUIRED)**
  - Chemical-resistant clothing (coveralls, hooded two-piece, chemical resistant splash suit, or disposable chemical-resistant coveralls) **(REQUIRED)**
  - Coveralls (under splash suit)
  - Chemical-resistant inner and outer gloves **(REQUIRED)**
  - Chemical-resistant boots with steel toe and shank **(REQUIRED)**
  - Two-way radio communication
  - Hard hat **(REQUIRED)**
3. Level C protection, specifically for this Lilydale Project, should be selected when the type and concentration of hazardous airborne substance is known, the criteria for using air-purifying respirators is met, and skin and eye exposure is unlikely. Monitoring of the air must be performed to comply with OSHA regulations and to ensure respirator effectiveness.
  - Half face, air purifying, N-95 mask (MSHA/NIOSH approved) **(REQUIRED)**
  - Protective outer clothing (Tyvek or Kleen-guard coveralls, hooded two-piece) **(REQUIRED)**
  - Synthetic (nitrile or PVC) gloves **(REQUIRED)**
  - Safety shoes with disposable shoe cover, including slip resistant sole **(REQUIRED)**
  - Hard hat **(REQUIRED)**
  - Safety Glasses **(REQUIRED)**
4. Level D is primarily a work uniform. It shall not be worn on-site where respiratory or skin hazards exist.
  - Cotton work clothes, Reflective Vest, and leather protective gloves
  - Boots with steel toe and shank **(REQUIRED)**
  - Hard hat **(REQUIRED)**
  - Safety glasses



**APPENDIX B**

**FIRST AID**

## **FIRST AID**

### **Poison Ivy**

Remove contaminated clothing. Wash all exposed areas thoroughly with soap and water. If rash is mild, apply calamine lotion or other soothing skin lotion. If a severe reaction occurs, seek medical attention.

### **Bites**

Animal Bites: Thoroughly wash the wound with soap and water, flush the area with running water, and apply a sterile dressing. Immobilize affected part until the victim has been attended by a physician. If a wild animal is involved, keep it alive and in quarantine. Obtain the name and address of pet owners.

Insect Bites: Remove "stinger" without squeezing if present; keep affected part below the level of the heart; and apply ice bag. For minor bites and stings, apply soothing lotions such as calamine. If allergic reaction is evident by immediate swelling of the airway and difficulty in breathing, summon emergency medical personnel immediately (911).

### **Burns and Scalds**

Minor Burns: DO NOT APPLY VASELINE OR GREASE OF ANY KIND. If there are no areas of open skin, apply cold water until pain subsides; cover with a dry, sterile dressing. Do not break blisters or remove tissue. Seek medical attention.

Severe Burns: Summon emergency medical personnel (911). Do not remove adhered particles of clothing. Do not apply ice or immerse in water. Do not apply any ointments or grease. Cover burns with thick, sterile dressings. Keep burned feet or legs elevated if possible. May need to treat for shock.

Chemical Burns: Summon emergency medical personnel (911). Wash away the chemical soaked clothing with large amounts of water. Remove victim's chemical-soaked clothing. Apply sterile dressing and seek medical attention.

### **Cramps**

Symptoms: Muscle cramps in abdomen and extremities. Heat exhaustion may also be present.

Treatment: Same as for heat exhaustion.

### **Cuts**

Apply pressure with sterile gauze dressing and elevate the area until bleeding stops. Apply bandage and seek medical attention (if necessary).

### **Eyes**

Foreign Objects: Keep the victim from rubbing eyes and flush the eye with water. If flushing fails to remove the object, apply a dry protective dressing to both eyes and seek medical attention.

Chemicals: Summon emergency medical personnel (911). Flood the eye thoroughly with water for 15 minutes (preferably sterile and tepid). Cover the eye with a dry sterile pad and seek medical attention.

### **Fainting**

Keep the victim lying down. Loosen tight clothing. If victim vomits, roll person onto side or turn head to the side. Maintain an open airway. Bathe the person's face gently with cool water. Unless recovery is prompt, summon emergency medical personnel (911). Require the person to quietly recover for at least 15 minutes before resuming work activities, and monitor periodically for the remainder of the day thereafter.

**Fractures**

Deformity of an injured part usually means a fracture. If a fracture is suspected, immobilize the area and summon emergency medical personnel (911). DO NOT ATTEMPT TO MOVE THE VICTIM UNLESS THEY ARE IN A DANGEROUS POSITION.

**Heat Exhaustion**

Usually caused by exposure to a combination of heat, either sun or indoor, humidity, and dietary factors, especially alcohol intake.

Symptoms: Near-normal body temperature; pale and clammy skin; profuse sweating, tiredness, weakness, headache, perhaps cramps, nausea, dizziness, and possible fainting.

Treatment: Keep victim in lying position and raise feet. Loosen clothing, apply cool wet cloths. If conscious, give sips of water. Seek medical attention immediately.

**Heat Stroke**

Symptoms: High body temperature; hot, red, and dry skin; rapid pulse. Victim may be unconscious.

Treatment: Keep victim in lying position with head elevated. Remove clothing and repeatedly sponge the bare skin with cool water. This is a life-threatening condition. Summon emergency medical personnel immediately (911).

**Poisoning**

Call the Minnesota Poison Control Center 800-222-1222 for instruction on immediate care. If victim becomes unconscious, keep airway open by tipping head backward. Summon emergency medical personnel immediately (911).

**Puncture Wounds**

If puncture wounds is deeper than skin surface. Clean wound with water as thoroughly as possible. Serious infection can occur unless proper treatment is received. Seek medical attention prior to returning to the next day shift.

**Sprains**

Elevate injured part and apply ice bag or cold packs. Do not soak in hot water. Immobilize affected part and seek medical attention.

**Unconsciousness**

Never attempt to give anything by mouth. Keep victim lying flat, maintain open airway. If victim is not breathing, summon emergency medical personnel immediately (911).