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# HAZARDOUS MATERIALS HEALTH AND SAFETY PLAN

## Riverbend Stadium 217 Shirland Avenue Beloit, Wisconsin

April 3, 2020  
File No. 20.156720.00

### PREPARED FOR:

Brownfield Environmental Engineering Resources, LLC  
645 Third Street, Suite 250  
Beloit, Wisconsin 53511

### ON BEHALF OF:

Hendricks Commercial Properties  
525 Third Street, Suite 300  
Beloit, Wisconsin 53511

### Riverbend Stadium Authority

525 Third Street, Suite 300  
Beloit, Wisconsin 53511

### PREPARED BY

#### **GZA GeoEnvironmental, Inc.**

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April 3, 2020  
File No. 20.0156720.00

Mr. Brad Brown, P.E., Principal  
Brownfield Environmental Engineering Resources, LLC  
645 Third Street, Suite 250  
Beloit, Wisconsin 53511-6256

Re: Hazardous Materials Health and Safety Plan  
Riverbend Stadium  
217 Shirland Avenue  
Beloit, Wisconsin

Dear Mr. Brown:

GZA GeoEnvironmental, Inc. (GZA) is pleased to provide this Hazardous Materials Health and Safety Plan for working with and around soil potentially contaminated with polycyclic aromatic hydrocarbons, volatile organic compounds and metals. Other hazards may be present at the Site that are not addressed in this health and safety plan.

If you have any questions regarding this information, or we may be of further assistance, please contact the undersigned.

Very truly yours,

**GZA GeoEnvironmental, Inc.**

Kimberly A. Hoppe Parr, Ph.D.  
Senior Project Manager

Mark J. Krumenacher, P.G.  
Senior Principal

Richard L. Ecord, CIH, CSP  
Consultant/Reviewer

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Attachment



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## 1.0 INTRODUCTION

This Hazardous Materials Health and Safety Plan (HASP) was developed to identify environmental conditions associated with historical use of the property and establish procedures necessary for protecting construction personnel from potential safety and health hazards associated with subsurface construction within the specified scope of the Project. The "Project" is identified as Riverbend Stadium, located at 712 Shirland Avenue, adjacent to the Rock River (west and north), the City of Beloit Transfer Facility (east), and approximately 750 feet west of US Route 2 in Beloit, Wisconsin ("Site"). It is understood that the Site was formerly a coal gas manufacturing plant and will be redeveloped as a baseball stadium. The procedures in this HASP were developed based on current knowledge regarding the safety and health hazards from existing environmental contamination that are known or anticipated for the subsurface construction to be conducted at the Site.

The HASP was developed for Brownfield Environmental Engineering, LLC (Brownfield Environmental), on behalf of Hendricks Commercial Properties and Riverbend Stadium Authority (the "Owner"), as a guide for construction personnel working at the Site that may contact the soil and groundwater contaminated with polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and/or metals. The HASP summarizes the project organization and responsibilities; establishes procedures for preventing accidents, injuries, and illnesses; identifies hazards; discusses the personal protective equipment (PPE) that is to be used at the Site; and establishes emergency response procedures.

The HASP provides health and safety procedures to be implemented by the General Contractor during excavation and handling of existing subsurface soil. The HASP was developed to establish minimum health and safety guidelines for Contractor personnel. Each Subcontractor engaged by the Contractor is equally responsible for matters relating to the health and safety of its personnel and equipment during performance of the work. This HASP was prepared using general knowledge of the tasks that could be associated with the scope of work for this project.

Other safety hazards not associated with the subsurface soil quality such as physical and biological hazards that may be present at the Site are not addressed in this HASP. The General Contractor and Subcontractors must manage all safety hazards not covered in this document consistent with the requirements of the United States Department of Labor, Occupational Safety and Health Administration (OSHA).

### 1.1 SITE HAZARDS

#### 1.1.1 Chemical Hazards

The contaminants that may be encountered in the soil and addressed in this HASP are PAHs, VOCs, and metals summarized on Table 1.

## 2.0 PROJECT HEALTH AND SAFETY MANAGEMENT

This section describes the project health and safety personnel, the roles and responsibilities of health and safety personnel, and the administrative/management procedures that will be used to implement this HASP (including safety orientation and safety meetings). Additional Site-specific and regulatory training requirements may be required that are not addressed in this HASP.



## 2.1 HEALTH AND SAFETY PERSONNEL

This section establishes an organizational structure for the implementation of health and safety requirements established by this HASP. Workers are considered to have responsibility for health and safety commensurate with their assigned duties. The responsibility for compliance with the HASP, individual company policies and procedures, and applicable laws and regulations must be shared by management, supervisory personnel and staff members. Personnel associated with implementation of the HASP will be in contact with each other through routine Site meetings and cellular phones. Personnel assigned specific authority to implement and enforce the provisions of this HASP are identified in Appendix A. The roles and responsibilities of the personnel are described below:

- **Project Manager (PM):** The PM is responsible for the effective oversight and supervision of project staff necessary to control the health and safety aspects of daily operations and provide the resources necessary for the implementation of the HASP.
- **Site Supervisor/Foreman:** The Site Supervisor/Foreman will provide on-Site management of personnel, subcontractors, and material suppliers and will also be responsible for the effective oversight and supervision of project staff necessary to control the health and safety aspects of daily operations.
- **Site Safety and Health Officer (SSHO):** The SSHO is the competent individual located at the Site and who is responsible to the employer and has the authority and knowledge necessary to implement the HASP, recognize hazards, initiate amendments to the HASP, and verify compliance with applicable safety and health requirements. The SSHO has the authority to stop work on the project if a hazardous environment is encountered on-Site.
- **Site Employees:** Employees are responsible for reading and understanding this HASP and other health and safety plans developed by the General Contractor and their company.

## 2.2 TRAINING

Site-specific training is required of workers that may be exposed to soil containing PAHs, VOCs, and/or metals. Training must include reading and acknowledgment of the requirements of this HASP documented by signatures on the Health and Safety Orientation/Hazard Communication Record, provided as Appendix B. Included in Appendix B is a Periodic Health and Safety Briefing Record to be used by the General Contractor in addition to daily and shift health and safety briefings. Additional Site-specific and regulatory training requirements may be required at this Site that are not addressed in this HASP, including but not limited, to Hazardous Waste Operations and Emergency Response (HAZWOPER) training requirements specified in 29 CFR 1926.65

## 2.3 SITE ORIENTATION AND SAFETY MEETINGS

### 2.3.1 Site Safety Orientation

On-Site personnel are required to attend a Site Safety Orientation prior to conducting on-Site activities. The orientation will be conducted by the SSHO or a designated alternate (Site Supervisor) and will be provided at the beginning of the project and thereafter on an as needed basis whenever new personnel arrive at the Site to perform work. Attendance at the Site Safety Orientation will be documented using the orientation record provided in Appendix B. The Site Safety Orientation will provide an identification of specific Site hazards and an explanation of the safeguards to take; information on the limitations and proper use of PPE for Site hazards that may be encountered during construction activities. In



addition, the Site Safety Orientation will provide information on the limitations and proper uses of protective systems; and will provide a briefing on the Emergency Action Plan for the Site.

### 2.3.2 Safety Meetings/Periodic Meetings

The SSHO or a designated alternate (e.g. Site Supervisor) will conduct a daily “toolbox safety meeting” with on-Site personnel, to discuss pertinent safety concerns, including changes to the HASP, hazard-specific concerns, emergency rally points and review of accidents/incidents. The intent of these meetings is to ensure that on-Site personnel are kept abreast of safety issues daily. Documentation of the meetings will be the responsibility of the SSHO and will be maintained on-Site.

## 3.0 HAZARD ASSESSMENT

### 3.1 CHEMICAL HAZARDS

Chemical health hazards that may be encountered during soil excavation activities are related to potential exposure to PAHs, VOCs, and/or metals summarized below and in Table 1 from historical use of the property as a manufactured gas plant (MGP). Contaminant exposure routes include direct contact, particulate inhalation, and ingestion. Other chemical hazards related to unknown hazardous substances or chemicals brought on-Site (such as fuels, cleaning agents, etc.) are not addressed in this HASP. Safety data sheets (SDSs) for chemicals brought on-Site should be kept on-Site and available to Site workers. Employees involved in the handling of such chemicals should be trained on the chemical’s hazards and how to properly handle the materials, and the proper controls including required PPE.

#### 3.1.1 Polycyclic Aromatic Hydrocarbons (PAHs)

Several PAHs were detected in soil samples that could potentially be present at concentrations greater than the Construction Worker Regional Screening Levels (RSL) for Soil derived from tools available from the United States Environmental Protection Agency (USEPA) (<https://www.epa.gov/risk/regional-screening-levels-rsls>) for ingestion, OSHA Permissible Exposure Limit (PEL) for inhalation and/or American Conference of Governmental Industrial Hygienists (ACGIH) Time Weighted Average (TWA) Threshold Limit Value (TLV) for inhalation. The PAHs detected and reference standards are summarized on Table 1.

Due to the relatively low vapor pressure of PAH compounds, vapor hazards at ambient temperatures are not expected to occur. However, the odor threshold of some PAH compounds is much lower than the hazard concentrations, so they may be detected by construction workers and possibly non-workers when soil containing PAHs is exposed. If Site conditions are dry, the generation of contaminated dusts may pose a potential inhalation hazard and dust levels must be controlled. Work areas with high vehicular traffic must be wetted to control visible airborne dust.

Repeated contact with certain PAH compounds has been associated with the development of skin cancer. Contact of PAH compounds with the skin may cause photosensitization of the skin, producing skin burns after subsequent exposure to ultraviolet radiation. Incidental ingestion of soils via hand to mouth contact is also a potential exposure route.

The likelihood of PAH exposure above established exposure limits during soil excavation and handling operations is expected to be low when simple protective measures are taken. Primary exposure is through skin contact and secondarily through inhalation and/or accidental ingestion due to poor hygiene practices. Despite the low likelihood of exposure, if



contact with PAH-impacted soil or groundwater is expected, control measures should be taken to minimize exposure to PAHs. The protective measures include wearing chemical-resistant gloves, safety goggles, long sleeve shirts, and rubber boots when handling or working within PAH-contaminated soil. Good hygiene practices such as washing of hands will be instituted prior to eating and drinking, at the initiation of breaks, and before leaving the Site to minimize accidental ingestion of PAHs. If necessary, dust control measures such as water misting will be used to keep airborne dust concentrations low.

### 3.1.2 Volatile Organic Compounds (VOCs)

Several VOCs were detected in soil samples that could potentially be present concentrations greater than the direct contact levels for construction workers derived from the USEPA, OSHA, and ACGIH, as defined above for PAHs. The VOCs detected and reference standards are summarized on Table 1.

Elevated concentrations of VOCs can result in a potential inhalation hazard to employees during soil excavation and handling activities. Exposure to the vapors of VOC compounds may produce irritation of the mucous membranes of the upper respiratory tract, nose, and mouth and depression of the central nervous system. Symptoms of such exposure include drowsiness, headache, fatigue, and drunken-like behavior. The use of gloves during soil handling operations and good hygiene practices such as washing of hands will be instituted prior to eating and drinking to minimize accidental ingestion of VOCs.

### 3.1.3 Metals

Metals (arsenic, barium, cadmium, chromium, lead and mercury) were detected in soil samples collected from the Site. The metals detected and reference standards are summarized on Table 1. Based on the USEPA March 2007 Framework for Metals Risk Assessment, inorganic metals and metal compounds have unique characteristics that should be considered when assessing their risks.<sup>1</sup> The USEPA document states the following:

“Some of these characteristics typically are not considered when assessing the risks of organic substances. For example, metals are neither created nor destroyed by biological or chemical processes; they are transformed from one chemical form to another. Native (zero valence) forms of most metals and some metal compounds are not readily soluble, and as a result, toxicity tests based on soluble salts may overestimate the bioavailability and toxicity of these substances. Some metals (e.g., copper, selenium, and zinc) are nutritionally essential elements at low levels but toxic at higher levels, and others (e.g., lead, arsenic, and mercury) have no known biological functions. The following metals principles should be addressed and incorporated into inorganic metals risk assessments.

- Metals are naturally occurring constituents in the environment and vary in concentrations across geographic regions.
- All environmental media have naturally occurring mixtures of metals, and metals are often introduced into the environment as mixtures.
- Some metals are essential for maintaining proper health of humans, animals, plants, and microorganisms.

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<sup>1</sup> <https://www.epa.gov/sites/production/files/2013-09/documents/metals-risk-assessment-final.pdf>



- Metals, unlike organic chemicals, are neither created nor destroyed by biological or chemical processes; although, these processes can transform metals from one species to another (valence states) and can convert them between inorganic and organic forms.
- The absorption, distribution, transformation, and excretion of a metal within an organism, depends on the metal, the form of the metal or metal compound, and the organism's ability to regulate and/or store the metal."<sup>2</sup>

The use of gloves during soil excavation and handling operations where contact with soil is possible will reduce exposure due to direct contact. Good hygiene practices such as washing of hands will be instituted prior to eating and drinking to minimize accidental ingestion of metals including arsenic.

### 3.2 UNKNOWN MATERIALS

If construction personnel encounter conditions that indicate the presence of unanticipated hazardous materials in a particular work zone, the work area will be evacuated until the situation can be evaluated. Site personnel shall report all incidents to the Site SSHO and Site management as soon as possible. The SSHO and Site management will determine the appropriate action to take.

## 4.0 PERSONAL PROTECTIVE EQUIPMENT

The personal protection requirements are based on the anticipated chemical hazards and potential exposure routes (i.e., inhalation, skin contact, ingestion). The level of protection (LOP) requirements described below are subject to upgrade or downgrade based on air monitoring results and the results of chemical characterization, if determined to be necessary. However, a LOP downgrade may only be instituted with the approval of the SSHO in consultation with a CIH.

PPE will be donned, as described below, for the activities covered by this HASP. PPE used on-Site will conform to requirements of American National Standards Institute (ANSI) and/or American Society for Testing and Materials (ASTM), as appropriate.

### 4.1 LEVEL D

Level D PPE, as defined below, shall be worn by all workers that do not have direct contact with potentially contaminated soil, the atmosphere contains no known hazard, and work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

- Hard-hat;
- Long pants and shirt;
- Work boots/shoes, steel toe or safety toe and shank;
- Boots, outer, chemical-resistant (disposable) (1);
- Hearing protection (1);

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<sup>2</sup> Ibid.



- Gloves (1);
- Safety glasses; and
- Reflective traffic safety vest.

*(1) = Optional, as applicable.*

#### 4.2 MODIFIED LEVEL D

Modified Level D PPE, as defined below, shall be worn by workers that may have direct contact with potentially contaminated soil, the atmosphere contains no known hazard, and work functions preclude splashes, immersion, or the potential for unexpected inhalation with hazardous levels of any chemicals. Contractor personnel engaged in these activities shall meet Hazardous Waste Operations and Emergency Response (HAZWOPER) training covered under OSHA standard 29 CFR Part 1926.65.

- Hard-hat;
- Long pants and shirt;
- Work boots/shoes, steel toe or safety toe and shank;
- Boots, outer, chemical-resistant (disposable);
- Hearing protection (1);
- Gloves, outer, chemical-resistant;
- Gloves, inner, chemical-resistant;
- Safety glasses; and
- Disposable chemical-resistant overalls.

*(1) = Optional, as applicable.*

#### 4.3 LEVEL C

Level C PPE, as defined below, shall be worn by workers that have direct contact with potentially contaminated soil, the atmosphere contains known hazards, and work functions include the potential for unexpected inhalation of hazardous levels of chemicals. Contractor personnel engaged in these activities shall meet HAZWOPER training and follow all the OSHA respiratory standard requirements: fitness for duty, fit testing of respirator, medical monitoring, etc.

- Hard-hat;
- Long pants and shirt;
- Work boots/shoes, steel toe or safety toe and shank;
- Boots, outer, chemical-resistant (disposable)
- Hearing protection (1);
- Gloves, outer, chemical-resistant;



- Gloves, inner, chemical-resistant;
- Safety glasses;
- Disposable chemical-resistant overalls; and
- Full-face or half-mask, air purifying respirators (National Institute for Occupational Safety and Health [NIOSH] approved).

*(1) = Optional, as applicable.*

## 5.0 CONTRACTORS MEDICAL SURVEILLANCE PROGRAM

Workers that may have direct contact with potentially contaminated soil, the atmosphere may contain known hazards, and work functions include the potential for unexpected inhalation of hazardous levels of chemicals, shall meet the HAZWOPER medical monitoring requirements summarized below.

### 5.1 MEDICAL MONITORING

Personnel who will be handling impacted soil and/or groundwater will be active participants in a Medical Monitoring Program consistent with the requirements of the Hazardous Waste Operations Standard 29 CFR 1926.65 that provides a fit for duty assessment and respiratory clearance for personnel who may be required to wear respirators. Medical monitoring must be administered by a Board-Certified occupational physician. Site workers will maintain Medical Clearance Letters, respiratory fitness questionnaire, and fit testing records with their employer who will produce the required paperwork if requested.

## 6.0 SITE CONTROL

To control exposure of unprotected personnel and migration of contaminated soil due to tracking by personnel or equipment, work areas, a contaminant reduction zone, and PPE requirements will be clearly identified by the General Contractor for Owner review. These areas may vary with time as work within subsurface soil is performed and completed, and will be demarcated by fencing, flagging, traffic cones, and signage.

### 6.1 OTHER SITE CONTROL AND SAFETY MEASURES

The following measures are designed to augment the specific health and safety guidelines provided in this HASP.

- Avoidance of contamination is of the utmost importance. The following guidelines should be followed by Site personnel: avoid contact with contaminated or potentially contaminated soil, groundwater, surfaces, or other materials; walk around (not through) standing water; review work task and complete work in a manner that reduces contact with contaminated soils.
- Hands and face must be thoroughly washed upon leaving the work area and before eating or drinking. Contractor will provide adequate sanitation and wash water resources as necessary for employees.



- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of materials is prohibited except outside the contaminant reduction zone after proper decontamination and thorough hand washing.
- Equipment that has been in contact with contaminated material will be decontaminated or discarded in the contaminant reduction zone.

## 6.2 SITE SECURITY

The Site Manager is responsible for identifying the presence of personnel on the Site. A Site Entry/Site Exit Log will be maintained at the Site for this purpose. Equipment left on-Site during off hours must be locked, immobilized, and/or otherwise secured against theft or unauthorized use or access.

## 7.0 **DECONTAMINATION**

Proper decontamination will be performed for personnel and equipment in the contaminant reduction zone before moving elsewhere on Site or leaving the Site. Materials and equipment used for decontamination will be properly disposed.

### 7.1 PERSONNEL DECONTAMINATION

Personnel that require decontamination will involve the removal of disposable PPE, such as nitrile gloves, and placement into polyethylene trash bags in an on-Site container. Alternative personnel decontamination procedures for working in contaminated areas would be accomplished by following a systematic procedure of cleaning and removal of non-disposable personal protective clothing. Non-disposable contaminated PPE, such as boots, should be washed free of gross contamination. Alternative decontamination procedures, such as steam-cleaning or power-washing reusable rubber outer boots, may be used if necessary. A hand and face washing station will be provided on-Site for personnel decontamination.

Steps required in a decontamination sequence will depend on the level of protection worn in accordance with Section 4.0 and would generally follow the procedures below:

1. Remove hard hat and wipe clean;
2. Wash outer boots and gloves of gross contamination;
3. Remove outer boots;
4. Remove outer gloves;
5. Remove protective coveralls; and
6. Remove inner gloves.

### 7.2 EQUIPMENT DECONTAMINATION

Heavy equipment will be decontaminated in the contaminant reduction zone at a designated location equipped with control measures to capture waste materials for proper disposal as needed. Cleaning of equipment as needed will be by



“dry decon” methods, i.e. use of shovels, brushes and brooms to remove soil without the use of water. If copious amounts of soil remain on equipment, high-pressure water (greater than 90 pounds per square inch [psi]) or a steam cleaner will be used at the discretion of the SSHO. The SSHO will visually determine the adequacy of the heavy equipment decontamination.

## 8.0 AIR MONITORING

A worker air monitoring program will be implemented during excavation and handling of the contaminated soil. The purpose of the air monitoring program is to evaluate the potential inhalation exposure hazards in the worker breathing zone and to mitigate the potential exposure using proper administrative and engineering controls. The air monitoring program will consist of air monitoring for worker protection designed to achieve compliance with OSHA PELs or other recognized occupational exposure limits and to serve as a basis for identifying appropriate controls including PPE requirements and other safety measures during ongoing on-Site activities.

### 8.1 AMBIENT AIR MONITORING

During excavation activities, the SSHO will make observations regarding VOCs and airborne dust. A DustTrak DRX 8534, dust monitor, or similar, shall be utilized to confirm airborne dust concentration to monitor PAH and metals concentrations. The action level for PAHs is 0.1 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ) (50% of the OSHA PEL) and for metals (arsenic) is  $0.005 \text{ mg}/\text{m}^3$  (50% of OSHA PEL). If the action level is exceeded, ground wetting and/or other engineering and administrative controls will be implemented by the SSHO.

A photoionization detector (PID) equipped with a 10.6eV lamp shall be utilized to estimate airborne VOCs in the breathing zone of workers that may be exposed to contaminated soil. The action level will be 5 ppm, 50% of the OSHA PEL for benzene. Should the PID detect concentrations above the action level that are sustained continuously for more than 1 minute in the breathing zone of workers, work associated with this operation shall stop, workers will exit the area and notify the SSHO. The SSHO will sample the area to determine if elevated concentrations are present. If elevated levels persist, the exposed soil may be allowed to ventilate. If feasible or further action may be needed to reduce the vapor concentration by using wetting or other agents and/or increasing the level of PPE to Level C, including the use of respiratory protection.

## 9.0 EMERGENCY ACTION PLAN

If an accident or some other incident, such as an explosion, a release to groundwater or the environment, or an exposure to toxic chemical levels occurs during the Project, the SSHO and Project Manager will be notified immediately. The Owner, Local Emergency Planning Commission (LEPC), and other appropriate federal, state, and local authorities and agencies will be notified by the SSHO in accordance with the General Contractor’s comprehensive Health and Safety Plan, including the Emergency Action Plan for the Site.

### 9.1 EMERGENCY CONTACTS

Emergency contacts associated with this HASP are included in Appendix A.



### 9.1.1 Hospital Location

The nearest hospital to the Site is Beloit Memorial Hospital located at 1969 West Hart Road, Beloit, Wisconsin. A map showing the location of and directions to this hospital from the proposed Riverbend Stadium is provided in Appendix C.

### 9.2 EMERGENCY EQUIPMENT AND SUPPLIES

The following equipment will be in an accessible area on-Site and designated personnel will be trained in its use:

- First aid kit (adequate to accommodate the number of site personnel);
- Fire extinguisher(s) (minimum size-10-pound ABC);
- Decontamination equipment as specified in Section 7.0 (polyethylene trash bags, detergent solution, water, basins and brushes for boot wash, paper towels, wipe pads, hand soap, power washer, etc.); and
- Standard spill kit containing spill neutralizing/absorbing materials.

### 10.0 UPDATING THE HASP

The SSHO or a designated alternate (Site Supervisor) will notify the CIH designated in the HASP if on-Site conditions or operations change so that the applicability of the procedures in this HASP can be re-evaluated and revised, if necessary. This HASP may be modified only with the approval of GZA.

### 10.1 CRITIQUE OF RESPONSE AND FOLLOW-UP

It may also be appropriate to establish additional or alternative health and safety procedures for general Site safety after a change in conditions. The new procedures will be developed by the CIH and the SSHO in consultation with other project management personnel. The HASP will be amended as necessary.



**TABLE**

**TABLE 1**  
**CHEMICALS DETECTED AT THE SITE AND CORRESPONDING REGULATORY STANDARDS**  
**Riverbend Stadium**  
**217 Shirland Avenue**  
**Beloit, Wisconsin**

PARAMETERS IDENTIFIED AT THE SITE	Regulatory and Consensus Standards					
	DIRECT CONTACT (ppb) <sup>1, 2</sup>	INGESTION (ppb)	INHALATION: OSHA PEL (TWA) <sup>3</sup> (ppm) <sup>4</sup>	INHALATION: OSHA STEL <sup>5</sup> (ppm)	INHALATION: ACGIH TLV (TWA) <sup>6</sup> (ppm)	INHALATION: ACGIH STEL <sup>7</sup> (ppm)
<b>VOCs (USEPA 8260)<sup>8</sup></b>						
Benzene	ns <sup>9</sup>	339,000	1	5	0.5	2.5
n-Butylbenzene	ns	339,000	ns	ns	ns	ns
sec-Butylbenzene	ns	339,000	ns	ns	ns	ns
1,2-Dichlorobenzene	ns	20,400,000	ns	50 (ceiling)	25	50
1,4-Dichlorobenzene	ns	2,380,000	75	ns	10	ns
Ethylbenzene	ns	1,700,000	100	ns	20	ns
Isopropylbenzene (Cumene)	ns	13,600,000	50	ns	50	ns
p-Isopropyltoluene	ns	ns	ns	ns	ns	ns
Methyl-tert-butyl-ether	ns	10,200,000	ns	ns	50	ns
Naphthalene	48,900,000	20,400,000	10	ns	2	ns
n-Propylbenzene	ns	3,390,000	ns	ns	ns	ns
Styrene	ns	6,790,000	100	200 (ceiling)	20	40
Toluene	ns	27,200,000	200	300 (ceiling)	20	ns
1,2,4-Trimethylbenzene	ns	1,360,000	ns	ns	25	ns
1,3,5-Trimethylbenzene	ns	1,360,000	ns	ns	25	ns
m&p-Xylene						
o-Xylene	ns	6,790,000	100	NS	100	150
Xylenes (total)	ns	13,600,000	100	NS	100	150
<b>PAHs (USEPA 8270)<sup>10</sup></b>						
	DIRECT CONTACT (ppb)	INGESTION (ppb)	INHALATION: OSHA PEL (TWA) (mg/m <sup>3</sup> ) <sup>11</sup>	INHALATION: OSHA STEL (mg/m <sup>3</sup> )	INHALATION: ACGIH TLV (TWA) (mg/m <sup>3</sup> )	INHALATION: ACGIH STEL (mg/m <sup>3</sup> )
Acenaphthene	16,300,000	6,790,000	ns	ns	ns	ns
Acenaphthylene			ns	ns	ns	ns
Anthracene	81,400,000	33,900,000	0.2	ns	0.2	ns
Benzo(a)anthracene			ns	ns	ns	ns
Benzo(a)pyrene	24,400	10,200	0.2	ns	0.2	ns
Benzo(b)fluoranthene	ns	ns	ns	ns	ns	ns
Benzo(g,h,i)perylene	ns	ns	ns	ns	ns	ns
Benzo(k)fluoranthene	ns	ns	ns	ns	ns	ns
Chrysene	ns	ns	0.2	ns	ns	ns
Dibenz(a,h)anthracene	ns	ns	ns	ns	ns	ns
Fluoranthene	8,140,000	3,390,000	0.2	ns	0.2	ns
Fluorene	32,600,000	13,600,000	ns	ns	ns	ns
Indeno(1,2,3-cd)pyrene	ns	ns	ns	ns	ns	ns
1-Methylnaphthalene	5,700,000	2,380,000	ns	ns	0.5	ns
2-Methylnaphthalene	326,000	136,000	ns	ns	0.5	ns
Naphthalene	48,900,000	20,400,000	10	ns	10	ns
Phenanthrene	ns	NS	0.2	ns	0.2	ns
Pyrene	24,400,000	10,200,000	0.2	ns	0.2	ns
<b>Metals (USEPA 6010)<sup>12</sup></b>						
	DIRECT CONTACT (ppb) <sup>1</sup>	INGESTION (ppb)	INHALATION: OSHA PEL (TWA) (mg/m <sup>3</sup> )	INHALATION: OSHA STEL (mg/m <sup>3</sup> )	INHALATION: ACGIH TLV (TWA) (mg/m <sup>3</sup> )	INHALATION: ACGIH STEL (mg/m <sup>3</sup> )
Arsenic	106,000	17,000	0.01	ns	0.01	ns
Barium	ns	6,790,000	0.0002	ns	0.5	ns
Cadmium	132,000	17,000	0.005	ns	0.01 (total) 0.002 (resp)	ns
Chromium	ns	ns	ns	ns	0.003 (IDLH) <sup>13</sup>	ns
Lead*	ns	ns	0.05	ns	0.05	ns
Mercury	ns	0	ns	0.1 (ceiling)	0.025	ns

**Notes:**

1. Direct contact and ingestion standards obtained at <https://www.epa.gov/risk/regional-screening-levels-rsls>.
2. ppb = parts per billion.
3. United States Department of Labor, Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) as an 8-hour time weighted average (TWA).
4. ppm = parts per million.
5. United States Department of Labor, Occupational Safety and Health Administration (OSHA) Short-Term Exposure Limit (STEL).
6. American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV).
7. American Conference of Governmental Industrial Hygienists (ACGIH) Short-Term Exposure Limit (STEL).
8. VOC= Volatile Organic Compounds, identified using United States Environmental Protection Agency (USEPA) 8260.
9. ns = No regulatory or consensus standard has been established.
10. PAHs = Polycyclic aromatic hydrocarbons, identified using United States Environmental Protection Agency (USEPA) 8270.
11. mg/m<sup>3</sup> = milligram per cubic meter of air.
12. Metals identified using United States Environmental Protection Agency (USEPA) Method 6010.
13. IDLH = Immediately Dangerous to Life and Health.



**APPENDIX A**  
**EMERGENCY CONTACTS**

**HAZARDOUS MATERIALS  
HEALTH AND SAFETY PLAN**

**APPENDIX A  
EMERGENCY CONTACTS**

**Riverbend Stadium  
Beloit, Wisconsin**

In the event of an emergency, assistance may be requested using the following telephone numbers:

<b>Contact</b>	<b>Telephone Number</b>
Fire Department: City of Beloit	
Police Department: City of Beloit	
Public Works: City of Beloit	

<b>Site Personnel</b>	<b>Contact</b>
Project Manager:	
Site Safety and Health Officer:	
Site Supervisor/Forman:	



## **APPENDIX B**

### **HEALTH AND SAFETY BRIEFING/SITE ORIENTATION RECORD**







**APPENDIX C**  
**HOSPITAL ROUTE**



from 246-230 Shirland Ave, Beloit, WI 53511  
to Beloit Memorial Hospital, 1969 W Hart Rd, Beloit, W...

13 min (4.8 miles)



via Prairie Ave

Best route

246-230 Shirland Ave

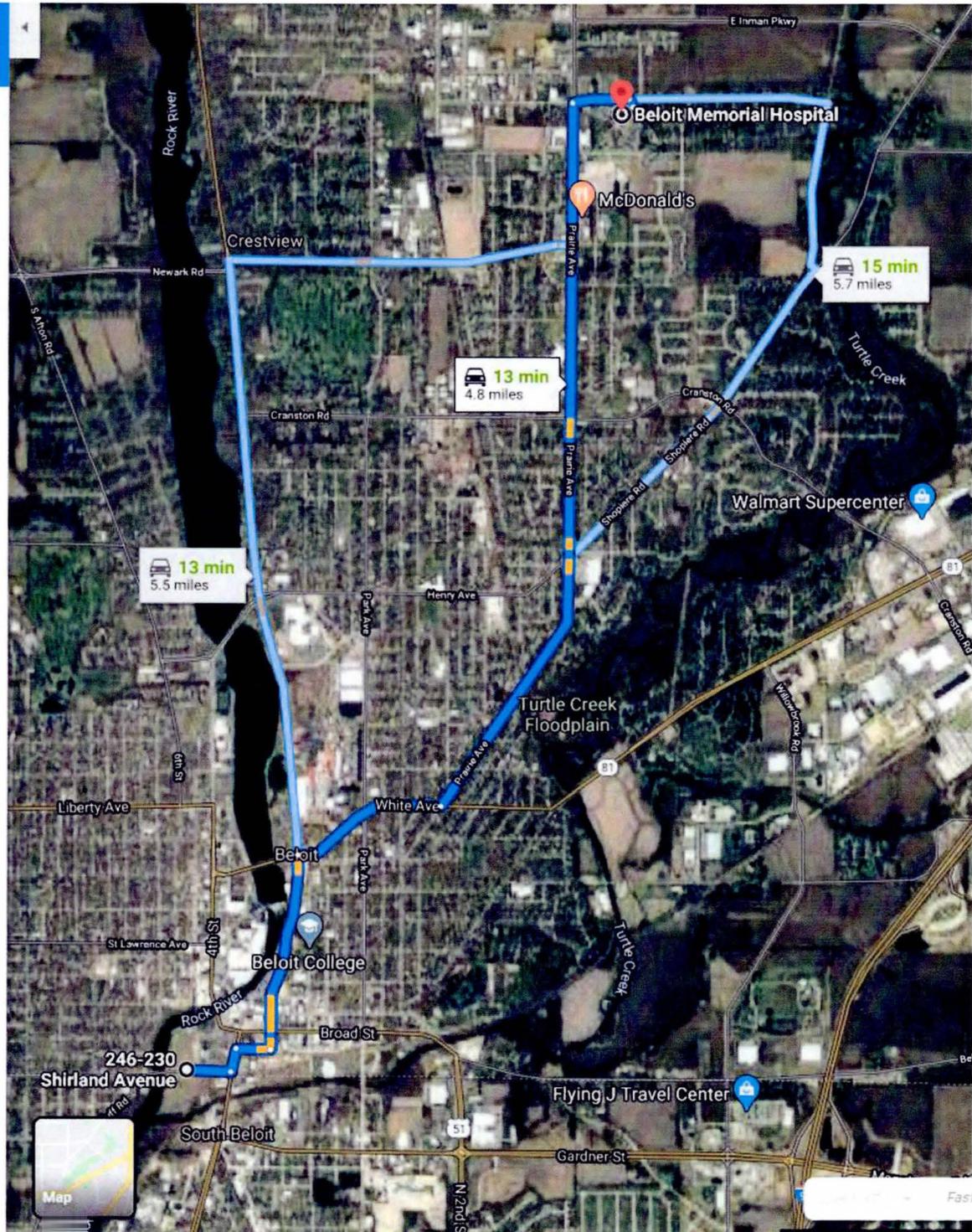
Beloit, WI 53511

- > Take Prairie Ave to Huebbe Pkwy  
12 min (4.6 mi)
- > Continue on Huebbe Pkwy to your destination  
1 min (0.3 mi)

Beloit Memorial Hospital

1969 W Hart Rd, Beloit, WI 53511

These directions are for planning purposes only. You may find that construction projects, traffic, weather or other elements may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.





GZA GeoEnvironmental, Inc.