Limited Site Investigation
Sampling and Analysis Plan
Blackhawk Junction
Prairie du Chien, Wisconsin

September 21, 2020

Prepared for:

Wisconsin Department of Natural Resources
101 South Webster Street – RR/5
P.O. Box 7921
Madison, WI 53707-7921

Prepared by:

Customer-Focused Environmental & Industrial Solutions

Bay West LLC
5 Empire Drive
St. Paul, MN 55103

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Acronyms and Abbreviations

°C.....degrees Celsius
Bay West .....Bay West LLC
CFR .....Code of Federal Regulations
CoC .....chain of custody
GPS.....global positioning system
HCL .....Hydrochloric Acid
HDPE.....High Density Polyethylene
HSA .....hollow stem auger
IDW.....investigation-derived waste
mL.....milliliters
MS/MSD .....matrix spike/matrix spike duplicate
NTP .....Notice to Proceed
OSHA .....Occupational Safety and Health Administration
oz.....ounce
PVC ..... Polyvinyl Chloride
QAPP..... Quality Assurance Project Plan
RCRA..... Resource Conservation and Recovery Act
SAP..... Sampling and Analysis Plan
SOP ..... standard operating procedure
SSHP ..... Site Safety and Health Plan
USEPA..... U.S. Environmental Protection Agency
UST..... Underground Storage Tank
VOA ..... Volatile Organic Analysis
VOCs ..... Volatile Organic Compounds
WDNR..... Wisconsin Department of Natural Resources

1.0 INTRODUCTION

Bay West LLC (Bay West) has prepared this Sampling and Analysis Plan (SAP) to conduct a Limited Site Investigation (LSI) at the Blackhawk Property (the Site) located in Prairie du Chien, Wisconsin. This LSI is based on the scope of work requested by the Wisconsin Department of Natural Resources (WDNR) to complete an assessment of groundwater quality at the Site.

This SAP is intended to be implemented in conjunction with Bay West's approved programmatic Quality Assurance Project Plan (QAPP) developed to describe the personnel, procedures, and methods for ensuring the quality, accuracy, and precision of data associated with sites assessed through the WDNR Brownfields Assessment Monies (WAM) program.

This SAP summarizes the Site background and problem definition, sample network design, and field investigation and sampling protocols.

This SAP is organized as follows:

- Section 1 – Introduction
- Section 2 – Site Background and Objectives
- Section 3 – Scope and Rationale of Phase II Assessment
- Section 4 – Field Investigation Protocols
- Section 5 – Reporting
- Section 6 – Cost Estimate
- Section 7 – Schedule
- Section 8 – References

Interested Parties:

Property Owner Representative: Mr. Garth Frable Planner, City of Prairie du Chien 214 East Blackhawk Avenue Prairie du Chien, Wisconsin 53821 Phone: (608) 326-8024	Consultant: Bay West 5 Empire Drive St. Paul, MN 55103 Contact: Rick Van Allen rickv@baywest.com
Regulatory Agency (Project Manager): WDNR 1300 W Clairemont Ave Eau Claire, WI 54701 Contact: Matt Vitale Matthew.Vitale@wisconsin.gov	Regulatory Agency (Project Coordinator): WDNR 101 South Webster Street – RR/5 Madison, WI 53707-7921 Contact: Tom Coogan Thomas.Coogan@wisconsin.gov

2.0 SITE BACKGROUND AND OBJECTIVES

2.1 Site Background

The Site property is located at 700 East Blackhawk Avenue, Prairie du Chien, Crawford County, Wisconsin 54738 (**Figure 1**), and is approximately 9.13 acres in size. The Property is a largely vacated site that was built over a 20-year period beginning in 1962. It has historically operated with multiple commercial, service and retail operations, with multiple drycleaners functioning onsite. The Property is currently improved with two buildings: one approximately 60,000 square foot vacant building and one approximately 20,000 square foot commercial building occupied by H & R Block, Mississippi Meats, and Associated Bank (**Figure 1**).

Per the Crawford County Interactive Parcel Application Map, the parcel identification numbers (PIDs) for the Property are 27107490000 & 27107500000. The center of the Property is located at latitude 43.0512140° and longitude -91.1368730° (decimal degrees). The Property is not platted through the Public Land Survey System based on its location in the un-platted City of Prairie du Chien.

The property is improved with a shopping center and parking lots, with one of the two remaining on-site buildings currently occupied, addressed as 700 E Blackhawk Ave. Current Property tenants in the 700 E Blackhawk Ave building include Associated Bank, H & R Block, Mississippi Meats, and Suppz Gym. The other building was vacant at the time of the Bay West Phase I ESA in October 2019.

Available historical information indicates the Property has been improved by commercial retail buildings since the 1960s. It has historically operated with multiple commercial, service and retail operations, including a car wash/gasoline service station and several dry cleaning tenants.

In 1991, tetrachloroethene (PCE) was detected in the soil and groundwater on the site after chlorinated volatile organic compound (CVOC) contamination was detected in two nearby municipal wells. Limited assessments were conducted in 2009-2010, but the nature, degree, and extent of contamination is unknown; providing a barrier to redevelopment. A fire destroyed a significant part of the larger building in 2014 including the area where the drycleaners had been located. Crawford County acquired the Site through tax forfeiture in June 2019.

In October 2019 Bay West conducted a Phase I ESA on the Site on behalf of the WDNR. Bay West's Phase I report identified the following recognized environmental conditions (RECs) and vapor encroachment concerns (VECs) associated with the Site:

- The documented presence of PCE and other CVOCs in soil, groundwater, and soil vapor at locations onsite and in the surrounding area represents a REC and a VEC for the Property.
- The potential for a release from USTs associated with a former gasoline service station/car wash and associated pump island located in the northeastern portion of the Property represent a REC and VEC for the Property.

Bay West completed a Phase II ESA on the Site in March 2020; this scope of work included advancing eight soil borings (SB-01 through SB-08) to depths of 30 feet below ground surface (bgs) near the former dry cleaners (SB-01 through SB-04), and to depths of 15 feet bgs near the former car wash/gasoline service station (SB-05 through SB-08). Soil samples were collected near the boring terminus for analysis of contaminants of concern related to the historical uses of the property as a dry cleaner and service station.

All soil samples collected during this Phase II were analyzed for volatile organic compounds (VOCs); soil samples collected from SB-05 through SB-08 were also analyzed for Resource

Conservation and Recovery Act (RCRA) metals and diesel-range organics (DRO). Soil sample laboratory results were compared to Wisconsin Administrative Code § NR 720 non-industrial direct contact residual contaminant levels (RCLs) and protection of groundwater RCLs. None of the analytes were detected at concentrations exceeding Wisconsin Department of Natural Resources (WDNR) non-industrial direct contact RCLs or protection of groundwater RCLs, with the exception of PCE and arsenic as described. PCE was detected at an estimated concentration above the protection of groundwater RCL in SB-03 (23-25). Arsenic was detected at estimated concentrations above the groundwater RCL, but below the background threshold value in SB-05 (4-8), SB-06 (4-8), and SB-07 (4-8).

Bay West collected groundwater samples from four of the soil boring locations (SB-01 through SB-04) near the former dry cleaner. Groundwater samples were analyzed for VOCs. Laboratory results of groundwater samples were compared to Wisconsin Administrative Code § NR 140 Enforcement Standards (ES) and Preventive Action Limits (PALs). Laboratory analysis of the groundwater samples did not indicate the presence of VOCs at concentrations greater than their respective NR 140 PALs and/or ESs with the exception of PCE. PCE concentrations were above the NR 140 PALs in all groundwater samples collected. Furthermore, PCE concentrations were above the NR 140 ES of 5 micrograms per liter in groundwater samples collected from SB-03 and SB-04.

Soil vapor samples were collected for analysis of VOCs in order to assess potential vapor intrusion concerns. PCE was detected at concentrations exceeding WDNR Sub-Slab Air Vapor Limits for residential use in samples collected from SV-02, SV-03, and SV-04. None of the other analytes were detected at concentrations exceeding WDNR Sub-Slab Air Vapor Limits for residential use.

Based on the findings of the Phase II ESA, Bay West made the following recommendations:

- Geophysical Survey: Several anomalies were detected in the vicinity of the former car wash and gasoline filling station on the northeast corner of the Site during the geophysical survey. Prior to any soil disturbance, Bay West recommends performance of test pits or focused excavation in the vicinity of the anomalies to determine if buried petroleum infrastructure is present.
- Soil: VOCs, DRO, and metals were not detected at concentrations exceeding their respective non-industrial RCLs. Chlorinated solvents were, however, detected in several soil samples collected at the Site exceeding the soil to groundwater RCLs. If future development activity in the area of the former dry cleaner considers construction of stormwater infiltration features, soil sampling in the footprint of infiltration features may be required to ensure that residual soil contaminants are not present exceeding the soil to groundwater RCLs.
- Groundwater: Bay West understands that the Site is located within the bounds of municipal water service provided by the City of Prairie du Chien. Based on the lack of immediate receptors, Bay West does not believe the detected groundwater contamination poses an imminent threat to public health; however, additional off-site groundwater sampling may be warranted to the south-southwest to fully define the extent and magnitude of chlorinated VOCs in groundwater.
- Soil Vapor: PCE was detected at elevated concentrations in the vicinity of the former dry cleaner on-site. Bay West recommends that any future building(s) constructed in the vicinity of SV-02, SV-03, and SV-04 be equipped with sub-slab depressurization systems to mitigate potential vapor intrusion from the former dry-cleaning solvent release.

In August 2020 the WDNR requested that Bay West conduct additional groundwater assessment activities near the former dry cleaner building. Specifically, the WDNR requested that Bay West install monitoring wells and conduct groundwater sampling to define the degree and extent of

PCE contamination in groundwater to the west, southwest, and east of the former dry cleaners building.

2.2 Limited Site Investigation Objectives

The objective of this LSI is to delineate the degree and extent of PCE contamination in groundwater at the Site. Specifics of the sampling design are provided in **Section 3.0** and the groundwater sampling methods are provided in **Section 4.0**.

2.3 Safety and Security

Site safety and security is addressed in the Site Safety and Health Plan (SSHP). All field staff will maintain health and safety training to ensure compliance with Occupational Safety and Health Administration (OSHA) as established in 29 Code of Federal Regulations (CFR) 1910.120 and 29 CFR 1910.126 (as applicable).

3.0 SCOPE AND RATIONALE OF LIMITED SITE INVESTIGATION

Previous groundwater sampling work completed at the Site has not delineated the extent and magnitude of groundwater contamination and a network of wells does not exist to document the plume stability and degradation. To complete the delineation, Bay West will complete the following scope of work:

- Prior to well installation activities Bay West will locate buried utilities in the project area through the Wisconsin Diggers Hotline one-call system. The drilling contractor will also utilize a private utility locator as needed.
- Advance five hollow-stem auger borings to depths of approximately 30 feet below grade at the locations illustrated on **Figure 1**. These borings will be completed as 2-inch diameter PVC monitoring wells with 15-foot screens set at approximately 10-25 feet below grade. These proposed well depths are based on the depth of groundwater observed during the previous sampling work conducted by Bay West where groundwater was observed at approximately 18 feet below grade. The well locations are intended to provide an upgradient clean well (MW-1), a source well (MW-3), two side-gradient delineation wells, (MW-2 and MW-4), and one down gradient clean well (MW-5).
- Survey the top of casing elevations of the newly installed monitoring wells to allow for groundwater elevation contouring.
- Conduct two rounds of groundwater sampling at the 5-well network. The first round of sampling will be completed approximately 2 weeks following installation of the wells by Bay West. The second round of sampling will be completed approximately 3 months after the initial round of sampling.
- Groundwater samples will be collected using a low-flow sampling method following stabilization of field parameters. The samples will be submitted to Pace Analytical Services for analysis of VOCs using EPA Method 8260.

Table 3-0 provides a summary of boring locations, sample matrices, sample depths, and rationale.

Table 3-0 Sampling Rationale

Well ID	Rationale	Matrix	Analysis
MW-1 through MW-5	Assess groundwater quality	water	VOCs

4.0 FIELD INVESTIGATION PROTOCOLS

The field investigation activities/procedures presented within the following sections will be conducted in accordance with the approved WDNR programmatic QAPP (Bay West, 2017), and applicable Bay West SOPs (attached as Appendix 1 to the programmatic QAPP), and this SAP.

4.1 Sample Mapping

A sub-meter global positioning system (GPS) unit will be used to identify and map all well locations. If other significant features of environmental concern are noted on the Site during the field work, these features will be mapped as well with a description, photograph, and comments in the field log.

4.2 Sampling Equipment and Procedures

4.2.1 Soil Boring/Well Installation

The soil borings will be completed using 4.25-inch inside diameter hollow stem augers advanced to approximately 30 feet below grade. The driller will then install a 2-inch diameter PVC monitoring well with a 15-foot screen set at approximately 10-25 feet below grade. The wells will be finished as either a flush-mount or above-grade finish depending on location.

4.2.2 Surveying

Following installation of the new monitoring wells, Bay West field staff will survey their top of casing and ground surface elevations using a laser survey level. Elevation measurements will be tied to a location with a known elevation in feet above mean sea level which will allow Bay West to contour groundwater elevations from the five wells and evaluate groundwater flow direction.

4.2.3 Groundwater Sampling

Prior to purging and groundwater sample collection Bay West will gauge groundwater levels in all wells using an electronic water level indicator. Water level measurements will be collected to the nearest hundredth of a foot.

Bay West will use low-flow sampling techniques to purge and sample the wells. The low-flow method involves purging the well at a low rate (<0.5 liters/minute) while maintaining little or no drawdown within the well column, leaving stagnant water above the well screen in place while drawing directly from the aquifer. This method minimizes the potential for raising the turbidity in the well which could bias both inorganic and organic results.

Bay West will sample the wells using either a peristaltic pump and high-density polyethylene tubing or a low-flow bladder pump with high-density polyethylene tubing. Once the well drawdown has stabilized (ideally less than 0.3 feet), a flow through cell will be connected to the purge line and the following parameters are measured and recorded every 3 to 5 minutes until all have stabilized for three consecutive readings or until a maximum of 1 hour:

Parameter	Stabilization Criteria
Conductivity (mS/cm3)	+/- 5% mS/cm3
Dissolved Oxygen (mg/L)	+/- 0.5 mg/L
ORP (mV)	+/- 20 mV
pH	± 0.1 unit
Temperature (°C)	+/- 0.1 °C
Turbidity (NTU)	<= 5 NTU

4.2.4 Field Documentation

A field notebook or electronic log will be used to record field-collected data. Data to be recorded includes the following:

- The date, names of sampling crew members, and general weather conditions will be recorded on a daily basis;
- A description of daily field activities, sample collection information, other pertinent observations, and any deviations from the approved SAP.

4.3 Laboratory Analytical Procedures

4.3.1 Groundwater Sample Analytical Methods

Bay West will submit groundwater samples collected at the monitoring wells for analysis of VOCs. Laboratory analytical methods, container requirements, preservation, and holding times are summarized in **Table 4-1**.

Table 4-1 Groundwater Sample Container, Preservation, and Holding Times

Analysis	Container	Preservation	Holding Time
VOCs (8260D)	3 – 40 mL level 2 glass VOA vials	HCl to pH <2, cool to < 6° C, but not frozen	14 days if preserved, 7 days for unpreserved

4.3.2 Quality Control Samples

In accordance with the programmatic QAPP and updates (Bay West, 2017), Bay West will collect field duplicate samples for analysis using identical recovery techniques and treated in an identical manner during storage, transportation, and analysis. Field duplicate samples will be collected at a frequency of 1 per 20 samples per matrix per analyte. Since less than twenty groundwater samples will be collected per sampling event, one field duplicate will be collected for each event.

Field equipment rinsate blanks will not be collected because all disposable sampling equipment will be used, instead Bay West will submit one field blank for the project, per matrix per analyte.

One trip blank will be analyzed per cooler containing groundwater samples for VOC analysis.

Table 4-2 Quality Assurance/Quality Control Sample Collection

	QC Sample Type	Frequency of Sample/Analysis	Details
Field Samples	Duplicate Samples	1 duplicate per 20 samples per matrix, or 1 duplicate per sample matrix if fewer than 20 samples	Duplicate sample to be collected by the same methods at the same time as the original sample. Used to verify sample and analytical reproducibility.
	Field Blanks	1 field blank per bottle lot used, or one per site, whichever is more frequent	For all disposable equipment/single use sampling equipment, field blanks will be collected at a rate of 1 per bottle lot or per site, whichever is more frequent.
	Trip Blanks	1 trip blank per cooler containing samples for VOC analysis for water samples	Laboratory prepared organic-free blank to assess potential contamination during sample container shipment and storage, for VOCs in water only.
		1 trip blank per field sampling event, or per lot of bottles for soils, whichever is more frequent	If soil VOC samples are to be preserved with methanol and/or sodium bisulfate, one set of preserved vials will be included to assess potential contamination during sample container shipment and storage.
	Matrix Spike/ Matrix Spike Duplicate	1 MS/MSD per 20 or fewer samples per matrix	Laboratory spiked sample to evaluate matrix and measurement methodology.

4.3.3 Chain-of-Custody and Sample Shipping Procedures

Chain of custody (CoC) forms will be used to track all samples from the time of sampling to the arrival of samples at the laboratory. Every sample container being shipped, hand delivered to, or picked up by the laboratory will contain a CoC form. Field personnel will maintain their copy while the other copies are enclosed in a waterproof enclosure within the shipping container. The laboratory, upon receiving the samples, will sign the remaining copies and keep one copy for its records. Additional information on the CoC is included in the Bay West SOP *Sample Custody* included in **Appendix 1** of the programmatic QAPP.

To ensure that samples will arrive at the laboratory without breakage and the CoC intact, packaging and shipping of all samples will be completed in accordance with Bay West SOP *Packaging and Shipping of Environmental Samples* included in **Appendix 1** of the programmatic QAPP.

4.4 Investigation Derived Waste

Soil cuttings generated during drilling activities will be thinspread on-site. Groundwater sampling purge water is expected to have very low contaminant concentrations and will be discharged to the ground surface.

Spent personal protective equipment such as sampling gloves, excess glassware, paper towels, etc. will be placed in trash bags and disposed of as municipal solid waste in a trash receptacle at Bay West's office in St. Paul, Minnesota.

5.0 REPORTING

Following completion of field activities and receipt of the final laboratory data, Bay West will prepare a comprehensive report presenting the results of the LSI. Laboratory results for groundwater samples collected on the Site will be compared to Wis. Admin. Code § NR 140 Enforcement Standards (ES) and Preventive Action Limits (PAL).

The report will include sections on the Site background describing the site history and previous environmental assessment work, the scope of the field work, the results of field screening and laboratory analysis, quality assurance/quality control data (including preparation of a Data Assessment Report), and conclusions with recommendations for the path forward.

A draft report in electronic format will be submitted to the WDNR Program Manager/Project Manager for their review and comment prior to submitting a final report. We anticipate that bound copies and electronic copies of the final report will be submitted to the WDNR. Specifically, final copies of the report will be forwarded to:

1. Property Owner – Garth Frable / City of Prairie du Chien (electronically via download, 1 bound copy, and CD)

2. WDNR Project Coordinator – Tom Coogan (submitted electronically via the WDNR WAM SharePoint site)

3. WDNR Project Manager – Matt Vitale (submitted electronically via the WDNR RR Portal)

6.0 COST ESTIMATE

This cost proposal has been prepared based upon information currently available to Bay West and includes the tasks described above. Bay West will complete the scope of work on a time & materials basis for a fee of **$27,220.50** in accordance with the fee schedule contained in our response to the WDNR's June 2016 Request for Statements of Qualification. A summary of our costs by task is presented below. A detailed cost breakdown is also attached for your review.

Cost Estimate Summary

Task	Fee
Task 1 – LSI and GW Sampling (round 1)	$21,500.50
Task 2 – Groundwater Sampling (round 2)	$2,375.00
Task 3 – Final Report	$3,345.00
Project Total:	**$27,220.50**

7.0 SCHEDULE

The schedule below presents estimated timeframes to complete the project work. Actual calendar dates are dependent on the date that Bay West receives an executed contract and notice to proceed.

Activity	Typical Duration
Field Work Coordination, Scheduling, and Preparation	21 calendar days upon receipt of executed contract and NTP
LSI (well installation and first sampling event	5 days including prep, mob, field work, and demob
Second groundwater sampling event	2 days (approx. 90 days after the initial groundwater sampling event)
Final Report	15 calendar days upon receipt of final laboratory data

If you have any questions or concerns regarding this Sampling and Analysis Plan, please contact me at rickv@baywest.com or Erik Nimlos at enimlos@baywest.com.

Respectfully,

Rick Van Allen, PG (MN)
Senior Project Manager

Erik Nimlos, PG (MN)
Project Geologist

8.0 REFERENCES

Bay West LLC (Bay West), 2019. Phase I Environmental Site Assessment, Blackhawk Junction, 700 East Blackhawk Avenue, Prairie du Chien, Wisconsin 53821. November.

Bay West, 2020. Phase II Environmental Site Assessment Report, Blackhawk Junction, 700 East Blackhawk Avenue, Prairie du Chien, Wisconsin 53821. April.

Figures

Figure 1

Site Map with Proposed Monitoring Well Locations

Blackhawk Junction
LSI

700 East Blackhawk Avenue
Prairie du Chien, WI 53821

Map Projection: NAD 1983 UTM Zone 15N, Meters
Basemap: Wisconsin DNR Aerial Imagery, 2015

0 50 100 150 200 Feet
0 20 40 60 Meters

- Proposed Monitoring Well Location
- Completed Soil Boring/Soil Vapor/Groundwater Sample (Bay West 2020)
- Previous Soil Borings (Ayres 2009/2010)
- Assumed Groundwater Flow Direction
- Site Features
- 2014 Burn Site (Approximate)
- Site Boundary
- Parcel Boundaries

Bay West
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Drawn By: SC | Date Drawn/Revised:9/15/2020 | Project No.J191231

Y:\Clients\WISCONSIN_DEPT_OF_NATURAL_RESOURCES\Blackhawk_Junction\MapDocs\P200827\001_LSIP200827 FIG 1 Site Map with Proposed Monitoring Well Locations.mxd

Cost Estimate

Bay West LLC
Work Plan / Cost Proposal Spreadsheet

Site Name: **Blackhawk Junction**
Site Location: **Prairie du Chien, WI**
Bay West Proposal #: **J200827**

		TASK	Unit Rate	Frequency	Hours: Project Manager $110.00	Staff Professional II $80.00	CADD Specialist $60.00	Field Technician III $65.00	Field Technician II $55.00	Office Support $45.00	Other: Owned Equipment and Inventory ($)	Contractors: Sub-Contractors ($)	Total Value ($)	Time Total (hours)	Comments
Task 1 - Limited Site Investigation and GW Sampling (round 1)															
L		Project Management, Contracting, client liaison			14.00	8.00	2.00						$ 2,300.00	24.00	
L		Well Installation			8.00	30.00							$ 3,280.00	38.00	1 staff. 3 days for well install
T		Well Sampling and development (round 1)			2.00			24.00					$ 1,780.00	26.00	1 staff, 2 days, sampling and development
T		Meals	$55.00	4.5									$ 247.50		well install, est. actual expenses incurred with receipts
T		Lodging	$96.00	3									$ 288.00		well install
E	5681	Bladder, Disposable	$14.00	5							$ 70.00		$ 70.00		well sampling
E	2756	Pump, Bladder	$75.000	1							$ 75.00		$ 75.00		well sampling
E	4085	Generator, Small	$50.000	1							$ 50.00		$ 50.00		well sampling
E	5672	Tubing, Double Teflon	$3.000	175							$ 525.00		$ 525.00		well sampling, 35 feet x 5 wells
E	3300m	Service Vehicle, Truck Mileage	$0.575	500							$ 287.50		$ 287.50		well install
E	2300	Meter, Water Level	$30.00	4							$ 120.00		$ 120.00		well install and well sampling
E	6502	GPS, Sub-meter accuracy	$75.00	3							$ 225.00		$ 225.00		well install
E	2170	Meter, Water Quality	$125.00	1							$ 125.00		$ 125.00		well sampling
E	3300m	Service Vehicle, Truck Mileage	$0.58	450							$ 258.75		$ 258.75		well sampling
E	160	Groundwater Sampling Equipment	$30.00	1							$ 30.00		$ 30.00		well sampling
S		Lab GW VOCs	$75.00	7								$ 525.00	$ 525.00		5 wells, 1 TB, 1 dup
S		Driller (Badger State)	$10,500.00	1								$ 10,500.00	$ 10,500.00		Badger State - five 30-foot monitoring wells
S		City of PdC ROW permit	$250.00	1								$ 250.00	$ 250.00		estimate for ROW permit
S		5% markup on subcontractors	$563.75	1								$ 563.75	$ 563.75		
		Total Task 1 - Limited Site Investigation and GW Sampling (round 1)			**$ 2,640.00**	**$ 3,040.00**	**$ 120.00**	**$ 1,560.00**	**$ -**	**$ -**	**$ 1,766.25**	**$ 11,838.75**	**$ 21,500.50**	**88.00**	
Task 2 - Groundwater Sampling (Round 2)															
L		Project Coordination, field prep, mob, demob, field work			2.00			14.00					$ 1,130.00	16.00	1 staff from St. Paul with an overnight
T		Meals	$55.00	1.0									$ 55.00		Estimated, actual expenses incurred with receipts
T		Lodging	$96.00	0									$ -		
E	3300m	Service Vehicle, Truck Mileage - federal IRS rate	$0.575	450.0							$ 258.75		$ 258.75		
E	5681	Bladder, Disposable	$14.00	5.0							$ 70.00		$ 70.00		
E	2756	Pump, Bladder	$75.00	1.0							$ 75.00		$ 75.00		
E	4085	Generator, Small	$50.00	1.0							$ 50.00		$ 50.00		
E	2300	Meter, Water Level	$30.00	1.0							$ 30.00		$ 30.00		
E	2170	Meter, Water Quality	$125.00	1.0							$ 125.00		$ 125.00		
E	160	Groundwater Sampling Equipment	$30.00	1.0							$ 30.00		$ 30.00		sampling equipment, gloves, ziplocks, etc
S		Lab GW VOCs	$75.00	7								$ 525.00	$ 525.00		5 wells, 1 TB, 1 dup
S		5% markup on subcontractors	$26.25	1								$ 26.25	$ 26.25		
		Total Task 2 - Groundwater Sampling (Round 2)			**$ 220.00**	**$ -**	**$ -**	**$ 910.00**	**$ -**	**$ -**	**$ 638.75**	**$ 551.25**	**$ 2,375.00**	**16.00**	
Task 3 - Reporting															
L		Final Report Prep			8.00	24.00	4.00	4.00		1.00			$ 3,345.00	41.00	Staff pro time includes chemist time to complete data validation and prepare the Data Assessment Report
		Total Task 3 - Reporting			**$ 880.00**	**$ 1,920.00**	**$ 240.00**	**$ 260.00**	**$ -**	**$ 45.00**	**$ -**	**$ -**	**$ 3,345.00**	**41.00**	
		Total Cost Estimate			**$ 3,740.00**	**$ 4,960.00**	**$ 360.00**	**$ 2,730.00**	**$ -**	**$ 45.00**	**$ 2,405.00**	**$ 12,390.00**	**$ 27,220.50**	**145.00**	

Site Safety and Health Plan

for
Limited Site Investigation

at
Blackhawk Junction
700 East Blackhawk Ave
Prairie du Chien,
Wisconsin 53821

September 15, 2020

Prepared by:

Bay West LLC
5 Empire Drive
Saint Paul, MN 55103-1867

BWJ200827
DMS#2556029

Table 1 Responsible Personnel

Title	Name	Office Phone	Cell Phone
Project Manager	Rick Van Allen	651.291.3441	612.419.2580
Site Safety and Health Officer	TBD	TBD	TBD
Plan Preparer	Rick Van Allen	651.291.3441	612.419.2580

Table 2 General Information

Site Name	Blackhawk Junction
Site Address	700 East Blackhawk Ave Prairie du Chien, Wisconsin 53821
Site Type	Multi-tenant commercial retail
Site Status	Active
Site Identification Number	NA
Client Name	Wisconsin Department of Natural Resources
Client Address	101 South Webster Street Madison, Wisconsin 53707
Client Contact	Mr. Tom Coogan
Client Phone	608.267.7560
Contaminant(s) of Concern	chlorinated volatile organic compounds
Event	Limited Site Investigation and Monitoring Well Sampling
Preparation Date	9/15/2020
Project Number	**200827**
Document Number	2556029

Approvals

Date: 9/15/2020

Prepared by:
Rick Van Allen
Project Manager

Date: 12/12/2019

Approved by:
Matt Ader, CSP,
Health and Safety Specialist

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1.0 INTRODUCTION

The purpose of this project Site Safety and Health Plan (SSHP) is to communicate hazards (biological, chemical, physical and radiological) to which employees could potentially be exposed, and describe measures to reduce these hazards. This SSHP has been prepared based upon known or anticipated site conditions and hazards and according to the Occupational Safety and Health Administration (OSHA) standard 29 CFR 1910.120(b)(1)(ii)(C). This SSHP must be kept at the project location until completion of the project and must be made available to all workers, visitors, and Bay West LLC (Bay West) sub-contractors whose activities are covered under the scope of work described below. The Site Supervisor has the authority to modify the contents of this SSHP to adequately protect the safety and health of the project work crew. The Site Supervisor is encouraged to discuss such changes with the Corporate Safety and Health Specialist if he/she deems it necessary. All modifications will be documented at the end of this plan.

Employees performing activities under this SSHP are required to be properly trained to an appropriate level for the task(s) they will be completing. At a minimum, site workers will conform to the necessary training requirements under the OSHA standard 29 CFR 1910.120 (HAZWOPER). Employees that are or potentially exposed to hazardous substances exceeding occupational exposure limits for more than 30 calendar days per will participate in an exposure medical monitoring program per 29 CFR 1910.120(f).

This SSHP will be reviewed at the beginning of the project/task, daily thereafter and immediately following any modification to its content and by the introduction of new personnel to the site. Document safety meetings on the form included in **Appendix A.** This SSHP and all associated safety and health documents from this project (e.g., completed confined space entry permits, daily tailgate safety meeting forms, and air monitoring sheets) will be filed in the project file at the conclusion of this project. This SSHP has been prepared, in part, from information provided by completed project site visits and remedial investigation activities.

2.0 PROJECT DESCRIPTION

Previous groundwater sampling work completed at the Site has not delineated the extent and magnitude of groundwater contamination and a network of wells does not exist to document the plume stability and degradation. To complete the delineation, Bay West will complete the following scope of work:

- Advance five hollow-stem auger borings to depths of approximately 30 feet below. These borings will be completed as 2-inch diameter PVC monitoring wells with 15-foot screens set at approximately 10-25 feet below grade. These proposed well depths are based on the depth of groundwater observed during the previous sampling work conducted by Bay West where groundwater was observed at approximately 18 feet below grade. The well locations are intended to provide an upgradient clean well (MW-1), a source well (MW-3), two side-gradient delineation wells, (MW-2 and MW-4), and one down gradient clean well (MW-5).
- Survey the top of casing elevations of the newly installed monitoring wells to allow for groundwater elevation contouring.
- Conduct two rounds of groundwater sampling at the 5-well network. The first round of sampling will be completed approximately 2 weeks following installation of the wells by Bay West. The second round of sampling will be completed approximately 3 months after the initial round of sampling.
- Groundwater samples will be collected using a low-flow sampling method following stabilization of field parameters. The samples will be submitted to Pace Analytical Services for analysis of VOCs using EPA Method 8260.

3.0 EMPLOYEE RESPONSIBILITIES

3.1 Project Manager

The Project Manager (**Rick Van Allen**) is responsible for obtaining site specific hazard information to be incorporated into the SSHP, and ensuring that a SSHP is developed, distributed, and discussed with all on-site employees.

3.2 Site Supervisor

The Site Supervisor (**TBD**) acts as the Site Safety and Health Officer (SSHO) and is responsible for implementation of the SSHP, i.e., hazard evaluation, hazard reduction measures, and communication with the Safety and Health Department in cases where unexpected hazards arise.

3.3 Operators, Helpers, Subcontractors and Visitors

Operators, helpers, subcontractors and visitors are responsible for receiving a copy of the SSHP, reading the plan, understanding the plan, abiding by the provisions, procedures, and requirements outlined in the plan, and informing the Site Supervisor of any hazardous conditions or materials that the plan did not cover.

4.0 HAZARD IDENTIFICATION

- Never work with hazardous materials or in hazardous conditions alone--always have a buddy;
- If you experience any upper respiratory, eye, or skin irritation remove yourself from the exposure area and report your symptoms to your supervisor immediately;
- If you experience headache, dizziness, vertigo, nausea, or any other symptom of central nervous system depression remove yourself from the exposure area and report your symptoms to your supervisor immediately;
- If you detect an odor or other strong smell, remove yourself from the exposure area and report your symptoms to your supervisor immediately; and
- No smoking on any job site.

4.1 Physical Hazards

Employees should be aware of and anticipate the following physical hazards that may be encountered during site activities:

4.1.1 Injury

Due to falling objects; slipping, tripping, and falling; contact with pinch-points; contact (entanglement) with rotating portions of the equipment; or traffic accidents.

- The drill rig/Geoprobe® operator will inspect the drill rig daily for structural damage, loose bolts and nuts, proper tension in chain drives, loose or missing guards or protective covers, fluid leaks, damaged hoses, and/or damaged pressure gauges and pressure relief valves. Repair or maintain as indicated;
- The drill rig/Geoprobe® operator will check and test all safety devices such as emergency shut off switches daily and at the start of a drilling shift. NO DRILLING can commence until these devices are determined to be operational;
- The drill rig/Geoprobe® operator will check that all gauges, warning lights, and control levers are functioning properly and listen for any unusual sounds on each starting of an engine;

- All on site personnel will wear the required PPE as detailed in **Section 7.0**;
- Employees will practice good housekeeping around the work site. Supplies will be kept stacked or stored neatly and securely away from work areas where they may present a tripping hazard. Work areas will be kept clean, free of materials, and clear of rocks, snow, ice, oil, and grease;
- Damaged tools will be repaired or discarded. Do not use damaged tools. Keep tools clean;
- Ensure that the work area is stable and there are not obstructions (power lines, tree limbs, etc.) that may interfere with safe drilling operations;
- Keep clear of the auger during operations. Keep your body and body parts (hands and feet) from beneath hoisted augers. Use a long-handled shovel to remove auger cuttings. Stop auger rotation to remove cuttings;
- Clothing should be close fitting, but comfortable no loose ends, straps, draw strings, or belts or other unfastenable parts that might catch on some rotating or translating component of the drill rig/Geoprobe®; and
- Do not wear rings or other jewelry during a work shift.

4.1.2 Back Injury

Due to repetitive lifting using poor technique.

- Think about situations where you need to lift objects. Plan the lift;
- Choose the flattest, straightest, and clearest route, even if it is a little longer;
- Make sure you can see over the load;
- Check the load to determine stability and weight. If it is too heavy, ASK FOR HELP;
- Use material handling equipment whenever possible (drum carts, cylinder carts, dollies, hand truck, fork truck, etc.);
- Bend your knees, not your back. Keep your back straight. Lift with your leg muscles; and
- Do not twist your back while lifting or with a load. Move your feet.

4.1.3 Repetitive Motion Disorders

Such as tendonitis from overuse of wrists or elbows, for example, installing soil borings by hand.

- Rotate personnel through these jobs if possible;
- Rest frequently. Do not overexert yourself;
- Avoid awkward postures of body, hands, wrists or arms;
- Avoid tasks that require substantial force to accomplish; and
- Use appropriate tools for the job.

4.1.4 Electrocution

Stemming from contact with overhead or underground electrical utilities or contact with damaged electrical power tools and equipment.

- Look up and check for overhead power lines before raising the mast. Maintain the minimum required clearance between equipment and overhead power lines: 10 feet increased 4 in. for every 10kV over 50kV;
- Locate all public/private overhead and buried utilities prior to commencement of site work;
- Assume all overhead lines are live;

- Call the local electric utility company to move sagging lines;
- Move the rig only with the mast down;
- Suspend drilling operations and get away from the rig during (or at the threat of) electrical storms;
- If the drill rig makes contact with electrical wires, it may or may not be insulated from the ground by the tires of the carrier. If the human body simultaneously comes in contact with the drill rig and the ground it will conduct electricity to the ground resulting in either serious injury or death;
  - Under most circumstances, the operator and other personnel on the seat of the vehicle should remain seated and not leave the vehicle. Do not move or touch any part, especially a metal part, of the vehicle or rig;
  - If it is determined that the rig should be vacated, then all personnel should jump clear and as far as possible from the rig. DO NOT STEP OFF, JUMP OFF, HANG ON to the vehicle or any part of the rig when jumping clear;
  - If you are on the ground, stay away from the rig. CALL EMERGENCY MEDICAL SERVICES (EMS). Keep others away from the rig while emergency services are called;
  - If an individual is injured or in contact with the rig or power lines, attempt rescue with extreme caution. Use a long, dry, unpainted piece of wood or a dry, clean rope. Keep as far away from the rig and victim as possible until the victim is completely clear of the rig or power lines; and
  - When the victim is completely clear of the rig or power lines, check pulse and breathing provide CPR as necessary.
- Refer to Utility Clearance SOP and complete Utility Clearance Form

Look up and check for overhead power lines before raising the mast. Maintain the minimum required clearance between equipment and overhead power lines: 10 feet increased 4 in. for every 10kV over 50kV;

Table 3 Overhead Line Clearance Distances

Nominal Voltage (kV)	Clearance Distance (feet)
Up to 50	10
51 – 200	15
201 – 350	20
351 – 500	25
501 – 750	35
751 – 1,000	45
> 1,000	As determined by professional engineer (PE).

4.1.5 Heat Stress

Associated with work in warm weather, direct sunlight, high humidity, semi-impermeable chemical protective equipment, lack of hydration and/or lack of acclimatization to warm weather; may take the form of heat rash, fainting, heat exhaustion, or life-threatening heat stroke.

- Recognizing general heat stress conditions and individual sensitivity to these conditions;

- Providing an adequate supply of drinking water or electrolyte replenishing fluids (Gatorade®) for all crew members;
- Drinking water frequently and in quantities slightly more than required to slake thirst and maintain adequate hydration levels;
- Resting at reasonable intervals in shaded or cooled areas;
- Informing your supervisor or crew mates of any ill health you may be experiencing; and
- Performing heat stress monitoring when using chemical protective clothing.

4.1.6 Cold Stress

Associated with work in cold, wet, windy weather with insufficient layers of thermal clothing and/or unprotected skin surfaces.

- Keeping inner clothing dry from rain or wet precipitation;
- Wearing layers of thermal clothing that cover as much exposed skin as feasible;
- Recognizing cold stress conditions by referencing a wind chill index chart; and
- No work should be performed if temperature is -20°F or lower or wind chill index is greater than -21°F.

4.1.7 Noise

Exposure in excess of the OSHA Action Level of 85 decibels (dBA) is anticipated. Noise overexposure can be minimized by using hearing protection in situations where you must raise your voice to be heard by someone standing next to you, or in situations where the TWA noise exposure will likely be above the OSHA action level of 85 dBA. Do not allow yourself to be exposed to obviously loud noises without hearing protection.

4.1.8 Fire

Associated with flammable or combustible materials on site (fuels, decontamination solutions) or encountered as part of the investigation (methane, gasoline, etc.).

- Keep containers of flammable or combustible liquids away from sources of ignition and away from paths, roads, or other vehicle/personnel access areas;
- Ensure that all containers of flammable or combustible liquids are properly labeled and stored in appropriate safety containers; and
- Keep a fire extinguisher (ABC type) on hand in case of fire.

4.1.9 Weather

Weather conditions are an important consideration in planning and conducting site operations. If performing tasks during inclement weather, work deliberately and adjust the work procedures to address the changed conditions. During storms, rain may cause slippery surfaces. Lightning may also accompany storms, creating an electrocution hazard during outdoor operations. Terminate operations during an electrical storm and move to a safe area.

4.1.10 Traffic

Personnel may have to drive off and onto active roadways to access sites. In addition, investigation sites may be proximal to active roadways. Vehicles will display rooftop strobe lights and hazard lights when leaving/entering active roadways, and when parked near active roadways. Vehicles should be parked at least 15 feet off the shoulder.

4.2 Chemical Hazards

Chemicals that will be utilized during site activities are summarized in **Table** below. Site contaminants are summarized in **Table** below. The Hazard Communication Standard (29 CFR 1910.1200) does not cover nonhazardous chemicals, hazardous waste, consumer products, and trace amounts. Site workers are required to be knowledgeable on each hazardous chemical, including its potential hazardous effects, its physical and chemical characteristics, first aid procedures, and recommendations for appropriate protective measures.

Table 4 Chemical Summary and First Aid Procedures

Chemical	Symptoms/Effect of Exposure	First Aid	IDLH	PEL
Hydrochloric Acid	Causes severe skin burns and eye damage. Possible inflammation of the respiratory tract. Caustic burns/corrosion of the skin. Causes serious eye damage. Nausea. Vomiting. Irritation of the gastric/intestinal mucosa. Diarrhea. Affection/discoloration of the teeth.	**Inhalation:** Remove person to fresh air. If breathing has stopped, perform cardio-pulmonary resuscitation. Have oxygen available for administration by a trained person if breathing is difficult. **Ingestion:** Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Immediately obtain medical care. **Skin contact**: Flood area with water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing and clean shoes thoroughly before reuse. **Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes while holding lids gently, but firmly, apart. Lift upper and lower lids occasionally to ensure thorough flushing under them. Prompt action is necessary to minimize possibility of blindness.	50 ppm	C 5 ppm
Methanol	Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.	**Inhalation:** Remove to fresh air. If breathing has stopped, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. **Eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention. Remove contact lenses, if present and easy to do. Continue rinsing. **Skin contact:** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. **Ingestion:** Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.	6000 ppm	200 ppm
Alconox	Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation.	**Inhaled**: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. **Skin contact:** Wash off with soap and plenty of water. Consult a physician. **Eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. **Ingestion:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician	NE	NE

C = Ceiling Limit (Exposure not to exceed value during any part of the work day.) *IDLH = Immediately Dangerous to Life and Health*	*NE = Not Expressed* *PEL = Permissible exposure limit (enforceable by OSHA* *ppm = parts per million*

4.2.1 Physical Forms of Site Contaminants

Personnel may encounter chemical exposure via inhalation of airborne chemical materials, and skin and eye contact with solids, liquids, or gases during operations from a variety of sources. Personnel will avoid intentional exposure, by all routes, to vapors, gases, particulates, solids and liquids with or without the use of PPE (respiratory protection or chemical protective clothing). If feasible remain and work upwind from source materials (e.g. soil cuttings). In general, the source types include:

Gases such as methane that may be released when the drilling rig encounters an underground pocket, natural gas from a buried pipeline, or other gases.

Vapors associated with soil cuttings, sampling, or headspace analyses may include a variety of volatile solvents or fuels with a wide range of chemical/physical/toxicological characteristics; toxic as well as flammable vapors may be encountered; gasoline vapors associated with contaminated cuttings represent a frequent encounter possibility. In some circumstances, personnel may be exposed to vapors associated with nearby surface sources such as leaking containers, sludge ponds, or contaminated surface soils.

Particulates associated with soil cuttings, sampling, headspace analyses, adjacent on-site surface contamination, or work materials (such as cement dust).

Liquids (including solvents, fuels, corrosives, pesticides, and other hazardous materials) may be encountered in soil cuttings, sampling, headspace analyses or adjacent surface contamination, or containers.

Table 5 Contaminant Summary and First Aid Procedures

Bay West
Customer-Focused Environmental & Industrial Solutions

Site Safety and Health Plan
Blackhawk Junction
Prairie du Chien, Wisconsin

Table 5 Contaminant Summary and First Aid Procedures

Contaminant	Concentration Present		Symptoms/Effect of Exposure	First Aid	IDLH	STEL	PEL / TLV	Ionization Potential (IP)
	Soil	Water						
Perchloroethylene	Unk	Unk	irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately	150 ppm	-	OSHA PEL TWA 100 ppm C 200 ppm (for 5 minutes in any 3-hour period), with a maximum peak of 300 ppm	9.32 eV

IDLH = Immediately Dangerous to Life and Health	*ppm = parts per million*
STEL = Short-term exposure limit	*LEL= Lower Explosive Limit*
PEL = Permissible exposure limit (enforceable by OSHA)	*TLV = Threshold Limit Value*
NE = Not Expressed	*Unk = Value is Unknown*
NSP = Not Suspected to be Present	*See http://www.cdc.gov/niosh/npg/npgsyn-a.html for other substances.*

4.3 Biological Hazards

Biological hazards suspected to be present include: ultraviolet radiation from sunlight, poisonous plants (e.g., poison ivy), wild parsnip which has a blistering agent in its sap that acts differently than the urushiol found in poison ivy/oak/sumac, and has a tendency to grow along highways and abandoned equipment yards, insects, animals and pathogenic agents (e.g., through First Aid/CPR). Care should be used to avoid contact. Insect repellent and/or sun screen should be applied prior to exposure. A poison ivy care treatment kit should be utilized after such exposure to remove the toxin and provide skin relief.

5.0 AIR/EXPOSURE MONITORING

5.1 Environmental Media Monitoring

Soil may be monitored by headspace techniques to determine the relative amounts of volatile contamination. Soils and cuttings may also be monitored for the presence of corrosives using pH paper. The results will assist on-site hazard evaluation for selection of appropriate personal protective equipment (PPE).

5.2 Air Monitoring

Field screening of soil samples and ambient air monitoring will be performed with a photoionization detector (PID) (10.6 electron-volt [eV] lamp). Chemical exposure above the PEL/TLVs is not expected. The breathing zone will be monitored **initially, at the beginning of each work shift, and as conditions change** (e.g., olfactory detection of contaminants). Bay West workers should attempt to work in the up-wind area and keep soil and water samples away from the breathing zone to avoid exposure. The results will be entered in the project field notebook.

Table 6 PPE Action Levels

Concentration	Instrument	Sampling Duration	Action
< 50 ppm	PID	Not applicable	Continue to monitor as necessary.
> 50 ppm	PID	More than 1 minute	Monitor for benzene if it's a suspected contaminant or if its presence is unknown.

6.0 SITE CONTROL

Access onto and from the site must be controlled to prevent injury or exposure to unprotected persons, reduce associated liability, and minimize the spread of contamination from dirty to clean areas. To the extent possible, the area in which drilling is to be done will be designated using traffic cones. No unauthorized persons are to be allowed inside this EXCLUSION ZONE. Only personnel who have a need to enter, have permission to enter, and who have familiarized themselves with the site-specific hazards and requirements of the SSHP, and who are properly attired in PPE may enter the exclusion zone. A decontamination area located upwind and at the edge of the exclusion zone will be set up to remove contamination from reusable and disposable PPE, tools, equipment, and vehicles.

Due to the size of the worksites, verbal person-to-person communication methods are adequate for this project. Cellular telephones will be available for external communication as needed.

7.0 PERSONAL PROTECTIVE EQUIPMENT

PPE will be used as needed to eliminate or minimize exposure to physical and chemical hazards. All subcontractors are responsible for providing their own PPE. The minimum PPE requirement for all site workers performing any task is Level D:

Level D

- Safety-toe, leather work boots (with steel or fiberglass shank);
- Safety glasses or goggles;
- Cotton Coveralls (or appropriate work attire); and
- Inner surgical (sample) gloves (4-mil nitrile)
- High visibility Class II traffic vest.
- Hard hat (when overhead hazard is present);
- Hearing protection (as required by activity and exposure potential); and

Modified Level D - Same items listed for Level D, with the addition of the following:

- Tyvek™ disposable suit;
- Disposable rubber or Tyvek™ boot covers;
- Outer nitrile gloves;
- Gloves/boot covers will be duct-taped to the disposable suit.

Level C - Same items listed for Modified Level D, with the addition of the following:

- Full-face or half-face air purifying respirator with multi-purpose (OV/AG) cartridge.

The initial level of PPE for the site is Level D. Upgrade to Modified Level D when handling contaminated soil or equipment. Upgrade to Level C if air monitoring indicates.

8.0 DECONTAMINATION

All personnel working in the exclusion zone must decontaminate. For tasks that will require decontamination, the decontamination station will be set up near the work area, exclusion zone, or in another convenient location such that migration of contamination is minimized. Tools, equipment, and PPE suspected to be contaminated with hazardous chemicals can be adequately decontaminated with Alconox detergent and warm water. Do not reuse contaminated PPE. Disposition of the wash water will be the responsibility of the PM.

8.1 Decontamination Equipment

- Plastic sheeting;
- Plastic garbage bags;
- Container for disposable clothing & solid waste;
- Wash tub;
- Container for spent decontamination solutions;
- Long handled brush;
- Paper towels;
- Detergent;
- Gallon-size Ziploc® bags; and
- Source of water.

8.2 Emergency Decontamination

In the event of a medical emergency in the exclusion zone or a contaminated work area, immediately exit the area and provide emergency decontamination to the injured person(s) using the following procedure:

1. BLOT or wipe visible contamination from the person;
2. STRIP contaminated clothing from the person;
3. FLUSH impacted skin and/or eyes with copious quantities of water;
4. COVER the employee;
5. TRANSPORT the employee to the designated medical provider; and

Utilize emergency eye wash fluids provided at the project site when necessary.

9.0 CONTINGENCY PLAN

9.1 Site Support Facilities

PRIOR to commencement of work on a Site the SSHO will determine what, if any, client emergency facilities are available for use by Bay West personnel. If such facilities are available, inform each employee and show them where they are.

9.2 Emergency Telephone Numbers

Take a cellular phone to the site or establish the location of a nearby telephones for use in case of emergency PRIOR to beginning work. The Site address is located in **Table 2 General Information**, on **page i** of this SSHP for emergency vehicle routing.

Table 7 Emergency Contact Numbers

Hospital	Crossing Rivers Health 37868 US Hwy 18 Prairie du Chien, WI 54701 (608) 357-2222
Ambulance	911
Fire	911
Police	911
Client Emergency Contact	608.267.7560

A map to the hospital is attached as **Figures**. In case of an emergency notify **Erik Nimlos** (Project Manager) at the earliest convenience at **651.291.3493** or **651.399.6470** (cell)

9.3 Personnel Injury

The site supervisor, site safety officer, or employee will evaluate and initiate first aid as necessary. Decontaminate (if necessary) to the extent possible. Contact ambulance. No work will be conducted until the cause of the injury has been evaluated and if necessary, rectified.

9.4 Chemical Overexposure

9.4.1 Inhalation

Remove victim from exposure area to a clean air area. Monitor the victim's breathing. If breathing stops, initiate CPR. Call EMS.

9.4.2 Eye Contact

IMMEDIATELY flush the victim's eyes with water for at least 15 minutes to remove the material. Consult a physician.

9.4.3 Skin Contact

PROMPTLY remove any and all affected clothing. Decontaminate affected skin areas with soap and water. Consult a physician if residual skin damage is evident.

9.5 Fire

On discovery of a fire, activate a fire alarm and leave the area to a safe distance from the incident area. Attempt to extinguish the fire only if you can do so without risk of harming yourself.

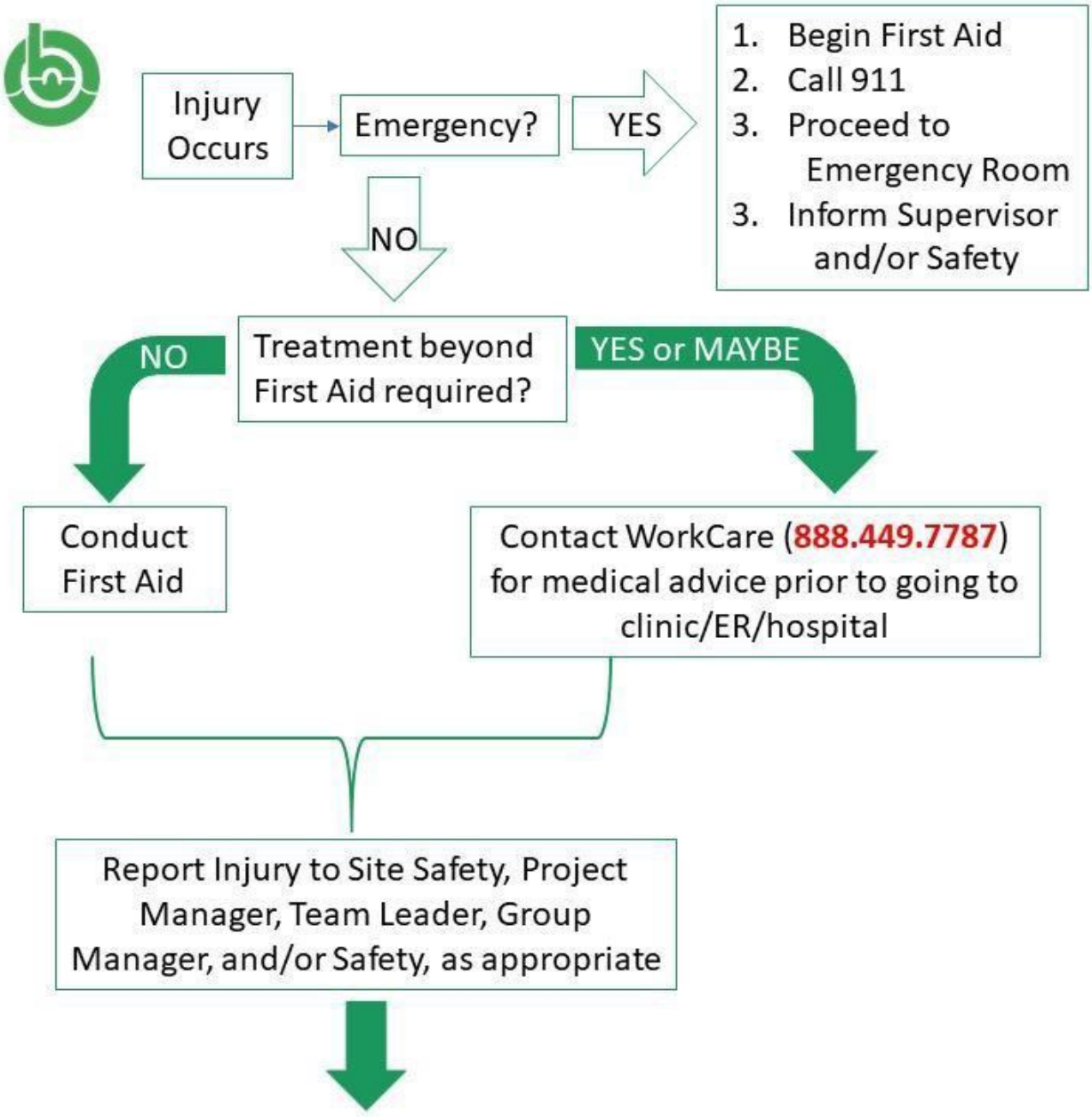
9.6 Spills

ALL SPILLS MUST BE CLEANED UP PROMPTLY. Use appropriate PPE (**Section 7.0**). Prevent the spilled material from flowing into a storm sewer or off site. Absorb the material with a suitable sorbent material and containerize (in a labeled container) for eventual disposal. Report the spill to the Bay West Project Manager (**Erik Nimlos**).

9.7 Emergency Equipment

The following emergency equipment will be maintained on the work site near where work is being performed.

- Eyewash bottles or station;
- First aid kit; and
- Fire extinguisher - 10 lb. ABC.



- Complete First Report of Injury (FROI) - found on Bay World
- Send to Safety@baywest.com
- If doctor was seen, communicate restrictions and adhere to restrictions
- Participate in injury investigation

10.0 TRAINING/INDOCTRINATION

All personnel and subcontractors performing work in association with this project are required to read and understand this SSHP prior to performing work. The site supervisor is responsible for ensuring that all workers are familiar with the contents of this plan and for ensuring that workers comply with the guidelines contained herein. Document receipt and understanding of this SSHP below:

Signature	Printed Name	Company	Date

11.0 RECORDKEEPING

File this SSHP and all safety and health related documents in the project job file at the conclusion of site activities.

AHA 1 Mob/Demob Site Preparation Site Work

Appendix 1: Activity Hazard Analysis	**1. Mob/Demob, Site Preparation Site Work**
Project Location	Phase II Environmental Site Assessment
Job Number	BWJ191231
Date Prepared	12/11/2019
Prepared by (Name/Title):	Erik Nimlos, Project Manager
Reviewed by (Name/Title):	Xiong Yang, ASP; Corp. Health & Safety
Notes: (Field Notes, Review Comments, etc.)	

Overall Risk Assessment Code (RAC) (Use Highest Code): **L**

Risk Assessment Code (RAC) Matrix

Severity	**Probability**				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (see above)

"**Probability**" is the likelihood to cause an incident, near miss, or accident, and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.

"**Severity**" is the outcome/degree if an incident, near miss, or accident did occur and identified as Catastrophic, Critical, Marginal, and Negligible.

Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "hazard" on AHA. Annotate the overall highest RAC at the top of AHA.

RAC Chart

E = Extremely High Risk
H = High Risk
M = Moderate Risk
L = Low Risk

Job Steps	Hazards	Controls	RAC
Mobilization / Site Preparation: 1. Site Safety Meeting 2. Collect and Load Equipment 3. Don PPE **Inspection & Sampling** 1. Review worksite 2. Evaluate current conditions 3. Collect samples 4. Perform Overhead sampling 5. Note other regulated waste in the site work area **Demobilization:** 1. Decontamination 2. Waste and PPE Disposal 3. Remove equipment.	Vehicle accidents/collisions.	1. Wear high visibility safety vests when working around heavy equipment/motor vehicles. 2. Vehicle/equipment operators should look in the direction of travel; look before backing up. 3. Prevent foot traffic from crossing routes of heavy equipment. 4. Speed limit is 25 mph unless otherwise noted. 5. Use a spotter for maneuvering heavy equipment. 6. Ensure the operator acknowledge your presence before walking near equipment in operation. 7. Minimize distractions	L
	Injury from improper use of hand or power tools.	1. Only trained personnel will use hand and power tools. 2. Power tools and equipment will be equipped with a shutoff switch. 3. All rotating parts will be properly guarded. 4. Guard against burns from hot equipment. 5. Wear work gloves when working with hand tools	L

4. Load unused material for removal off-site. 5. Demob.	Electrical shock from energized equipment.	1. Use GFCI plugs, 2. Utilize heavy duty extension cords, 3. All powered equipment must have 3-prong grounded and double insulated.	**L**
	Muscle strain from improper lifting techniques.	1. Follow proper lifting techniques; 2. No manual lifting of heavy loads over 50 lbs without assistance	**L**
	Excessive noise exposure due to heavy equipment or power tool use.	1.Wear hearing protection	**L**
	Hands/feet caught in pinch points.	1. Be aware of and keep hands and feet out of potential pinch points; 2. Wear heavy work gloves	**L**
	Chemical Exposure	1. Wear nitrile glove when working with samples 2. Wear air purifying respirator (APR) with OV/AG filters	**L**
	Slips, trips, or falls.	1. Practice good housekeeping procedures by keeping walking and working surfaces free from slip and trip hazards. 2. Walk around and not over object	**L**
	Accidental Energization of Equipment / Hazardous Energies	1. Properly isolate each piece of equipment with LOTO prior to start of project 2. Verification of LOTO by SSHO 3. All employees will place their individual lock and tag on the energy isolation device OR Group Lockout Box (if more than one isolation device)	**L**
	Unauthorized Personnel	1. Maintain positive site control; 2. Immediately cease operations if unauthorized entry is made.	**L**

Equipment to be Used	Training Requirements / Competent or Qualified Personnel name(s)	Inspection Requirements

• Motor Vehicles
• Communications Equipment
• First Aid Kit
• Fire Extinguisher
• Eye Wash Bottles
• Level D PPE
  ○ Safety-toe boots
  ○ Safety Glasses
  ○ Hearing Protection
  ○ Hard Hat
  ○ Sample Gloves
  ○ Hi Vis Class II Vest
  ○ Tyvek
  ○ Outer nitrile glove
• Level C PPE
  ○ Full or Half-face Respirator
  ○ OV/AG cartridge
• Hand tools
• Air Monitor
  ○ PID
	Training to be performed by the SSHO unless otherwise specified:
	• OSHA 1910.120 HAZWOPER Program
	• Hand Tool Safety
	• Defensive Driving
	• Equipment familiarity as required.
	• Knowledge of the Emergency Response and Notifications procedures.
	• First Aid and CPR training as required by the SSHP.
	• Safe work practices and precautions associated with tasks being performed
	• Specific task response training.
	• Personnel will meet requirements for the training and use of PPE.
	• OSHA qualifications and training as required
	• Fit test and respirator clearance
		Inspections to be performed by the SSHO unless otherwise specified:
		• Daily serviceability check of equipment.
		• Daily communications checks.
		• Daily checks of first aid kits and weekly inventory of kits.
		• Daily check for serviceability, fit, and comfort of PPE.
		• Daily inspection of ladders
		• Vehicle pre and post inspection

Figures

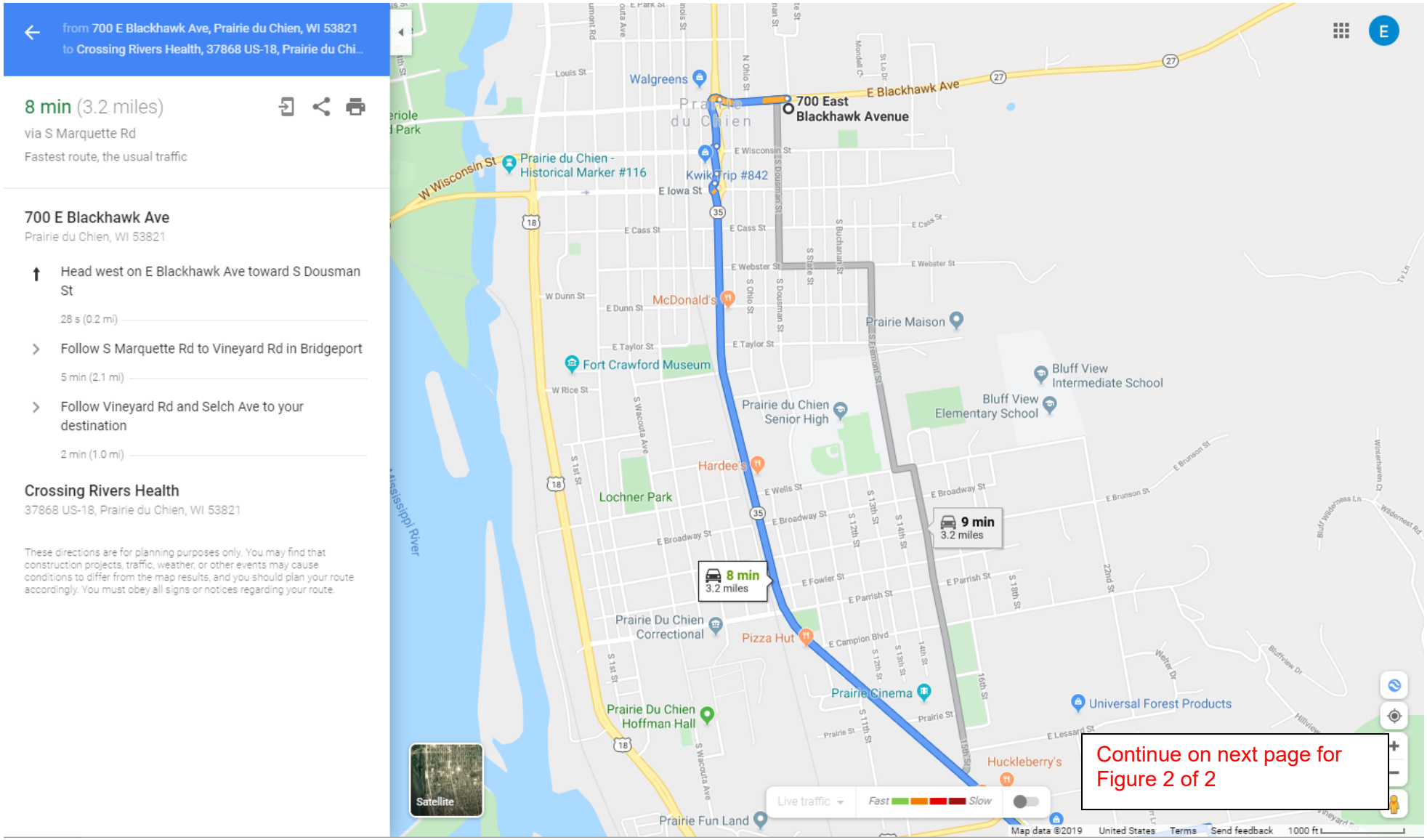


Figure 1 of 2 Map and Driving Directions to Hospital

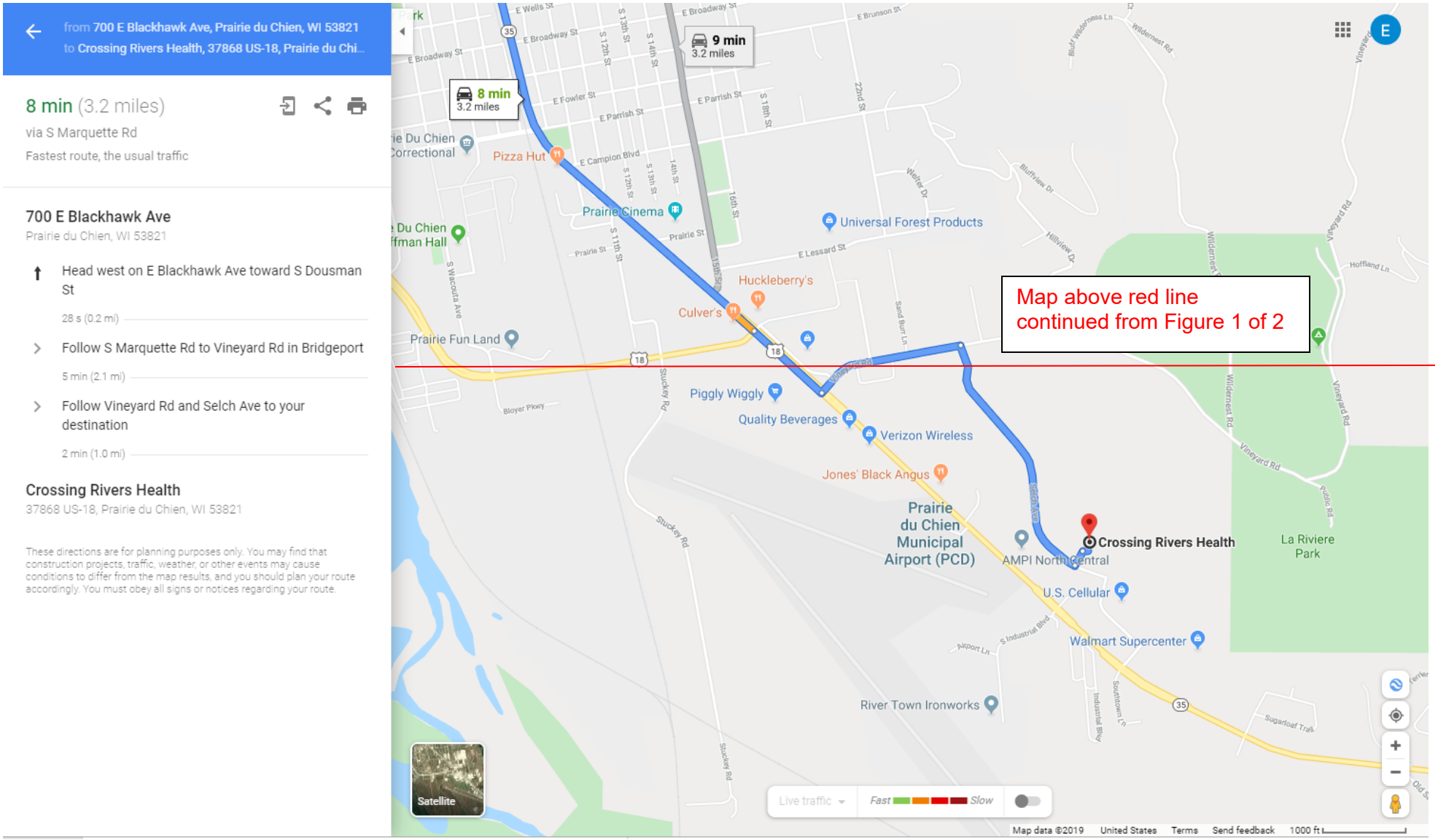


Figure 2 of 2 Map and Driving Directions to Hospital

Appendix A

Safety Meeting Report

Appendix B

Standard Operating Procedures

(See Project Sampling and Analysis Plan and Programmatic QAPP)

Appendix C

Safety Data Sheets

☐ SDS attached

☐ SDS are located within the client's facility at:

_____

☒ SDS can be access on MSDSonline.com and via Chem Mgmt mobile app