



Off-Site Soil Investigation Report

Madison-Kipp Corporation
Madison, Wisconsin

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Off-Site Soil Investigation Report

Madison-Kipp Corporation
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Executive Summary

RJN Environmental Services, LLC (RJN) was retained by Madison-Kipp Corporation to conduct environmental investigation activities at residential properties located adjacent to the facility located at 201 Waubesa Street in Madison, Wisconsin (Site).

Environmental investigation and remediation activities have been ongoing since 1994. Off-site soil samples were collected from three residential properties bordering the Site to the east from 2002 to 2004. Tetrachloroethene (PCE) was detected in the soil samples.

In February 2012, a soil vapor extraction system was installed along the east property line in the north parking lot of Madison-Kipp to address the potential off-site migration of PCE soil gas. On March 3, 2012, ARCADIS collected and submitted a composite soil sample from the trench cuttings for Protocol II laboratory analysis to determine soil disposal options for the excavated soil. Total detected polyvinyl chloride biphenyls (PCBs) were reported at 110 milligrams per kilogram. On March 26, 2012, Madison-Kipp notified the Wisconsin Department of Natural Resources (WDNR) of the detection of a release of PCBs to the environment.

On April 19, 2012, WDNR issued a responsible party letter to Madison-Kipp requiring an on-site soil investigation. Based on communications with the WDNR, the analysis of PCBs was included in the off-site, shallow soil investigation activities that were completed by RJN on April 27 and 30, 2012. A work plan for PCB investigation was submitted to the WDNR on May 21, 2012. In a letter dated May 30, 2012 the WDNR provided a *Conditional Approval* letter for the May 21, 2012 work plan with a requirement for additional off-site residential soil sampling. A summary of the PCB analytical data, consisting of data collected through June 26, 2012, was submitted to the WDNR on July 12, 2012. The PCB data was utilized in a conference call with the WDNR, Wisconsin Department of Justice, and the United States Environmental Protection Agency on July 12, 2012 to discuss the PCB site investigation activities and results. On July 20, 2012 a document titled *Summary of Polychlorinated Biphenyl Investigation Data* summary document was submitted to the WDNR. On August 3, 2012, the WDNR issued the letter, *Additional Soil Investigation Requirements Madison Kipp Site* requiring additional off-site sampling activities.

Between April and August 2012, 62 hand auger borings were advanced on 32 residential properties. A total of 121 soil samples were collected and submitted for laboratory analysis of volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), PCBs, Resource Conservation Recovery Act (RCRA) metals,

and total cyanide. Sample intervals included the collection of one soil sample from 0 to 1 foot below land surface (ft bls) and one soil sample from 3 to 4 ft bls. The geology consisted of topsoil overlaying clay with little to some silt, trace very fine to fine sand to 4 feet. Very fine to fine sand with trace gravel, cinders, concrete, and coal-like material were observed in select borings.

The soil analytical results were compared to regulatory soil criteria obtained from the WDNR for non-industrial and industrial direct contact residual contaminant levels (RCLs) for VOCs, PAHs, PCBs, RCRA metals, and total cyanide. Additional regulatory criteria for PCBs were obtained from Title 40 Code of Federal Regulations §761.61. The following is a brief summary of the results.

- The non-industrial direct contact RCL was exceeded for trichloroethene (TCE) at 106 South Marquette Street.
- PAHs results were detected in 68 soil samples above the non-industrial direct contact RCLs. However, there is insufficient evidence to establish that PAHs in the residential soil are associated with the Madison-Kipp property. The PAH concentrations are indicative of typical background levels in an urban setting as presented in the letter submitted to the WDNR on September 11, 2012, *Off-Site Residential Polycyclic Aromatic Hydrocarbon (PAH) Results Summary*.
- PCB results were reported below the WDNR non-industrial direct contact RCL and high occupancy cleanup level.
- Arsenic concentrations were detected above the industrial direct contact RCL; however, based on the widespread distribution of detections and typical naturally occurring values for arsenic, the arsenic concentrations represent naturally occurring background conditions.
- The non-industrial direct contact RCL was exceeded for lead at 106 and 142 South Marquette Street and 261 Waubesa Street.
- Total cyanide concentrations were reported below the WDNR direct contact RCL.

Additional investigation activities are recommended to confirm the TCE concentration at the above-referenced residential property.

1. Introduction

RJN Environmental Services, LLC (RJN) was retained by Madison-Kipp Corporation to conduct environmental investigation activities associated with the facility located at 201 Waubesa Street in Madison, Wisconsin (Site). Environmental investigation and remediation activities have been ongoing since 1994. These historical activities focused on the use and potential releases of tetrachloroethene (PCE). The historical investigation and subsequent remediation activities were conducted in phases, and addressed known or likely source areas.

In February 2012, a soil vapor extraction system was installed along the east property line in the north parking lot of Madison-Kipp to address the potential off-site migration of PCE soil gas. On March 3, 2012, ARCADIS collected and submitted a composite soil sample from the trench cuttings for Protocol II laboratory analysis to determine soil disposal options for the excavated soil. Total detected polyvinyl chloride biphenyls (PCBs) were reported at 110 milligrams per kilogram (mg/kg). On March 26, 2012, Madison-Kipp notified the Wisconsin Department of Natural Resources (WDNR) of the detection of a release of PCBs to the environment.

On April 19, 2012, WDNR issued a responsible party letter to Madison-Kipp requiring an on-site soil investigation. Based on communications with the WDNR, the analysis of PCBs was included in the off-site, shallow soil investigation activities that were completed by RJN on April 27 and 30, 2012. A work plan for PCB investigation was submitted to the WDNR on May 21, 2012. In a letter dated May 30, 2012 the WDNR provided a *Conditional Approval* letter for the May 21, 2012 work plan with a requirement for additional off-site residential soil sampling. A summary of the PCB analytical data, consisting of data collected through June 26, 2012, was submitted to the WDNR on July 12, 2012. The PCB data was utilized in a conference call with the WDNR, Wisconsin Department of Justice, and the United States Environmental Protection (U.S. EPA) Agency on July 12, 2012 to discuss the PCB site investigation activities and results. On July 20, 2012 a document titled *Summary of Polychlorinated Biphenyl Investigation Data* summary document was submitted to the WDNR. On August 3, 2012, the WDNR issued the letter, *Additional Soil Investigation Requirements Madison Kipp Site* requiring additional off-site sampling activities.

This report documents the Site description and history, summary of the off-site subsurface investigation activities and analytical results, conclusions, and recommendations. The information provided herein is based on the requirements of



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NR 716 Wisconsin Administrative Code (Wis. Adm. Code). An NR 712.09 submittal certification is included in Appendix A.

2. Project Background

The following sections present a summary of the Site location, contacts, description, and summary of previous offsite investigations.

2.1 Site Location and Contacts

The Site is located at 201 Waubesa Street in Madison, Wisconsin. The Site is located in the southwest quarter of Section 5, Township 7 North, Range 10 East in Dane County. The location of the Site is presented as Figure 2-1.

The following contact information is provided for the facility and environmental consultant:

Facility Representative: Mark W. Meunier, SPHR
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2.2 Site Description

The Site is approximately 7.5 acres in size. A 130,000-square foot building occupies much of the Site. Asphalt parking lots are located in the northeastern, southwestern and southeastern portions of the Site. The building has a 25,000-square foot second floor and a 25,000-square foot basement. Figure 2-2 depicts the layout of the Site. The Site is zoned M-1 (industrial/manufacturing). The Site is currently used as a metals casting facility.

The Site is located in the eastern portion of Madison, in a mixed use area of commercial, industrial and residential land use. The Site is bounded by a bicycle trail (Capital City Trail) constructed on a former railroad line to the north, Atwood Avenue to the south, and Waubesa Street to the west. Residences are located adjacent to the east and west sides of the Site, and further west (across Waubesa Street) and east (across Marquette Street). Commercial properties are located to the south (across Atwood Street) and further east. The Goodman Community Center is located to the north (across the Capital City Trail) and was the site of former industrial activities.

The Site is also located at the northeast end of the Madison isthmus, approximately 1,500 feet north of Lake Monona and approximately 6,800 feet east of Lake Mendota. The topography of the Site is relatively flat, with an elevation ranging from approximately 870 to 880 feet above mean sea level. The Site and surrounding area is serviced by municipal water supply and sewerage systems.

2.3 Site History

In the late 1800s, the United States Navy constructed a foundry at the Site for the purpose of casting cannon barrels. Although no barrels were ultimately cast at the Site, the facility has been used for casting metals since that time. Originally two separate buildings (one on Atwood Avenue and one to the north on Waubesa Street) were

located on the Site. Various construction activities over the years joined the buildings, resulting in the current facility configuration (Figure 2-2).

Multiple industrial products have been used during the history of the facility, including cutting oils, lubrication oils, degreasing chemicals and miscellaneous other products. These products contained various petroleum compounds, chlorinated volatile organic compounds (VOCs), and PCB.

A site investigation was conducted in 1994 for a leaking underground storage tank at Madison Brass Works, located on Waubesa Street west of the Site. During the course of that investigation, chlorinated VOCs were discovered in groundwater. Because Madison Brass Works had no history of using chlorinated compounds, the WDNR required that Madison-Kipp Corporation conduct a site investigation. A responsible party letter was subsequently issued to the Madison-Kipp Corporation and multiple phases of investigation and remediation were initiated.

2.4 Previous Off-Site Investigations and Remediation Activities

Site investigation and remediation activities were initiated at the Site in 1994, and are ongoing. For a complete summary of previous investigation and remediation activities, refer to the Site Investigation Work Plan prepared by ARCADIS dated May 31, 2012.

Soil samples were collected from residential properties bordering the Site to the east from 2002 to 2004. Twenty-one soil borings were advanced at the following property addresses using a hand auger: 150, 154 and 162 South Marquette Street. PCE concentrations in the soil samples from these properties ranged from non-detect to 2.68 mg/kg. A pilot remediation program was conducted at the soil boring location with the highest off-site PCE concentration (HA-25) in December 2004.

3. 2012 Off-Site Residential Soil Investigation Scope of Work

The 2012 off-site residential soil investigation activities were conducted in response to WDNR correspondence dated April 19, May 30, and August 3, 2012. The following sections present a description of the work completed during the investigation. The contents of this section were prepared in accordance with NR 716.09, Wis. Adm. Code.

The following site investigation activities were completed:

- Prepared a site-specific health and safety plan (HSP).
- Conducted utility clearing activities.
- Advanced 62 soil borings using a hand auger at 32 residential properties.
- Collected and submitted a total of 121 soil samples for laboratory analysis of VOCs, PCBs, polycyclic aromatic hydrocarbons (PAHs), Resource Conservation Recovery Act (RCRA) metals, and total cyanide.

4. Soil Investigation

4.1 Health and Safety

Prior to beginning the investigation, the Site HSP was updated to address the planned field activities. Utility marking arrangements were made through Digger's Hotline (the State of Wisconsin Public Utility clearance service) and discussions with property owners.

4.2 Hand Auger Boring Advancement

The field sampling plan consisted of the advancement of two hand auger soil borings per residential property for the collection of soil samples for laboratory analysis of VOCs, PAHs, PCBs, RCRA metals, and total cyanide to evaluate the direct contact pathway. Between April 27 and August 22, 2012, borings were advanced on 32 residential properties, including 24 properties located on South Marquette Street and eight properties located on Waubesa Street. ARCADIS, on behalf of RJN, completed the hand auger borings and soil sampling at 138, 206, and 226 South Marquette Street and 233, 241, 245, and 261 Waubesa Street. Samples have not been collected at two residential properties, 237 and 269 Waubesa Street, as access has not been granted to these properties. A summary of the addresses sampled is presented in Table 4-1. Below is a summary of the boring locations and field sampling plan.

For the properties located along South Marquette Street, the sampling locations included the advancement of hand auger borings located approximately 10 feet east of the west property line, and 10 feet south of the north property line and 10 feet north of the south property line. The same approach was followed for the properties located along Waubesa Street properties, except that the boring locations were advanced 10 feet west of the east property line, and 10 feet south of the north property line and 10 feet north of the south property line. Select boring locations deviated slightly from the plan based on obstructions including garages, sheds, trees, and gardens.

Sample intervals were predetermined by the WDNR and RJN and included the collection of one soil sample from 0 to 1 foot below land surface (ft bls) and one soil sample from 3 to 4 ft bls. Select sample intervals were adjusted due to the presence of obstructions such as rocks and tree roots (206 and 210 South Marquette Street and 261 Waubesa Street), or removed from the sampling plan if a building or pavement were present (130 and 154 South Marquette Street).



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The soil samples were collected using a stainless steel hand auger. The hand auger bucket was decontaminated prior to use and between sampling intervals using an Alconox soapy water solution and triple rinsed with distilled water. Used soapy water and rinse water were collected in 5 gallon buckets and transported to Madison-Kipp for treatment.

Soil was transferred directly from the hand auger to Ziploc® plastic bags from each sample interval, homogenized, and placed in clean, laboratory-supplied containers and placed in a cooler on ice. The soil samples were shipped under standard chain-of-custody procedures to TestAmerica in University Park, Illinois for laboratory analysis of VOCs using SW-846 Method 8260B, PAHs using Method SW-846 Method 8270C, PCBs using Method SW-846 Methods 8082, RCRA metals using Method SW-846 Method 6010B/7471A, and total cyanide using Method SW-846 Method 9014. The excess soil cuttings were used to abandon the boreholes.



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5. Surface Soil Geologic and Hydrogeologic Conditions

The geology consisted of 3 to 9 inches of topsoil overlaying a yellowish brown (10YR 5/4) to dark yellowish brown (10YR 5/4) clay with little to some silt, trace very fine to fine sand. The clay was generally stiff with low plasticity to a depth of 4 feet. Very fine to fine sand with trace gravel was observed in select borings. Cinders were observed from 6 inches to 1 ft bls at 114 South Marquette Street and concrete chips and coal/cinder-like material were observed from 6 inches to 1 ft bls at 226 South Marquette Street. Groundwater was not encountered during this investigation.

6. Evaluation of Analytical Results

The following sections present an evaluation of the soil regulatory criteria and analytical results.

6.1 Soil Regulatory Criteria

The WDNR Remediation and Redevelopment Program has prepared a spreadsheet with non-industrial and industrial direct contact residual contaminant levels (RCLs) for chemicals, calculated using the U.S. EPA Regional Screening Table web calculator. The RCLs for VOCs, PAHs, PCBs, RCRA metals, and total cyanide are summarized in Table 4-1.

In addition to the WDNR RCLs, Title 40 Code of Federal Regulations (CFR) §761.61 provides cleanup and disposal options for PCB remediation waste. Soil PCB analytical results were compared to the bulk remediation waste cleanup level for high occupancy cleanup level of less than or equal to 1 mg/kg and a total PCB concentration greater than or equal to 50 mg/kg to determine soil disposal options. These criteria are summarized in Table 4-1.

6.2 Soil Analytical Results

A total of 62 hand auger borings were advanced at 32 residential properties. A total of 121 soil samples were collected and submitted for laboratory analysis of VOCs, PAHs, PCBs, RCRA metals, and total cyanide. A summary of the soil analytical results are presented in Table 4-1. The soil laboratory analytical reports are included in Appendix B.

6.2.1 VOCs

Petroleum and chlorinated VOCs were detected in the soil samples analyzed. Concentrations of petroleum VOCs were reported for 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, bromomethane, ethylbenzene, naphthalene, n-butylbenzene, n-propylbenzene, sec-butylbenzene, toluene, and total xylenes. Concentrations of chlorinated VOCs were reported for 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, chloroform, cis-1,2-dichloroethene, hexachlorobutadiene, methylene chloride, PCE, and trichloroethene (TCE). TCE was the only VOC detected above the non-industrial direct contact RCL of 0.644 mg/kg, at 106 South Marquette Street from 3 to 4 ft bls

(0.71 mg/kg). A summary of the soil VOC analytical results are presented on Table 4-1 and depicted on Figures 6-1 (0 to 2 ft bls results) and 6-2 (2 to 4 ft bls results).

Due to the anomalous result for TCE at the above-referenced residential property, advancement and sampling of an additional soil boring is recommended to confirm the data result. The collection of two soil samples for analysis of VOCs is recommended from 0 to 1 and 3 to 4 ft bls as confirmation sampling.

6.2.2 PAHs

Of the 121 soil samples collected, PAHs were detected in 68 soil samples above the non-industrial direct contact RCLs for one or more of the following analytes: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Additionally, 13 soil samples contained concentrations reported above the industrial direct contact RCL for benzo(a)pyrene. A summary of the soil PAH analytical results are presented on Table 4-1 and depicted on Figures 6-1 (0 to 2 ft bls results) and 6-2 (2 to 4 ft bls results).

ARCADIS submitted an *Off-Site Residential Polycyclic Aromatic Hydrocarbon (PAH) Results Summary* (Summary) with information supporting the conclusion that there is insufficient evidence to establish that PAHs in the residential soil are associated with the Madison-Kipp property, and rather the results are indicative of typical background levels in an urban setting (ARCADIS, September 2012). Below is a brief list of the information provided in the Summary:

- PAHs are associated with a wide variety of petroleum and combustion byproducts, like asphalt, cigarette smoke, backyard grilling, vehicle exhaust, coal, coal tar, and agricultural and residential wood burning. Given these widespread sources, it is not unexpected or unusual to detect PAHs in residential yards in an urban area.
- If an on-site source and transport mechanism was present, it would be expected that other site-related chemicals like PCE or PCBs would also be detected on residential properties coincident with the detection of PAHs. However, while the data confirmed widespread low levels of PAHs (Figures 6-1 and 6-2) in residential soil, there was no similar finding for PCBs or any other potential site-related compound. The absence of other site-related constituents suggests the PAHs are associated with background sources unrelated to the Site.

- Data from the Goodman Community Center (BRRT No. 02-13-552584) were reported above non-industrial direct contact RCLs (BT², 2008). The PAH detections at the Goodman Community Center demonstrate that these constituents are a common artifact in industrial settings. The fact that the detections near the Madison-Kipp property are less than what was detected at the Goodman Community Center (a site that has attained regulatory closure) is further support for the conclusion that the off-site PAH detections merely represent background levels of PAHs in an urban setting.
- The estimated baseline daily intake of carcinogenic PAHs in a typical diet is 1 to 5 micrograms for an adult male. Based on the U.S. EPA incidental soil ingestion rate of 50 milligrams per day for an adult, the hypothetical intake of total carcinogenic PAHs from the maximum detected off-site PAH concentration (4.82 mg/kg) is 0.24 micrograms per day. This calculated intake from the maximum soil sample is up to 20 times lower than the intake from a typical diet.

Based on the above data, the PAHs detected in the soil are consistent with background levels in an urban setting, and do not pose a risk. Therefore, no additional investigation or remedial action is proposed to address the PAHs in soil.

6.2.3 PCBs

PCBs were detected in select residential shallow soil samples. The PCB detections are all below the WDNR direct contact RCL of 0.222 mg/kg, and below the U.S. EPA high occupancy cleanup level of 1 mg/kg. No further action is recommended for off-site residential properties located on South Marquette Street. However, subsequent investigation will be completed in accordance with the *Polychlorinated Biphenyl (PCB) Investigation Summary and Work Plan for Recommended Activities*, dated September 26, 2012. A summary of the soil PCB analytical results are presented on Table 4-1 and depicted on Figures 6-1 and 6-2.

6.2.4 RCRA Metals

A summary of the soil RCRA metal analytical results are presented on Table 4-1 and depicted on Figures 6-3 and 6-4. RCRA metals include arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Arsenic and lead were the only metals reported above the non-industrial or industrial direct contact RCLs.

Arsenic was detected above the industrial direct contact RCL of 1.59 mg/kg in each of the 121 soil samples analyzed. Arsenic concentrations ranged from 2.2 mg/kg to 13 mg/kg, with an average concentration of 7.53 mg/kg. Based on the widespread distribution of arsenic in the soil within such a narrow range of concentrations, the presence of arsenic appears to represent naturally occurring background conditions.

Lead was detected above the non-industrial direct contact RCL of 400 mg/kg at 142 South Marquette Street from 0 to 1 ft bls (470 mg/kg) and at 261 Waubesa Street from 0 to 1 ft bls at (660 mg/kg). The soil sample results from 3 to 4 ft bls at 142 South Marquette Street (44 mg/kg) and from 3 to 3.8 ft bls at 261 Waubesa Street (90 mg/kg) were reported below the non-industrial direct contact RCL. Lead was detected above the industrial direct contact RCL of 800 mg/kg at 106 South Marquette Street from 0 to 1 ft bls (900 mg/kg). The soil sample collected from this residence from 3 to 4 ft bls was detected below the non-industrial direct contact RCL (18 mg/kg).

The sample locations containing lead exceedances are delineated by both the deeper sample interval at each location (the 3 to 4 ft bls sample) and by the soil borings advanced on the adjacent residential properties and on the Madison-Kipp property that do not contain lead in exceedance of the non-industrial direct contact RCL. The soil sample collected from 106 South Marquette Street containing the lead exceedance (Soil Sample 106-1) is delineated by off-site soil samples 102-2 and 106-2, and the on-site soil samples collected from Soil Boring B-3. The soil sample at 142 South Marquette Street containing the lead exceedance (Soil Sample 142-2) is delineated by off-site Soil Samples 142-1 and 146-1, and the on-site soil samples collected from Soil Borings B-15 and B-16. The soil sample at 261 Waubesa Street containing the lead exceedance (Soil Sample 261-2) is delineated by off-site Soil Samples 257-1 and 261-1, and the on-site soil samples collected from Soil Boring W-4. No further action is recommended by Madison-Kipp in the area of these three lead exceedances as the nearest soil samples on adjacent residential properties and the Madison Kipp property do not contain lead exceedances. Based on this information the source of the lead identified on these properties is not from Madison-Kipp.

6.2.5 Total Cyanide

Total cyanide was detected in 45 of the 121 soil samples analyzed. Detected concentrations ranged from 0.12 mg/kg to 1.6 mg/kg. All total cyanide analytical results were reported below the non-industrial direct contact RCL of 46.9 mg/kg. Therefore, no additional investigation or remedial action is proposed to address the



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total cyanide in soil. A summary of the soil total cyanide analytical results are presented on Table 4-1 and depicted on Figures 6-3 and 6-4.

7. Summary of Findings

The following is a summary of the off-site soil investigation results.

- The geology consisted of topsoil overlaying clay with little to some silt, trace very fine to fine sand to 4 feet. Very fine to fine sand with trace gravel, cinders, concrete, and coal-like material were observed in select borings.
- Regulatory soil criteria were obtained from the WDNR for non-industrial and industrial direct contact RCLs, calculated using the U.S. EPA Regional Screening Table web calculator. Regulatory soil criteria for PCBs were also obtained from Title 40 CFR §761.61.
- A total of 62 hand auger borings were advanced and sampled at 32 residential properties between April and August 2012. A total of 121 soil samples were collected and submitted for laboratory analysis of VOCs, PAHs, PCBs, RCRA metals, and total cyanide.
- TCE was the only VOC detected above the non-industrial direct contact RCL. The detection occurred in one soil sample at one residence from 3 to 4 ft bls (106 South Marquette Street).
- PAHs were detected in 68 soil samples above the non-industrial direct contact RCLs. Benzo(a)pyrene was detected above the industrial direct contact RCL in 12 soil samples. There is insufficient evidence to establish that PAHs in the residential soil are associated with the Madison-Kipp property and are indicative of typical background levels in an urban setting. No additional investigation or remedial action is proposed to address the PAHs in soil.
- All soil PCB analytical results from the residential properties were detected below the WDNR direct contact RCL of 0.222 mg/kg and below the U.S. EPA high occupancy cleanup level of 1 mg/kg. No further action is recommended for off-site residential properties located on South Marquette Street.
- Arsenic concentrations were detected in every soil sample at concentrations above the industrial direct contact RCL of 1.59 mg/kg, with concentrations ranging from 2.2 mg/kg to 13 mg/kg. Based on the widespread distribution of arsenic in the soil and the narrow range of detected concentrations, the presence of arsenic appears

to represent naturally occurring background conditions. No additional investigation or remedial action is proposed to address the arsenic in soil.

- Lead was detected above the non-industrial direct contact RCL of 400 mg/kg at two residences, from 0 to 1 foot bls (142 South Marquette Street and 261 Waubesa Street). Lead was also detected above the industrial direct contact RCL of 800 mg/kg at one residential property (106 South Marquette Street). Based on the delineation of the lead exceedances with both off-site and on-site soil borings, no additional investigation or remedial action is proposed to address the lead in soil.
- All total cyanide analytical results were reported below the non-industrial direct contact RCL of 46.9 mg/kg. Therefore, no additional investigation or remedial action is proposed to address the total cyanide in soil.

8. Recommendations

The following is a summary of the recommendations based on the results of the off-site soil investigation conducted:

- Due to the anomalous result for TCE at the above-referenced residential property (106 South Marquette Street), advancement and sampling of an additional soil boring is recommended to confirm the data result. Two soil samples will be collected for VOCs from 0 to 1 and 3 to 4 ft bls. Further recommendations will await the results of this confirmation sampling.
- Soil PAH and arsenic detections at the residential properties are indicative of background conditions. Soil PCB and total cyanide concentrations were reported below non-industrial direct contact levels. No additional investigation or remedial actions are proposed to address these constituents with the exception of the activities presented in the *Polychlorinated Biphenyl (PCB) Investigation Summary and Work Plan for Recommended Activities*, dated September 26, 2012.



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9. References

ARCADIS. Site Investigation Work Plan. May 2012.

ARCADIS. Polychlorinated Biphenyl (PCB) Investigation Summary and Work Plan for Recommended Activities. September 2012.

ARCADIS. Off-Site Residential Polycyclic Aromatic Hydrocarbon (PAH) Results Summary. September 2012.

BT². GIS Registry Goodman Community Center. October 2008.

WDNR. Responsibilities for PCB Contamination: Madison Kipp Property, 201 Waubesa Street, Madison, WI. April 2012.

WDNR. Additional Soil Investigation Requirements Madison Kipp Site. August 2012.



Appendix A

Submittal Certification



Appendix B

Soil Laboratory Analytical Reports