SUPERFUND SCREENING SITE INSPECTION

STERLING DRY CLEANERS
City of Appleton, Wisconsin
CERCLIS ID WIN #000510415

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Abbreviations/Acronyms:

AFD	= Appleton Fire Department
bgs	= below ground surface
BRRTS	= Bureau for Remediation and Redevelopment Tracking System
CERCLA	= Comprehensive Environmental Response Compensation Liability Act of 1980
Cis-DCE	= cis-1,2-Dichloroethene
CVOC	= Chlorinated Volatile Organic Compounds
DERP	= Dry Cleaner Environmental Response Program
ER	= Environmental Restoration LLC
ES	= Enforcement Standard (ch. NR 140, WAC)
HRC-X®	= Hydrogen Releasing Compound- Extended ®
MCL	= Maximum Contaminant Level
OMNNI	= OMNNI Associates, Inc.
PA	= Preliminary Assessment
PCE	= Tetrachloroethene (aka Perchloroethene)
PRP	= Potential Responsible Party
SARA	= Superfund Amendments and Reauthorization Act of 1986
SDC	= Sterling Dry Cleaners
SERAS	= Scientific Engineering Response and Analytical Services
SSDS	= Sub-Slab Depressurization System
SSI	= Site Screening Inspection
START	= Superfund Technical Assessment and Response Team
TCE	= Trichloroethene
$\mu g/m^3$	= micrograms per cubic meter
$\mu g/kg$	= micrograms per kilogram
$\mu g/L$	= micrograms per liter
US EPA	= U.S. Environmental Protection Agency
VC	= Vinyl Chloride
VMS	= Vapor Mitigation System
VOC	= Volatile Organic Compounds
WAC	= Wisconsin Administrative Code
WDHS	= Wisconsin Department of Health Services
WDNR	= Wisconsin Department of Natural Resources

1.0 INTRODUCTION

Under authority of the Comprehensive Environmental Response Compensation Liability Act of 1980 (CERCLA), and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the Wisconsin Department of Natural Resources (WDNR) was tasked by the United States Environmental Protection Agency (U.S. EPA) to conduct a Preliminary Assessment (PA) at Sterling Dry Cleaners (SDC) as part of the fiscal year 2012 - 2013 Cooperative Agreement.

The purpose of this investigation was to collect information concerning current conditions at SDC (CERCLIS ID WIN000510415) located at 304 W. Wisconsin Street, Appleton, Outagamie County, Wisconsin sufficient to assess the threat posed to human health and the environment and to determine the need for additional CERCLA/SARA or other appropriate action. The scope of the screening site inspection includes review of available file information, drilling additional soil borings, installing additional monitoring wells and a piezometer, sampling soil and groundwater, and evaluating migration pathways.

U.S. EPA performed a Removal Assessment of air, soil and groundwater in March 2010. An U.S. EPA Removal Action was conducted in 2010, and was documented in a report dated December 6, 2010 (Reference 1). In May 2011, U.S. EPA performed a Post-Removal Action Assessment to evaluate the effects of the remedial actions on soil, groundwater, and air (Reference 2). Post-excavation work thus far indicates the need for additional soil and groundwater sampling. The WDNR completed a Preliminary Assessment dated September 6, 2012 (Reference 3).

2.0 SITE DESCRIPTION and REGULATORY HISTORY

2.1 Physical Features

The SDC property consists of a 0.23 acre parcel of land located in the SE ¼ of the SW ¼ of section 23, T21N, R17E, City of Appleton, Outagamie County, Wisconsin. The Outagamie County Parcel ID No. is 316093900. The regional location of the site is shown on Figure 1. The site address is 304 W. Wisconsin Street in the City of Appleton and includes “All of LOT 1 AND E23FT OF LOT 2 BLK 31 in the SIXTH WARD PLAT 6WD LESS DOC #1867125 FOR R/W” (Reference 4). As described in the "Approval and Funding for a Removal Action at the Sterling Dry Cleaners Site” document prepared by U.S. EPA and dated July 27, 2010, the Coordinates for the site are 44.2730 North latitude and 88.4091 West longitude (Reference 1).

2.2 Surrounding Land Uses

The SDC property is physically bounded on the north and west by residential properties, on the east by North Superior Street and on the south by West Wisconsin Avenue (Figure 2 & 3). Commercial properties lie to the east and south of these streets.

2.3 Environment and Geology

The climate of Outagamie County is continental and characterized by cold to very cold winters and mild to warm summers. The average winter temperatures are 15° to 30° F and average summer temperatures range from 67° to 72° F. The average annual precipitation is 31 inches. The prevailing winds are from the west in the winter and the southwest for the remaining seasons (Reference 5).

The SDC property is located in the Lower Fox River Basin in the City of Appleton, Wisconsin (Figure 1). Topography on and off site is relatively flat (Reference 6). Regional groundwater flow is

generally southeast toward the Fox River. Shallow groundwater flow direction is relatively flat and tends to be strongly influenced by nearby underground utilities along both Wisconsin Avenue and Superior Street. Depth to groundwater at the property ranges approximately from 3 to 8 feet below ground surface (bgs) (Reference 3). The elevation at the property is about 800 feet above mean sea level (Reference 3).

The surficial soils on the property and in the area are mapped as the Kewaunee silt loam, Winneconne-Manawa association and consist of slowly permeable soils underlain by silty clay glacial till and lacustrine sediments (Reference 5). Previous sampling identified brown to red brown clay as the predominant subsurface soil type to a depth of 13.5 feet (Reference 3).

Regionally, two distinct aquifers are recognized in the Fox-Wolf River basin. The groundwater in Outagamie County moves within glacial drift, which serves as the unconfined (water table) system. In addition, a deeper confined bedrock aquifer comprised of an interbedded Cambrian and Ordovician dolomites and sandstones, called the Cambro-Ordovician aquifer, occurs in this area. Only minor yields of good quality groundwater are obtained from the drift aquifer, therefore, use of the aquifer is restricted to sporadic domestic uses in the rural areas. The Cambro-Ordovician aquifer is the most widely-used aquifer in the basin and yields large quantities (500 to 1,000 gallons per minute) of groundwater for municipal water supplies (Reference 5). The City of Appleton obtains municipal water from Lake Winnebago which is located upgradient of the SDC facility. Therefore, there is no risk to local drinking water supplies from the contamination at the SDC property. There are no targets in the groundwater pathway from an aquifer usage perspective.

3.0 OPERATIONAL HISTORY AND WASTE CHARACTERISTICS

The SDC property has been a dry cleaning facility since 1954. Prior to 1954 it was a residential parcel. The on-site building was built in 1954 and operated under the name “Avenue Dry Cleaners” until 1977. From 1977 to 1990, Mr. Dale M. Scharine owned the site but the dry cleaning business was operated by Mr. So Man Chu. The main chemical used in the operation is perchloroethene (aka perc, tetrachloroethene, PCE). In 1990, Mr. So Man Chu purchased the property and continued dry cleaning operations under the name “So’s Custom Tailors and Dry Cleaning”. On January 4, 1998, there was a fire at the building which caused substantial damage (Reference 3). In September 1998, F&M Bank filed an Action for Foreclosure on the property against Mr. Chu.

F&M Bank retained OMNNI Associates, Inc. (OMNNI) to conduct a preliminary soil and groundwater investigation at the site in May 1999 (Reference 3). Significant impacts to soil and groundwater were identified during the investigation. The WDNR was not informed of this information at the time.

On June 11, 1999 the property was sold at a Sheriff’s Auction to Mr. Young Kim. Mr. Kim began reconstruction of the dry cleaning business. During reconstruction work on June 16, 1999, a contractor for Mr. Kim discovered an overturned 55-gallon drum near the back door of the building (north end) and contacted the Appleton Fire Department (AFD). The WDNR was contacted for Spill Response. The WDNR’s Emergency Response contractor, U. S. Petroleum Equipment, responded to the spill. Surface soils in the immediate spill area were excavated and drummed for proper disposal. WDNR assigned case number #04-45-255919 under WDNR’s Bureau for Remediation and Redevelopment Tracking System (BRRTS). Mr. Kim did not speak English and the WDNR misunderstood the current ownership of the property. WDNR understood that the property had not yet been sold on Sheriff’s Auction, and in order to make future purchasers aware of the necessity for investigation and cleanup, the WDNR administratively “closed” the spill action in order to place the

site notification onto the publicly available WDNR's property tracking website (BRRTS on the Web). Mr. Young Kim filed a Quit Claim Deed on June 18, 1999 transferring the property to his business operation, Sterling Enterprises of Wisconsin, Inc.

Mr. Kim operated the business, SDC, until December 2007 when he apparently sold 100% of the stock for Sterling Enterprises of Wisconsin, Inc. to Mr. Jae Cho. Mr. Cho contacted the WDNR in approximately June 2008 and discussed eligibility in the Dry Cleaner Environmental Response Program (DERP). It was then that the WDNR became aware of the May 1999 work by OMNNI.

On September 28, 2011, Mr. Cho sold 100% of the stock for Sterling Enterprises of Wisconsin, Inc. to Ms. Myra Kim Chung, who currently operates SDC.

4.0 REGULATORY HISTORY and PREVIOUS INVESTIGATIONS

In June 2008, when Mr. Cho contacted the WDNR regarding eligibility for DERP funding, WDNR did a search into the history of the property. During a conversation with OMNNI, the WDNR became aware of the May 1999 work by OMNNI and subsequently discovered the June 1999 spill documentation. OMNNI obtained permission from F&M Bank to release the "Preliminary Soil and Groundwater Investigation" report to WDNR on August 12, 2008 (Reference 3). The WDNR then notified Mr. Cho of his responsibilities to investigate and restore the property per s. 292.11(3), Wisconsin Statutes in a letter dated August 14, 2008 (Reference 3).

On May 21, 2009, the WDNR sent a letter to Mr. Cho stating that it had determined that SDC was financially unable to proceed with the necessary investigation and remediation of the site. A deed affidavit (Reference 3) was filed by WDNR on the property on July 27, 2009 placing a notice of contamination at the property.

In January 2010, the WDNR requested that U.S. EPA conduct a removal assessment at SDC. During the week of March 7, 2010, EPA and Scientific Engineering Response and Analytical Services (SERAS) collected air, soil, and groundwater samples from the SDC property and neighboring properties. Tetrachloroethene (PCE) and its degradation products were detected on and off site in soil, groundwater, and air. Soil concentrations of PCE were detected as high as 463,000 micrograms per kilogram (μg/kg); groundwater concentrations of PCE ranged up to 36,600 micrograms per liter (μg/L); indoor air concentrations at the site were up to 313,000 micrograms per cubic meter ($\mu g/m^3$). Indoor air concentrations off-site were as high as 24.1 $\mu g/m^3$ for PCE (Reference 3). Based on these results, the WDNR requested that U.S. EPA conduct an expanded assessment to determine if additional properties had been impacted by historic PCE releases from SDC, pursue enforcement against potentially responsible parties (PRP), and to conduct a removal action at SDC.

On July 27, 2010, U.S. EPA signed an Action Memorandum (Reference 3) to conduct a time-critical removal at the SDC property. On September 22, 2010, US EPA, Weston Solutions, the Superfund Technical Assessment and Response Team (START), and Environmental Restoration, LLC (ER) mobilized to the SDC property where removal activities were conducted from September 22-30, 2010 and from November 3-4, 2010 (Reference 3). A total of approximately 164 tons of hazardous waste contaminated soils were removed for disposal at the Michigan Disposal Waste Treatment Plant. Numerous limitations prevented a complete removal of the source area contamination. Specifically, the active dry cleaning business was present immediately adjacent to the excavation, mature trees are located immediately west, power lines stretched directly over the excavation area, an active gas

line and abandoned utility pipe extended into the southern extent of the excavation, and two fiber optic lines extended through the suspected center of the source area. All these factors severely limited the northern extent of the excavation. As a result of these limitations, ER applied Regenesis Hydrogen Release Compound - Extended (HRC-X®[1]) at the base and sidewalls of the excavation, prior to backfilling the excavation, to enhance microbial activity and degradation of the remaining chlorinated contaminants. The depth of the excavation extended just 3-4 feet bgs in the southeast corner of the excavation, 4-5 feet bgs along the southern edge and southwest corner of the excavation and to 9 feet bgs in the northwest, central and northeast portions of the excavation. The excavation was backfilled with clear stone, followed by compacted clay, and paved with concrete. Rock Road Plumbing installed a vapor intrusion abatement system in the residence at Unit 002 adjacent to the excavation.

From May 2 to 5, 2011, U.S. EPA and SERAS personnel performed additional site sampling to evaluate the effectiveness of the Removal Action and residual impacts in soil, groundwater, and indoor air (Reference 2). In July 2011, the WDNR installed five permanent monitoring wells to evaluate the effectiveness of the Removal Action over time. Post-excavation sampling revealed that additional site investigation is necessary. WDNR completed a Preliminary Assessment dated September 6, 2012 (Reference 3). Additional semi-annual groundwater sampling at these five monitoring wells continues through spring of 2013 by WDNRs' consultant, Terracon (Reference 3).

5.0 DISCUSSION OF SAMPLE DATA and MIGRATION PATHWAYS

The purpose of this section is to evaluate the revised pathway analysis to include information regarding current site conditions. Several phases of soil, groundwater, and vapor sampling occurred between 1999 and 2012. In 2009, the SDC owner notified the WDNR that he was unable to financially proceed with further investigation and remediation. The WDNR requested assistance from U.S. EPA Removal program in assessing soil, groundwater, and vapor risks in the area. Environmental sampling conducted by U.S. EPA, WDNR, and their contractors in 2010 through 2012 established the presence of several exceedances of ch. NR 140 Wisconsin Administrative Code (WAC) groundwater standards on the property in addition to soil and air exceedances. Refer to Figures 2 & 3 for the locations of all soil borings/temporary monitoring wells, permanent monitoring wells, and air sampling.

PCE and its degradation products, trichloroethene (TCE), cis-1,2-dichloroethene (cis-DCE), and vinyl chloride (VC) were detected on and off site in soil, groundwater, and/or air. Several sampling events occurred between 1999 and 2011, with soil concentrations of PCE detected as high as 15,000,000 μg/kg; groundwater concentrations ranged up to 36,600 μg/L; indoor air concentrations as high as 313,000 $\mu g/m^3$ on site within the active dry cleaner and 24.1 $\mu g/m^3$ in an off-site residence (Reference 3).

SDC is currently an operating dry cleaner with approximately six employees. The two neighboring residential parcels are homes for 2 people each and located at 308 W. Wisconsin and 1315 N. Superior. There are no known schools or daycare facilities within 200' of SDC. According to the 2010 Census (Reference 7) there are approximately 18,078 people living within a one-mile radius of SDC.

[1] Regenesis HRC-X is a controlled-release, electron donor material, that when hydrated is specifically designed to produce an extended, controlled release of lactic acid and enhances natural degradation of CVOCs.

The WDNR has completed additional soil and groundwater sampling in September and October 2012, and is continuing with regularly scheduled groundwater monitoring.

5.1 Soil

There is minimal risk of direct contact to any contaminated soils as the entire source area is currently paved or covered by building structure. However, the soil data presented here will assist in determination of the extent of soil impacts. The soil exposure pathway generally includes the top two feet. Therefore, the soil discussion that follows is intended to help define the overall extent of soil impacts.

Several phases of soil sampling have occurred at the SDC property. During OMNNI's (at the time, a Lender's consultant) investigation in May 1999 (Reference 3) chlorinated volatile organic compounds (CVOC) contamination was identified at significant concentrations in soil. For example, PCE was found at 20,000 μg/kg at 3-5 feet bgs at boring B-2. During a spill from a 55-gallon drum stored outside in June 1999, PCE was found in soil at 15,000,000 μg/kg. In March 2010, U.S. EPA Removal drilled ten soil borings (SB01-SB10) to assess the risk to human health. Soil boring SB05 located near the June 1999 spill area had significantly high levels of CVOCs including: PCE at 463,000 μg/kg (4.5'-5' depth), TCE at 155,000 μg/kg (6'-6.5'), cis-DCE at 7,180 μg/kg (6'-6.5'), and due to elevated detections limits, VC was not detected above 5,950 μg/kg (6'-6.5'). With these results, U.S. EPA wrote an Action Memo dated July 27, 2010 to perform a time-critical removal (Reference 3).

U.S. EPA Removal mobilized on September 22 to September 30, 2010 (Reference 3) and excavated and disposed of ten (10) 20-cubic yard roll-off boxes from the source area on the north side of the SDC building. Confirmation soil samples were collected on the sidewalls and base of the excavation (borings SO1-SO6). Results of these confirmation samples ranged from 1,600 to 54,000 μg/kg for PCE and showed that significantly impacted soil still remains both horizontally and vertically in the area; however, underground utilities and structural impediments did not allow for further excavation. Specifically, the active dry cleaning business was present immediately adjacent to the excavation, mature trees were located immediately west, power lines stretched directly over the excavation area, an active gas line and abandoned utility pipe extended into the southern extent of the excavation, and two fiber optic lines extended through the suspected center of the source area. These factors severely restricted the depth and the northern extent of the excavation.

On May 3, 2011, U.S. EPA collected four post-excavation soil samples: SB-24 (5'-5.5' depth), SB-25 (5.5'-6' depth), SB-26 (9'-9.5' depth), and SB-27 (5'-5.5' depth). On July 13, 2011, WDNR and their contractor collected the following soil samples during the installation of monitoring well borings: MW-1 (1'-2' and 6'-7' depths), MW-2 (3'-4', 9'-10', and 12'-13' depths), MW-3 (4'-5' and 9'-10' depths), MW-4 (3'-4' and 7'-8' depths), and MW-5 (3'-4' and 7'-8' depths). Almost all soil samples indicated moderate to high concentrations of PCE, TCE, cis-DCE, and VC remain in the soil at the property. Soil results ranged from 428 to 298,000 μg/kg for PCE. The highest concentrations were detected in the area of former boring locations SB-25, SB-26 and MW-2, directly north of the northern service door, off the concrete. Detections of PCE in soil at boring MW-2 were: 4,050 μg/kg at 3'-4'; 298,000 μg/kg at 9'-10'; and 35,500 μg/kg at 12'-13'.

As a part of this SSI, on September 25, 2012, WDNR and their contractor, OMNNI Associates, drilled fifteen additional soil borings of which eight were installed as monitoring wells and one installed as a piezometer. Soil samples were submitted to the U.S. EPA Contract Lab Program (CLP) for analysis. Soil data results were received on November 21, 2012 via email.

The soil data from the September 25, 2012 drilling and sampling event is summarized in Table 1 and depicted in Figures 5 and 6. Sample Depths are designated as the following: "a" is from 2.5' to 4.5' depth; "b" is from 7.5' to 9.5' depth (except at SSIP-1 where the "b" sample is from 12.5' to 14.5'); and "c" is from 22.5' to 24.5' depth. The most significant concentration was detected in the sample from boring SSIP-1. Boring SSIP-1 is located in the area of the 2010 U.S.EPA Removal's excavation and was installed as a piezometer, PZ-1. The "a" depth sample was not taken at SSIP-1, since it was in the clean backfill from the U.S. EPA 2010 excavation area. The concentrations of PCE and TCE at the "b" depth (12.5' to 14.5') are 51,000 μg/kg and 8,100 μg/kg, respectively[2]; and at the "c" depth (22.5' to 24.5') PCE and TCE are 30,000 μg/kg and 92 μg/kg, respectively.

Other locations of impacts to soil include SSI-6 which is inside the building and adjacent to the dry cleaning machine. Concentrations of PCE and TCE at this location are 120 μg/kg and 3.8 μg/kg in the "a" sample and 170 μg/kg and 7 μg/kg in the "b" sample. Boring SSI-5 is located near the storm sewer lateral that extends from the basement sump and exits the building on the southeast corner of the building. PCE concentration at boring SSI-5 is 9.8 μg/kg in the "a" sample and was not detected in the "b" sample. Boring SSI-13 is located on the south side of the building and is near the sanitary lateral. PCE concentration at the "a" depth is 0.51 μg/kg, and PCE and TCE concentrations at the "b" depth are 57 μg/kg and 1.1 μg/kg, respectively.

The areal extent of soil contamination prior to any removal was approximately 35 feet by 75 feet. The volume is estimated at 1458 cubic yards. U.S. EPA ER excavated and disposed of approximately a 12 foot by 35 foot area, half to a depth of 5 feet and half to a depth of 12 feet; for a total volume removed at approximately 132 cubic yards (150 tons) (Reference 8).

5.2 Groundwater

The local geologic and hydrogeologic setting and local water usage is discussed in Section 2.3 above. The 1-mile and 4-mile radius maps are attached as Figures 4a and 4b and depicted in the following table.

Distance from site→	0 – ¼ mile	¼ - ½ mile	½ – 1 mile	1 – 2 mile	2 – 4 mile
City Population on Municipal Water (treated surface)	1335	4382	12,433	31,445	62,620

The City of Appleton obtains municipal water from Lake Winnebago which is located upgradient of the SDC facility. Therefore, there is no risk to local drinking water supplies from the contamination at the SDC property. There are no targets in the groundwater pathway from an aquifer usage perspective.

Initial groundwater results were obtained in May 1999 from temporary borings (Reference 3) which detected concentrations of PCE as high as 13,000 μg/L. During the U.S. EPA Removal assessment work in March 2010 groundwater samples were obtained from the borings for temporary wells TW-01 to TW-10 (Reference 3). Well TW-05 was located directly north of the northern service door, off the concrete and had the highest concentrations of PCE in groundwater at 36,600 μg/L. During the U.S. EPA Removal Action in September 2010, HRC-X® was added into the excavation to further enhance

[2] It should be noted that the results from the "b" depth represent the duplicate sample (SSIP-17b) because the original sample SSIP-1b had unrealistically low concentrations for the location.

biodegradation of the remaining inaccessible contaminants in saturated soil and groundwater (Reference 3).

In May 2011 U.S. EPA performed post-excavation assessment sampling of groundwater in three temporary wells, TW-24, TW-25, and TW-26. Groundwater results indicated that significant concentrations of CVOC remain at the site. TW-26 contained the highest remaining concentrations of PCE at 21,100 μg/L, TCE at 1820 μg/L cis-DCE at 3440 μg/L, and VC at 1.4 μg/L (Reference 3).

In July 2011, five permanent monitoring wells (MW-1 thru MW-5) were installed by the WDNR contractor and are currently being sampled for four semi-annual events. The highest groundwater concentrations were detected in well MW-2. In the August 2011 sampling event, CVOCs were detected as follows: PCE at 1,500 μg/L, TCE at 1,920 μg/L, cis-DCE at 17,000 μg/L, and VC at 425 μg/L. In the February 2012 sampling event, detections of CVOC were as follows: PCE at 419 μg/L; TCE at 109 μg/L; cis-DCE at 18,400 μg/L; and VC at 2,330 μg/L (Reference 3). The August 2012 groundwater monitoring event detected the following CVOC at MW-2: PCE at 599 μg/L; TCE at <96.0 μg/L; cis-DCE at 7,960 μg/L; and VC at 1,360 μg/L.

Historical groundwater analytical data (Reference 3) indicate the presence of CVOC at levels that are above the WDNR ch. NR 140 WAC Enforcement Standards (ES). These standards are similar, if not exactly equivalent to the Federal Drinking Water Maximum Contaminant Levels (MCL) for most compounds. The following is a summary of the contaminants of concern that have exceeded the ES/MCL in one or more monitoring wells at the site during the 2011 to 2012 sampling events: PCE, TCE, cis-DCE, and VC. The concentrations detected in August 2011, February 2012 (Reference 3), and subsequently August and October 2012, indicate that natural degradation is occurring at the site and this degradation is likely due to the application of HRC-X®.

On September 25, 2012, WDNR and their contractor, OMNNI Associates, drilled fifteen additional soil borings of which eight were installed as monitoring wells and one installed as a piezometer. On October 30, 2012, WDNR and their contractor, OMNNI Associates, returned to the site to sample the groundwater from all monitoring wells, the piezometer, and the SDC basement sump. Well MW-10 located on the residential property identified as Unit 002 was dry and unable to be sampled; however, enough water had accumulated during the following weeks and it was sampled on December 18, 2012 and analyzed by Synergy Environmental Lab Inc. (WDNR Lab Certification #445037560).

Groundwater results for the October 2012 sampling event are shown in Table 2 and also depicted in Figures 7, 8, 9, and 10. The significant detections are located in the wells on the north side of the SDC facility and are summarized as follows:

Location	PCE	TCE	cis-DCE	VC
SDC basement sump	45	6	120	30
MW-1	99	50	750	<10
MW-2	1,000	210	8,300	1,300
MW-3	1,400	85	170	<25
MW-4	270	83	67	
MW-5	29			
TW-6	10			
PZ-1			1,400	160

All results reported in ug/L

Historical groundwater data from all the monitoring wells, piezometer and sump are shown in Table 3. Groundwater elevations and other well specific field parameters are shown in Table 4. Figure 11 depicts the groundwater elevation during the October 2012 sampling event. Evaluation of the data and the map indicate that the utilities and the basement sump have a strong influence on the groundwater flow in the area.

5.3 Surface Water

There is no likelihood of an observed release to surface water by overland flow, flood or runoff. The site is over one mile from the nearest surface water. The nearest surface water is the Fox River (approximately one mile south of SDC) which is not directly used for drinking water. The city of Appleton uses surface water from Lake Winnebago for its drinking water and the intake is several miles upgradient of the site.

5.4 Air

The U.S. EPA performed a large vapor investigation, including samples of soil gas, sub-slab, and indoor air, in the neighborhood of the site. One adjacent home revealed indoor air above the vapor action level ranging from 15.1 to 24.1 $\mu g/m^3$ for PCE and from 0.779 to 1.28 $\mu g/m^3$ for TCE. U.S. EPA installed a mitigation system that is operating at this home, identified as Unit 002 on Figure 2 (Reference 2). Post-mitigation vapor sampling by U.S. EPA revealed no indoor air above vapor action levels in Unit 002 (Reference 3). No additional vapor sampling was performed by WDNR during the SSI. The mitigation system installed at Unit 002 continues to operate. The WDNR intends to utilize the state's Vapor Intrusion Zone Contract (Reference 9) to evaluate the effectiveness of the mitigation system at Unit 002 and perform optimization as necessary. The September 2012 soil results and the October 2012 groundwater results indicate a potential vapor migration pathway through sanitary and stormwater laterals to Wisconsin Avenue. WDNR also plans to investigate this issue further under the Vapor Intrusion Zone Contract.

6.0 SUMMARY and CONCLUSION

The SDC site has been an operating dry cleaner since 1954. In 1998, there was a fire in the building. In 1999, there was a chemical spill from a drum on the north side of the facility. At the time, only the immediate surface threat was addressed. Historical spills prior to 1998 are also likely to have occurred and contributed to the soil contamination.

6.1 Source Areas

The major source area is on the north side of the SDC facility outside the back door. Prior to any removals the source area was approximately 1458 cubic yards. Excavation by U.S. EPA ER removed approximately 132 cubic yards. Soil results indicate that significant concentrations of CVOC remain at depths greater than 8' below the groundwater table in this area. Soil results from SSI-6 indicate some low-level PCE in soils adjacent to the dry cleaner machine inside the building.

Groundwater on the north side of the building remains significantly impacted. It appears that the contaminant plume is primarily confined to the immediate area adjacent and underneath the north side of the SDC building.

The soil excavation performed by U.S. EPA Removals has reduced and limited the impacts to the environment.

6.2 Migration Pathways

Soil sample results from boring SSI-5 (near the storm sewer lateral) indicate the possibility that the discharge from the basement sump (which collects contaminated groundwater around the building foundation) has leaked and is a secondary source area. Soil sample results from boring SSI-13 (near the sanitary sewer lateral) indicates that previous operations included disposal of PCE into sanitary sewer drains and that the sanitary lateral has also leaked, contributing to the secondary source area. Both laterals may also be acting as conduits for contaminated groundwater and/or vapor migration. Further investigation by WDNR will include vapor sampling of the utilities and evaluation of this potential pathway.

Installation of a piezometer in the source area and additional groundwater monitoring data indicate that significant impacts remain in groundwater. WDNR will continue groundwater monitoring under a state contract with a consultant to sample and observe any changes in the groundwater plume character. Additional piezometers may be installed to further evaluate the vertical and horizontal extent of the plume.

7.0 REFERENCES

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2. Trip Report #SER00068 – May 2011 Indoor Air, Soil and Groundwater Sampling, Scientific Engineering Response and Analytical Services, dated August 3, 2011.*
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6. http://www.anyplaceamerica.com/topographic_maps/wisconsin/outagamie_county.
7. Demographic Profile, ESRI Business Analyst, December 7, 2012, www.esri.com/ca.
8. PolRep #3 – U.S. EPA Removal documentation dated September 21, 2011.
9. WDNR Remediation & Redevelopment (RR Report) dated August 15, 2013, http://dnr.wi.gov/topic/brownfields/documents/news/081513.pdf

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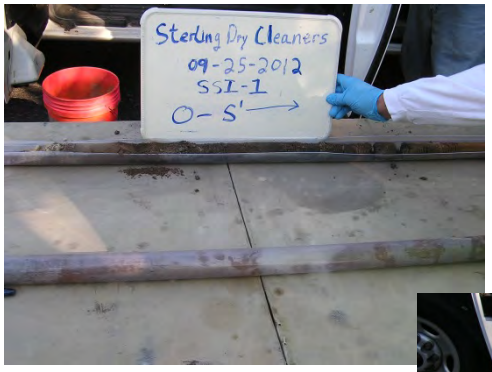
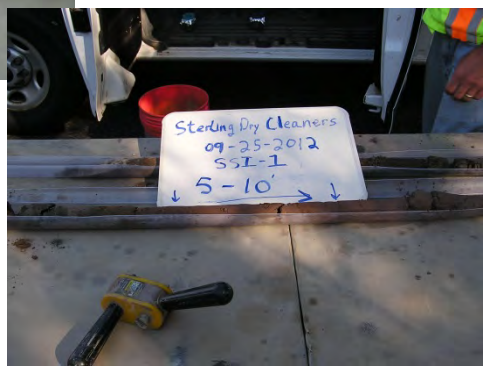
* References too voluminous to attach; they can be reviewed at Wisconsin Department of Natural Resources-Oshkosh Service Center.

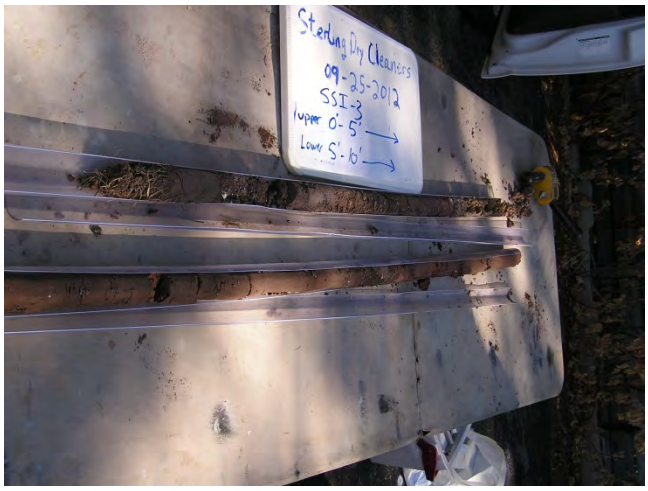
8.0 PHOTO DOCUMENTATION LOG





SSI-1 – located on west side of facility and north of Unit 004.

SSI-2 – located on west side of facility and north of Unit 004.



SSI-3 – located on west side of facility and north of Unit 004.

SSI-4 – located northwest of source area on a paved lot.

SSI-5 – located on the southeast corner of the facility, near the storm sewer lateral.

SSI-6 – located approximately three feet from the DCM. Installed temporary well TW-6.

SSI-7 – located on west side of facility and north of Unit 004 and installed as a groundwater monitoring well, MW-7.

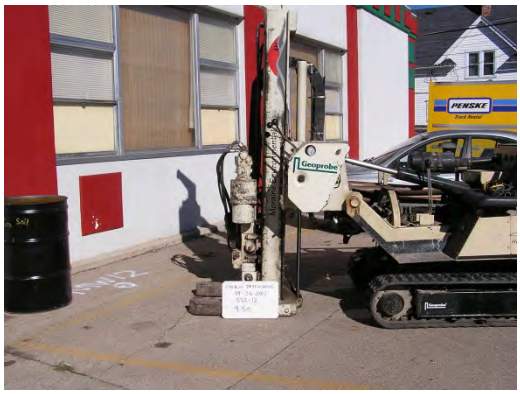
SSI-8 – located northwest of source area in paved parking lot. Installed MW-8.

SSI-9 – located northwest of source area in paved parking lot. Installed MW-9.

SSI-10 – located on the southwest corner of Unit 002 deck. Installed MW-10.

SSI-11 – located near the northeast corner of the SDC facility. Installed MW-11.

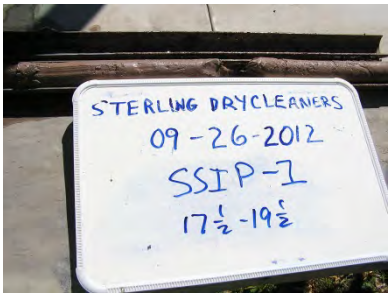
SSI-12 – located on east side of SDC facility. Installed MW-12.



SSI-13 – located on the south side of the SDC facility near the front door. Installed MW-13.

SSI-14 – located southeast of SDC facility. Installed MW-14.

SSIP-1 – located on the north side of the SDC facility. Installed as a piezometer, PZ-1.



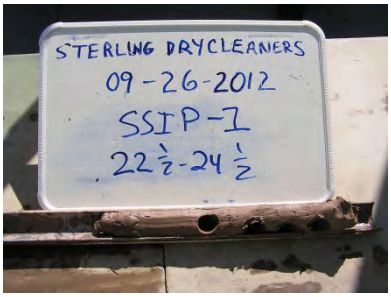
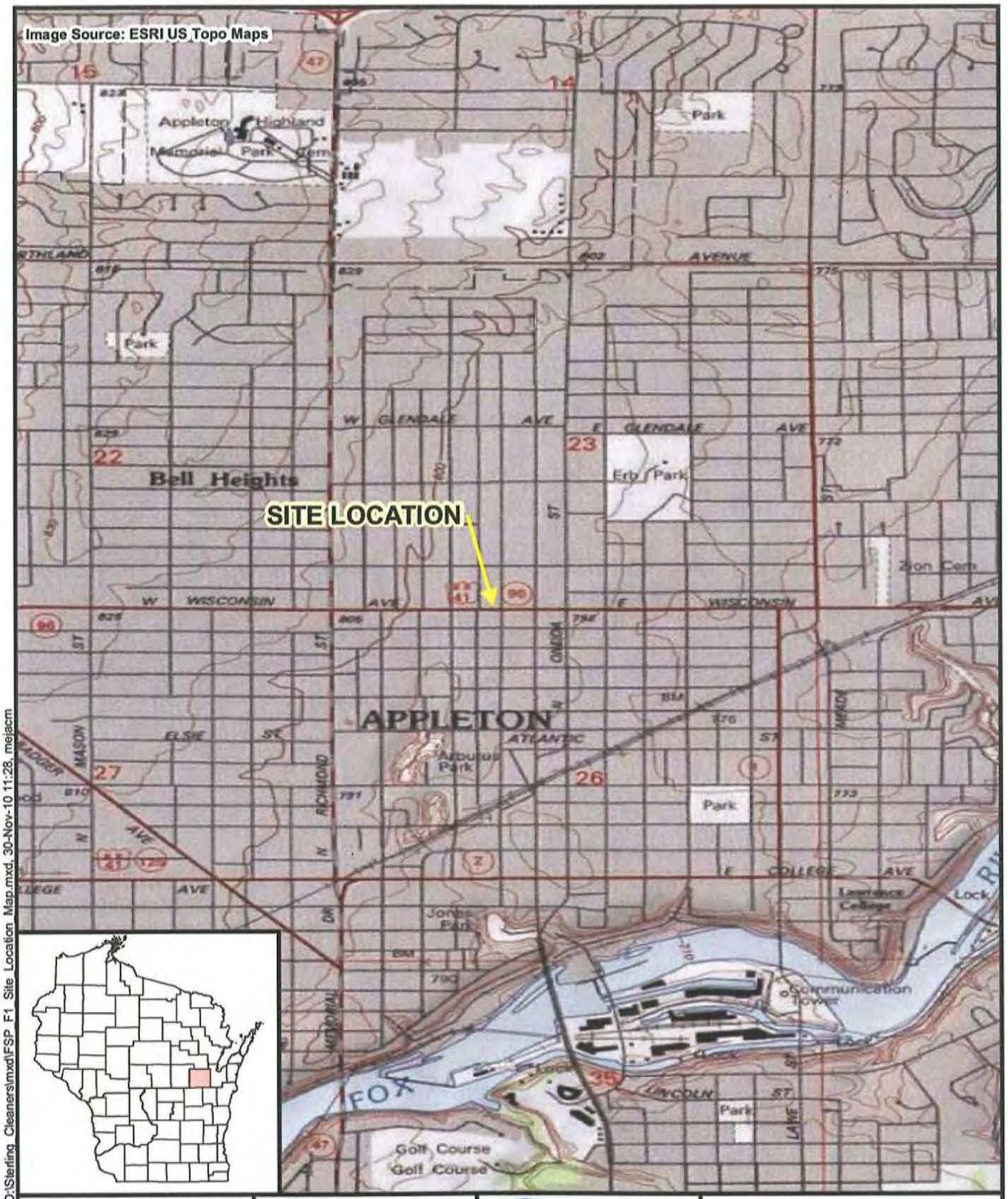


Figure 1



File: D:\Sterling_Cleaners\mxd\FSP_F1_Site_Location_Map.mxd, 30-Nov-10 11:28, mejacm

Figure 2

LEGEND

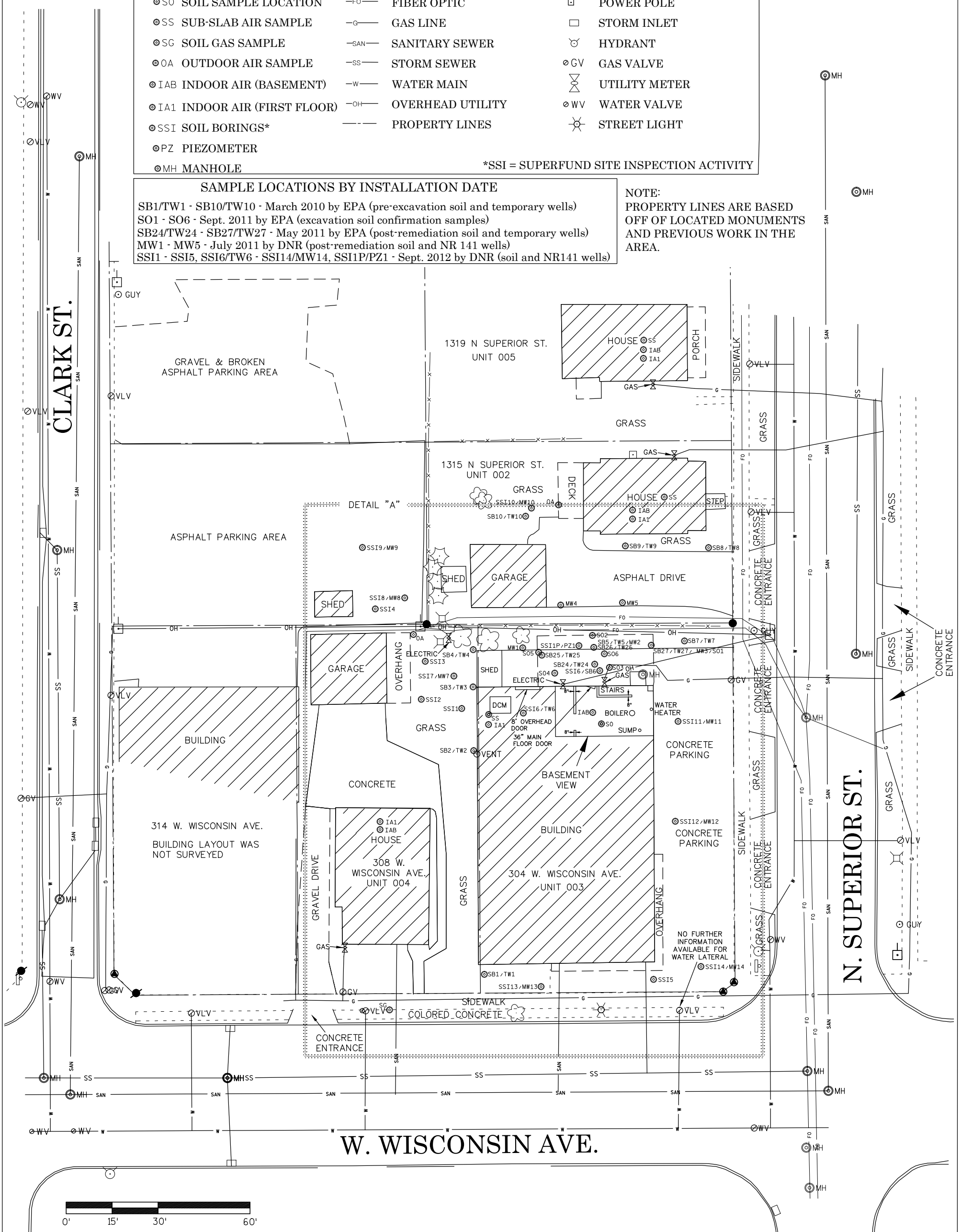
●	1" IRON PIPE FOUND		TELEPHONE PEDESTAL	— —	EXCAVATION BOUNDARY
	3/4" REBAR FOUND		STREET SIGN	VLV	WATER SERVICE VALVE
	MAG NAIL FOUND		DECIDUOUS TREE		AIR CONDITIONER
MW	MONITORING WELL		CONIFEROUS TREE	DCM	DRY CLEAN MACHINE
TW	TEMPORARY WELL	—X—	WOOD FENCE	GUY	GUY WIRE
SO	SOIL SAMPLE LOCATION	—FO—	FIBER OPTIC		POWER POLE
SS	SUB-SLAB AIR SAMPLE	—G—	GAS LINE		STORM INLET
SG	SOIL GAS SAMPLE	—SAN—	SANITARY SEWER		HYDRANT
OA	OUTDOOR AIR SAMPLE	—SS—	STORM SEWER	GV	GAS VALVE
IAB	INDOOR AIR (BASEMENT)	—W—	WATER MAIN		UTILITY METER
IA1	INDOOR AIR (FIRST FLOOR)	—OH—	OVERHEAD UTILITY	WV	WATER VALVE
SSI	SOIL BORINGS*	—·—	PROPERTY LINES		STREET LIGHT
PZ	PIEZOMETER				
MH	MANHOLE				

*SSI = SUPERFUND SITE INSPECTION ACTIVITY

SAMPLE LOCATIONS BY INSTALLATION DATE

SB1/TW1 - SB10/TW10 - March 2010 by EPA (pre-excavation soil and temporary wells)
SO1 - SO6 - Sept. 2011 by EPA (excavation soil confirmation samples)
SB24/TW24 - SB27/TW27 - May 2011 by EPA (post-remediation soil and temporary wells)
MW1 - MW5 - July 2011 by DNR (post-remediation soil and NR 141 wells)
SSI1 - SSI5, SSI6/TW6 - SSI14/MW14, SSI1P/PZ1 - Sept. 2012 by DNR (soil and NR141 wells)

NOTE:
PROPERTY LINES ARE BASED OFF OF LOCATED MONUMENTS AND PREVIOUS WORK IN THE AREA.



SCALE: 1"=15'	OMNI ASSOCIATES ONE SYSTEMS DRIVE PHONE (920)735-6900 APPLETON, WI 54914 FAX (920)830-6100	STERLING CLEANERS SITE DETAIL MAP (FORMER SO'S CLEANERS) 304 W. WISCONSIN AVENUE APPLETON, WI 54914 BRRTS NO. 02-45-552133 CERLIS ID WIN 000510415
PROJECT NAME: S3298A12		PROJECT MANAGER: BDW PROJECT ENGINEER: BDW DRAWN BY: BAW CHECKED BY: DATE: 6/04/2012
FIGURE NO.		N

Figure 3

DETAIL "A"

LEGEND

●	1" IRON PIPE FOUND		TELEPHONE PEDESTAL	— —	EXCAVATION BOUNDARY
	3/4" REBAR FOUND		STREET SIGN	VLV	WATER SERVICE VALVE
	MAG NAIL FOUND		DECIDUOUS TREE		AIR CONDITIONER
MW	MONITORING WELL		CONIFEROUS TREE	DCM	DRY CLEAN MACHINE
TW	TEMPORARY WELL	—X—	WOOD FENCE	GUY	GUY WIRE
SO	SOIL SAMPLE LOCATION	—FO—	FIBER OPTIC		POWER POLE
SS	SUB-SLAB AIR SAMPLE	—G—	GAS LINE		STORM INLET
SG	SOIL GAS SAMPLE	—SAN—	SANITARY SEWER		HYDRANT
OA	OUTDOOR AIR SAMPLE	—SS—	STORM SEWER	GV	GAS VALVE
IAB	INDOOR AIR (BASEMENT)	—W—	WATER MAIN		UTILITY METER
IA1	INDOOR AIR (FIRST FLOOR)	—OH—	OVERHEAD UTILITY	WV	WATER VALVE
SSI	SOIL BORINGS*	—·—	PROPERTY LINES		STREET LIGHT
MH	MANHOLE				

*SSI = SUPERFUND SITE INSPECTION ACTIVITY

SAMPLE LOCATIONS BY INSTALLATION DATE

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MW1 - MW5 - July 2011 by DNR (post-remediation soil and NR 141 wells)
SSI1 - SSI5, SSI6/TW6 - SSI14/MW14, SSI1P/PZ1 - Sept. 2012 by DNR (soil and NR141 wells)

NOTE:
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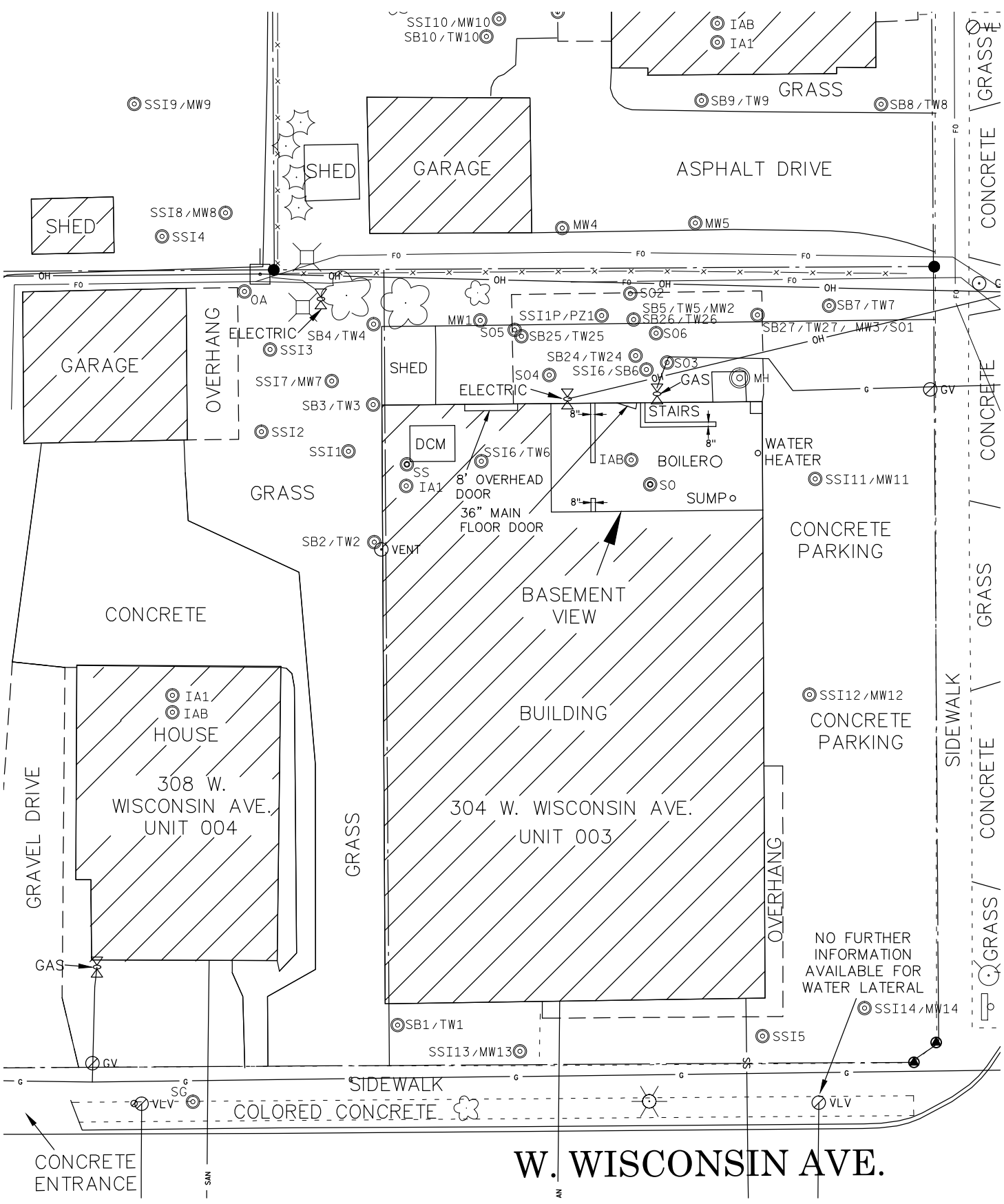
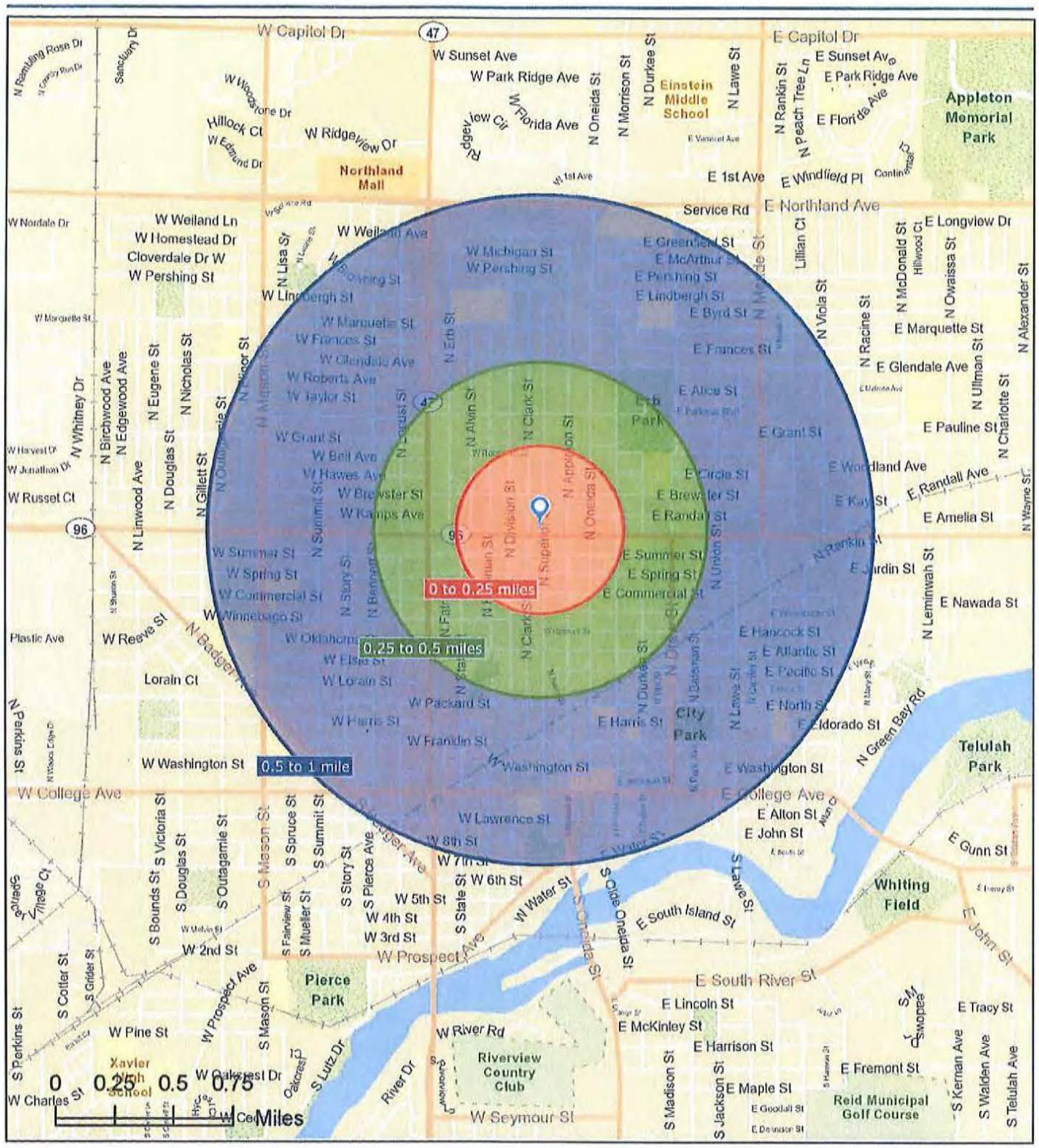


SCALE: 1"=20'	OMNI ASSOCIATES ONE SYSTEMS DRIVE PHONE (920)735-6900 APPLETON, WI 54914 FAX (920)830-6100	STERLING CLEANERS SITE DETAIL MAP (FORMER SO'S CLEANERS) 304 W. WISCONSIN AVENUE APPLETON, WI 54914	PROJECT MANAGER: BDW PROJECT ENGINEER: BDW DRAWN BY: BAW CHECKED BY: DATE: 6/04/2012
PROJECT NAME: S3298A12		BRRTS NO. 02-45-552133 CERLIS ID WIN 000510415	N
FIGURE NO.			

FIGURE 4A

Sterling Dry Cleaners 1 mi

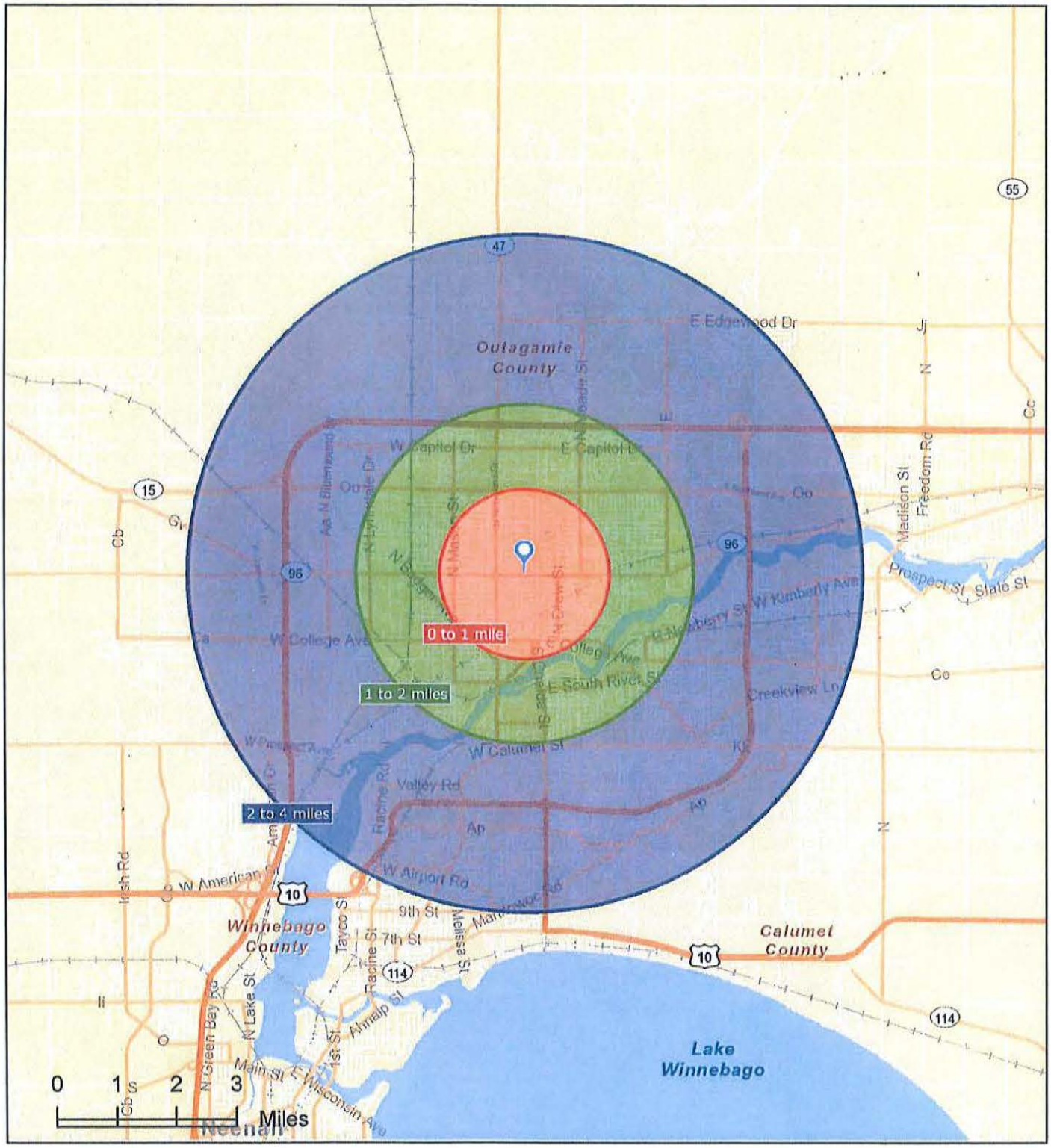


May 01, 2012

FIGURE 4B

Sterling Dry Cleaners

Four Mile Impact Radius



May 01, 2012

Figure 5

DETAIL "A"

LEGEND

●	1" IRON PIPE FOUND		TELEPHONE PEDESTAL	— —	EXCAVATION BOUNDARY
	3/4" REBAR FOUND		STREET SIGN	VLV	WATER SERVICE VALVE
	MAG NAIL FOUND		DECIDUOUS TREE		AIR CONDITIONER
MW	MONITORING WELL		CONIFEROUS TREE	DCM	DRY CLEAN MACHINE
TW	TEMPORARY WELL	—X—	WOOD FENCE	GUY	GUY WIRE
SO	SOIL SAMPLE LOCATION	—FO—	FIBER OPTIC		POWER POLE
SS	SUB-SLAB AIR SAMPLE	—G—	GAS LINE		STORM INLET
SG	SOIL GAS SAMPLE	—SAN—	SANITARY SEWER		HYDRANT
OA	OUTDOOR AIR SAMPLE	—SS—	STORM SEWER	GV	GAS VALVE
IAB	INDOOR AIR (BASEMENT)	—W—	WATER MAIN		UTILITY METER
IA1	INDOOR AIR (FIRST FLOOR)	—OH—	OVERHEAD UTILITY	WV	WATER VALVE
SSI	SOIL BORINGS*		PROPERTY LINES		STREET LIGHT
MH	MANHOLE				

*SSI = SUPERFUND SITE INSPECTION ACTIVITY

SAMPLE LOCATIONS BY INSTALLATION DATE

SB1/TW1 - SB10/TW10 - March 2010 by EPA (pre-excavation soil and temporary wells)
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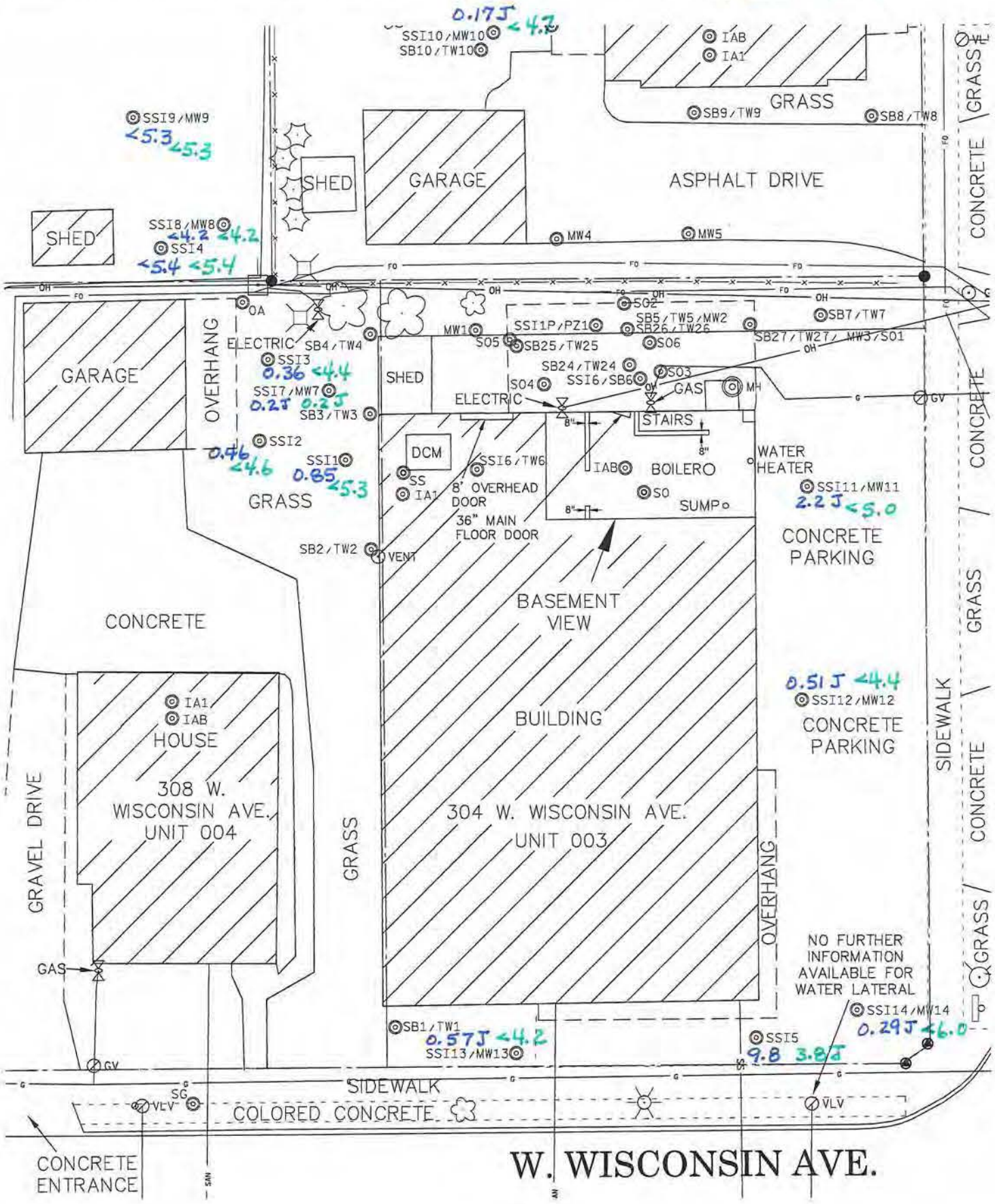
SB24/TW24 - SB27/TW27 - May 2011 by EPA (post-remediation soil and temporary wells)
MW1 - MW5 - July 2011 by DNR (post-remediation soil and NR 141 wells)
SSI1 - SSI5, SSI6/TW6 - SSI14/MW14, SSI1P/PZ1 - Sept. 2012 by DNR (soil and NR141 wells)

NOTE:
PROPERTY LINES ARE BASED OFF OF LOCATED MONUMENTS AND PREVIOUS WORK IN THE AREA.

SEPTEMBER 2012
SOIL RESULTS
(µg/kg)
at 2.5' to 4.5' Depth (ä")
PCE TCE



SCALE: 1"=20'	OMNI ASSOCIATES ONE SYSTEMS DRIVE PHONE (920)735-6900 APPLETON, WI 54914 FAX (920)830-6100	STERLING CLEANERS SITE DETAIL MAP (FORMER SO'S CLEANERS) 304 W. WISCONSIN AVENUE APPLETON, WI 54914 BRRTS NO. 02-45-552133 CERLIS ID WIN 000510415	PROJECT MANAGER: BDW PROJECT ENGINEER: BDW DRAWN BY: BAW CHECKED BY: DATE: 6/04/2012
PROJECT NAME: S3298A12			
FIGURE NO.			

N

FIGURE 5

Figure 6

DETAIL "A"

LEGEND

●	1" IRON PIPE FOUND		TELEPHONE PEDESTAL	— —	EXCAVATION BOUNDARY
	3/4" REBAR FOUND		STREET SIGN	VLV	WATER SERVICE VALVE
	MAG NAIL FOUND		DECIDUOUS TREE		AIR CONDITIONER
MW	MONITORING WELL		CONIFEROUS TREE	DCM	DRY CLEAN MACHINE
TW	TEMPORARY WELL	—X—	WOOD FENCE	GUY	GUY WIRE
SO	SOIL SAMPLE LOCATION	—FO—	FIBER OPTIC		POWER POLE
SS	SUB-SLAB AIR SAMPLE	—G—	GAS LINE		STORM INLET
SG	SOIL GAS SAMPLE	—SAN—	SANITARY SEWER		HYDRANT
OA	OUTDOOR AIR SAMPLE	—SS—	STORM SEWER	GV	GAS VALVE
IAB	INDOOR AIR (BASEMENT)	—W—	WATER MAIN		UTILITY METER
IA1	INDOOR AIR (FIRST FLOOR)	—OH—	OVERHEAD UTILITY	WV	WATER VALVE
SSI	SOIL BORINGS*	—·—·—	PROPERTY LINES		STREET LIGHT
MH	MANHOLE				

*SSI = SUPERFUND SITE INSPECTION ACTIVITY

SAMPLE LOCATIONS BY INSTALLATION DATE

SB1/TW1 - SB10/TW10 - March 2010 by EPA (pre-excavation soil and temporary wells)
SO1 - SO6 - Sept. 2011 by EPA (excavation soil confirmation samples)
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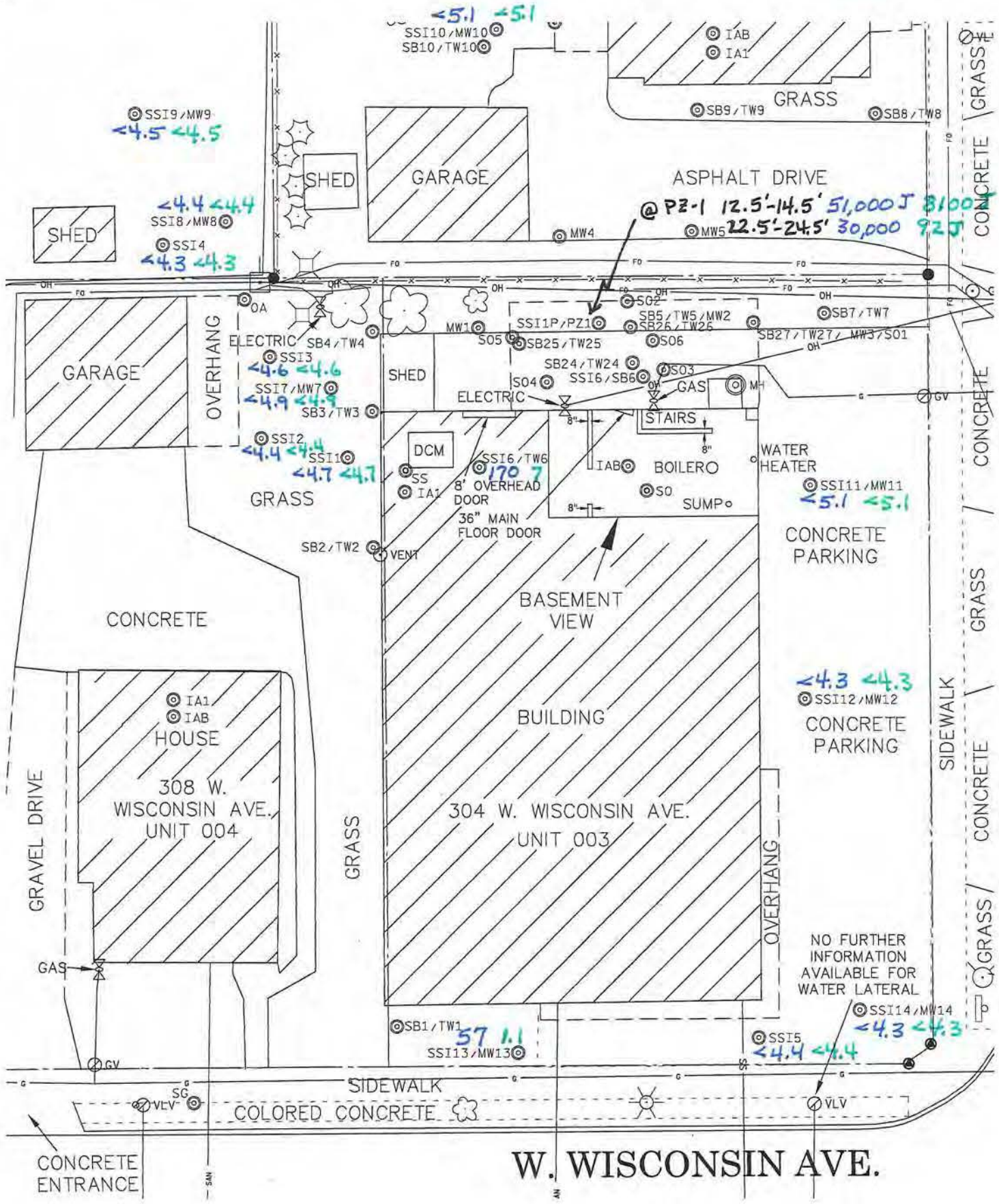
MW1 - MW5 - July 2011 by DNR (post-remediation soil and NR 141 wells)
SSI1 - SSI5, SSI6/TW6 - SSI14/MW14, SSI1P/PZ1 - Sept. 2012 by DNR (soil and NR141 wells)

NOTE:
PROPERTY LINES ARE BASED OFF OF LOCATED MONUMENTS AND PREVIOUS WORK IN THE AREA.

SEPTEMBER 2012
SOIL RESULTS
(ug/kg)
at 7.5' to 9.5' depth ("b")
PCE TCE



SCALE: 1"=20'	OMNI ASSOCIATES ONE SYSTEMS DRIVE PHONE (920)735-6900 APPLETON, WI 54914 FAX (920)830-6100	STERLING CLEANERS SITE DETAIL MAP (FORMER SO'S CLEANERS) 304 W. WISCONSIN AVENUE APPLETON, WI 54914	PROJECT MANAGER: BDW PROJECT ENGINEER: BDW DRAWN BY: BAW CHECKED BY: DATE: 6/04/2012
PROJECT NAME: S3298A12		BRRTS NO. 02-45-552133 CERLIS ID WIN 000510415	N
FIGURE NO.			

FIGURE 6

Figure 7

DETAIL "A"

LEGEND

●	1" IRON PIPE FOUND		TELEPHONE PEDESTAL	— —	EXCAVATION BOUNDARY
	3/4" REBAR FOUND		STREET SIGN	VLV	WATER SERVICE VALVE
	MAG NAIL FOUND		DECIDUOUS TREE		AIR CONDITIONER
MW	MONITORING WELL		CONIFEROUS TREE	DCM	DRY CLEAN MACHINE
TW	TEMPORARY WELL	—X—	WOOD FENCE	GUY	GUY WIRE
SO	SOIL SAMPLE LOCATION	—FO—	FIBER OPTIC		POWER POLE
SS	SUB-SLAB AIR SAMPLE	—G—	GAS LINE		STORM INLET
SG	SOIL GAS SAMPLE	—SAN—	SANITARY SEWER		HYDRANT
OA	OUTDOOR AIR SAMPLE	—SS—	STORM SEWER	GV	GAS VALVE
IAB	INDOOR AIR (BASEMENT)	—W—	WATER MAIN		UTILITY METER
IA1	INDOOR AIR (FIRST FLOOR)	—OH—	OVERHEAD UTILITY	WV	WATER VALVE
SSI	SOIL BORINGS*	— · —	PROPERTY LINES		STREET LIGHT
MH	MANHOLE				

*SSI = SUPERFUND SITE INSPECTION ACTIVITY

SAMPLE LOCATIONS BY INSTALLATION DATE

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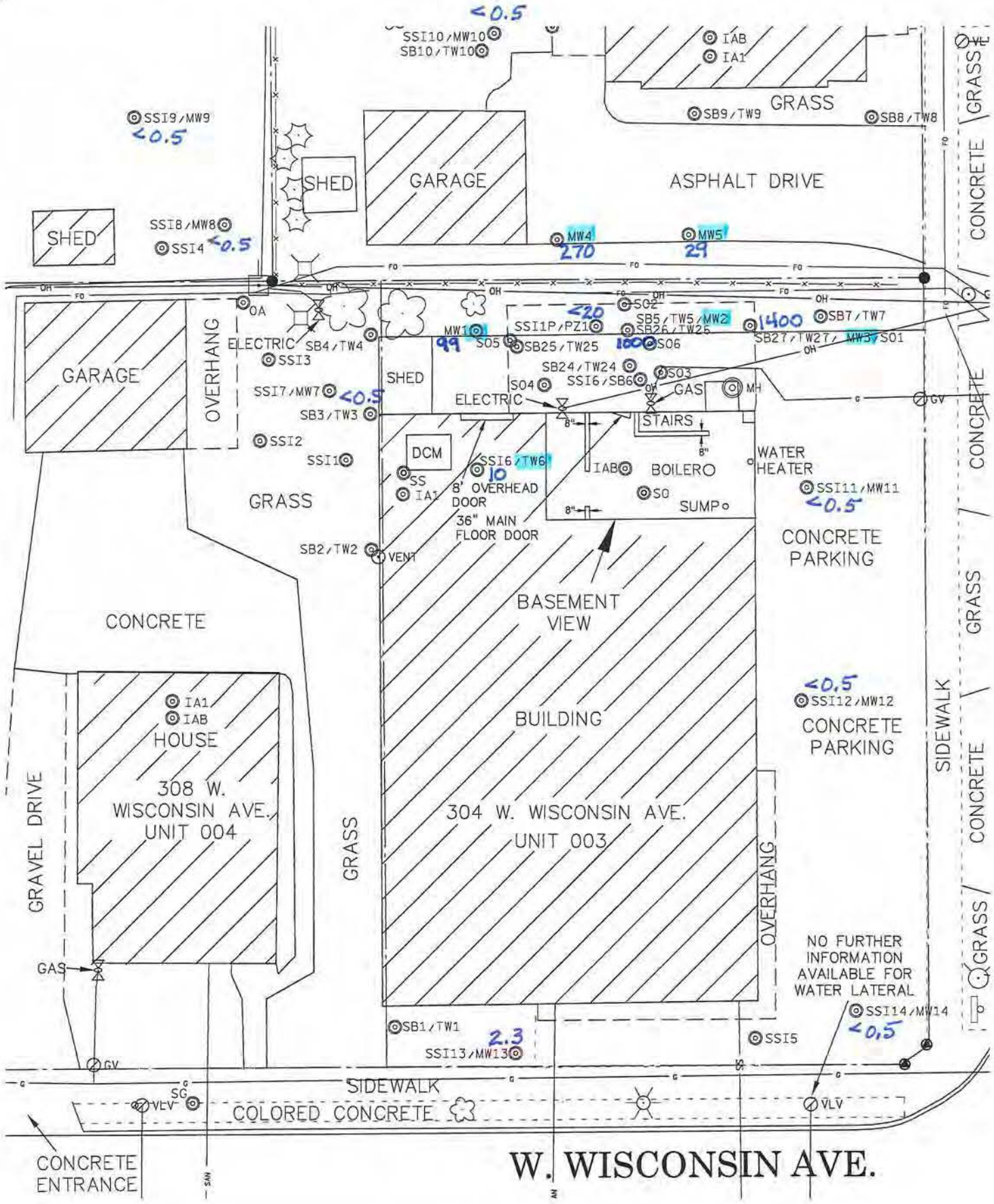
SB24/TW24 - SB27/TW27 - May 2011 by EPA (post-remediation soil and temporary wells)
MW1 - MW5 - July 2011 by DNR (post-remediation soil and NR 141 wells)
SSI1 - SSI5, SSI6/TW6 - SSI14/MW14, SSI1P/PZ1 - Sept. 2012 by DNR (soil and NR141 wells)

October 2012
GROUNDWATER RESULTS (mg/L)
PCE
Exceedance of NR140 E.S.

NOTE:
PROPERTY LINES ARE BASED OFF OF LOCATED MONUMENTS AND PREVIOUS WORK IN THE AREA.



SCALE: 1"=20'	OMNI ASSOCIATES ONE SYSTEMS DRIVE PHONE (920)735-6900 APPLETON, WI 54914 FAX (920)830-6100	STERLING CLEANERS SITE DETAIL MAP (FORMER SO'S CLEANERS) 304 W. WISCONSIN AVENUE APPLETON, WI 54914 BRRTS NO. 02-45-552133 CERLIS ID WIN 000510415	PROJECT MANAGER: BDW PROJECT ENGINEER: BDW DRAWN BY: BAW CHECKED BY: DATE: 6/04/2012
PROJECT NAME: S3298A12			N
FIGURE NO.			

FIGURE 7

Figure 8

DETAIL "A"

LEGEND

●	1" IRON PIPE FOUND		TELEPHONE PEDESTAL	— —	EXCAVATION BOUNDARY
	3/4" REBAR FOUND		STREET SIGN	VLV	WATER SERVICE VALVE
	MAG NAIL FOUND		DECIDUOUS TREE		AIR CONDITIONER
MW	MONITORING WELL		CONIFEROUS TREE	DCM	DRY CLEAN MACHINE
TW	TEMPORARY WELL	—X—	WOOD FENCE	GUY	GUY WIRE
SO	SOIL SAMPLE LOCATION	—FO—	FIBER OPTIC		POWER POLE
SS	SUB-SLAB AIR SAMPLE	—G—	GAS LINE		STORM INLET
SG	SOIL GAS SAMPLE	—SAN—	SANITARY SEWER		HYDRANT
OA	OUTDOOR AIR SAMPLE	—SS—	STORM SEWER	GV	GAS VALVE
IAB	INDOOR AIR (BASEMENT)	—W—	WATER MAIN		UTILITY METER
IA1	INDOOR AIR (FIRST FLOOR)	—OH—	OVERHEAD UTILITY	WV	WATER VALVE
SSI	SOIL BORINGS*	—·—	PROPERTY LINES		STREET LIGHT
MH	MANHOLE				

*SSI = SUPERFUND SITE INSPECTION ACTIVITY

SAMPLE LOCATIONS BY INSTALLATION DATE

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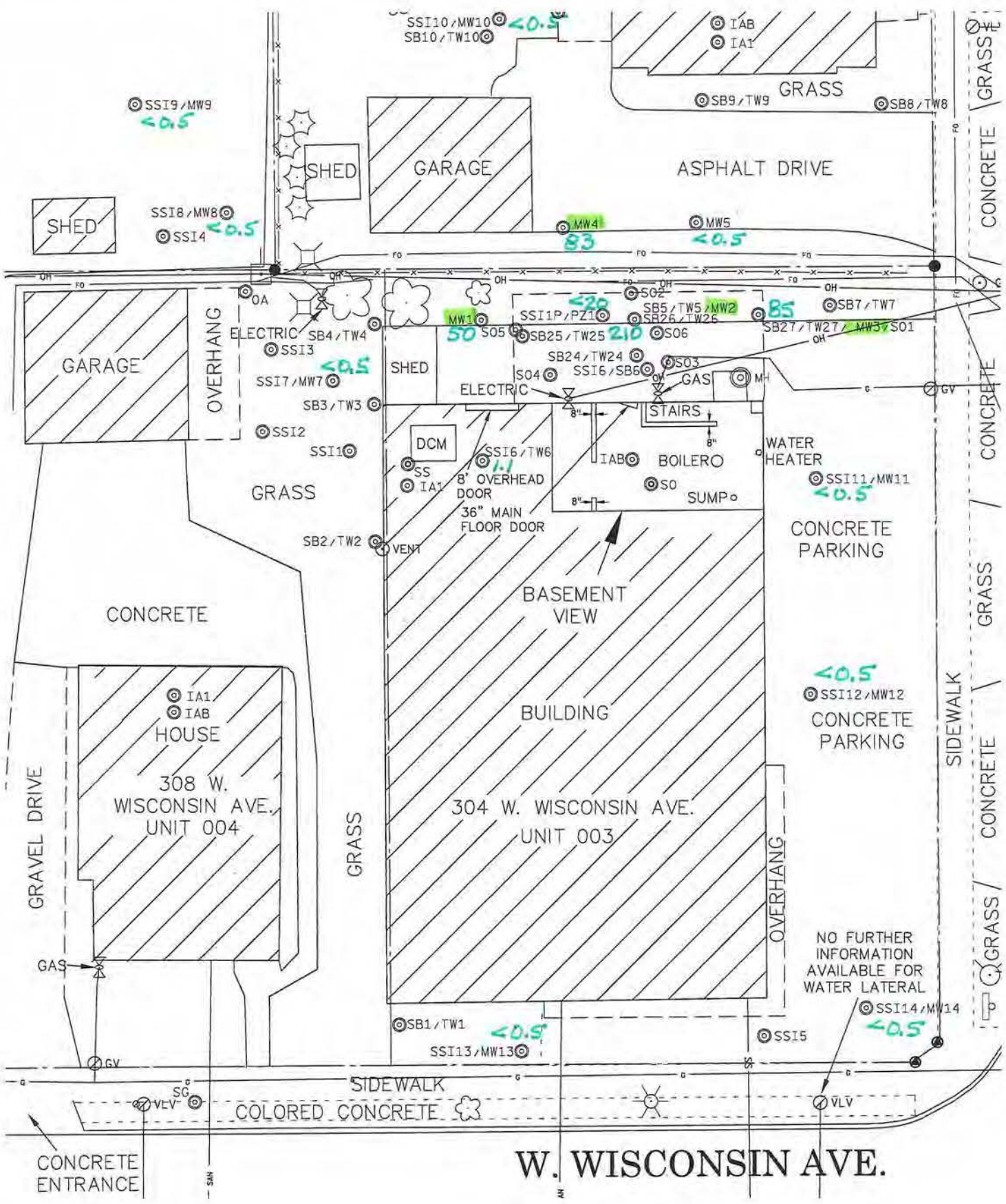
MW1 - MW5 - July 2011 by DNR (post-remediation soil and NR 141 wells)
SSI1 - SSI5, SSI6/TW6 - SSI14/MW14, SSI1P/PZ1 - Sept. 2012 by DNR (soil and NR141 wells)

October 2012
GROUNDWATER RESULTS (µg/L)
TCE
EXCEEDANCE OF NR140 E.S.

NOTE:
PROPERTY LINES ARE BASED OFF OF LOCATED MONUMENTS AND PREVIOUS WORK IN THE AREA.



SCALE: 1"=20'	OMNI ASSOCIATES	STERLING CLEANERS SITE DETAIL MAP	PROJECT MANAGER: BDW
PROJECT NAME: S3298A12	ONE SYSTEMS DRIVE PHONE (920)735-6900 APPLETON, WI 54914 FAX (920)830-6100	(FORMER SO'S CLEANERS)	PROJECT ENGINEER: BDW
FIGURE NO.		304 W. WISCONSIN AVENUE APPLETON, WI 54914	DRAWN BY: BAW
		BRRTS NO. 02-45-552133 CERLIS ID WIN 000510415	CHECKED BY:
			DATE: 8/04/2012

N

FIGURE 8

Figure 9

DETAIL "A"

LEGEND

●	1" IRON PIPE FOUND		TELEPHONE PEDESTAL	— —	EXCAVATION BOUNDARY
	3/4" REBAR FOUND		STREET SIGN	VLV	WATER SERVICE VALVE
	MAG NAIL FOUND		DECIDUOUS TREE		AIR CONDITIONER
MW	MONITORING WELL		CONIFEROUS TREE	DCM	DRY CLEAN MACHINE
TW	TEMPORARY WELL	—X—	WOOD FENCE	GUY	GUY WIRE
SO	SOIL SAMPLE LOCATION	—FO—	FIBER OPTIC		POWER POLE
SS	SUB-SLAB AIR SAMPLE	—G—	GAS LINE		STORM INLET
SG	SOIL GAS SAMPLE	—SAN—	SANITARY SEWER		HYDRANT
OA	OUTDOOR AIR SAMPLE	—SS—	STORM SEWER	GV	GAS VALVE
IAB	INDOOR AIR (BASEMENT)	—W—	WATER MAIN		UTILITY METER
IA1	INDOOR AIR (FIRST FLOOR)	—OH—	OVERHEAD UTILITY	WV	WATER VALVE
SSI	SOIL BORINGS*		PROPERTY LINES		STREET LIGHT
MH	MANHOLE				

*SSI = SUPERFUND SITE INSPECTION ACTIVITY

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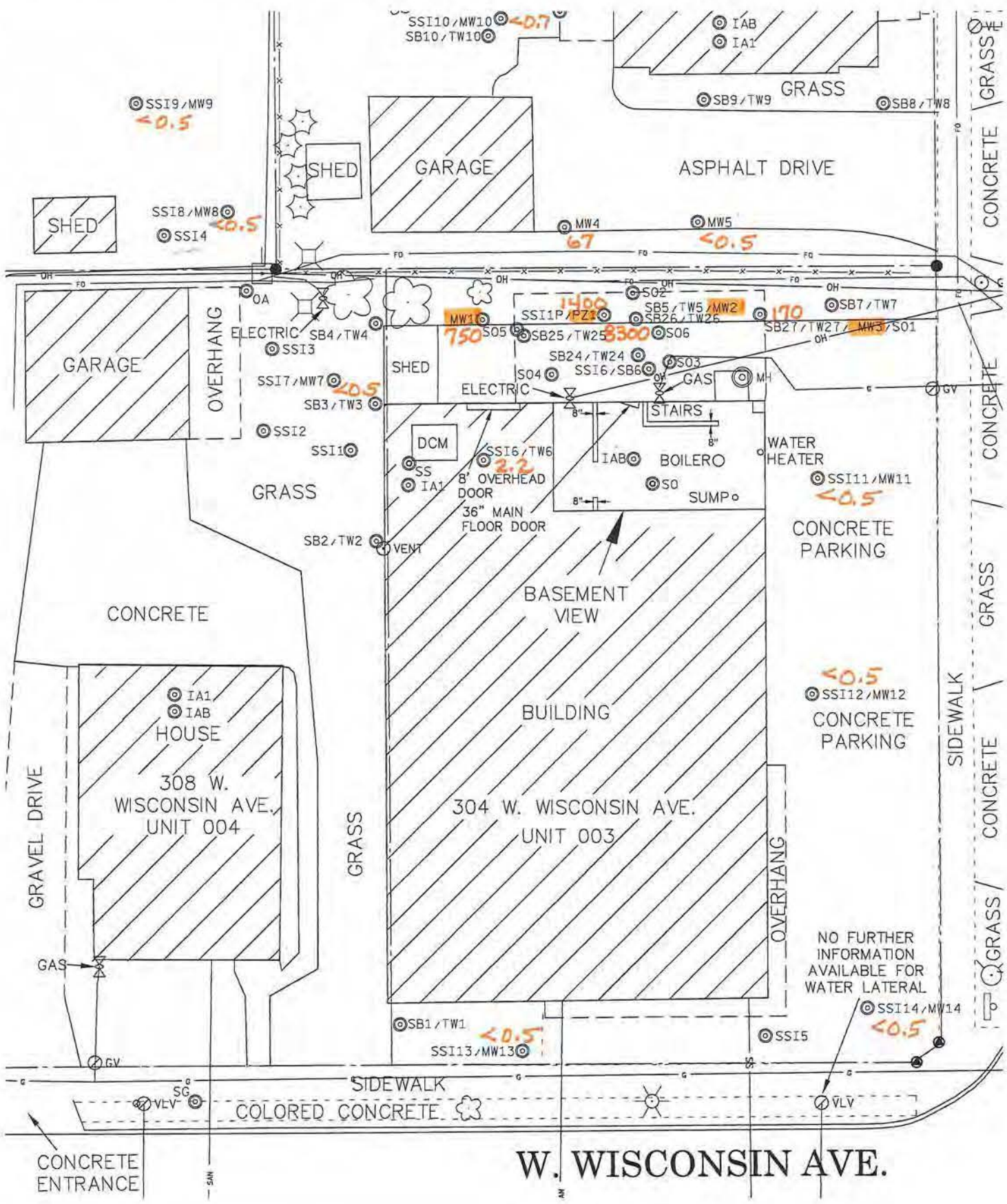
SSI1 - SSI5, SSI6/TW6 - SSI14/MW14, SSI1P/PZ1 - Sept. 2012 by DNR (soil and NR141 wells)

October 2012
GROUNDWATER RESULTS (µg/L)
cis DCE
EXCEEDANCE of NR 140 E.S.

NOTE:
PROPERTY LINES ARE BASED OFF OF LOCATED MONUMENTS AND PREVIOUS WORK IN THE AREA.



SCALE: 1"=20'	OMNI ASSOCIATES ONE SYSTEMS DRIVE PHONE (920)735-6900 APPLETON, WI 54914 FAX (920)830-6100	STERLING CLEANERS SITE DETAIL MAP (FORMER SO'S CLEANERS) 304 W. WISCONSIN AVENUE APPLETON, WI 54914	PROJECT MANAGER: BDW PROJECT ENGINEER: BDW DRAWN BY: BAW CHECKED BY: DATE: 6/04/2012
PROJECT NAME: S3298A12		BRRTS NO. 02-45-552133 CERLIS ID WIN 000510415	N
FIGURE NO.			

FIGURE 9

Figure 10

DETAIL "A"

LEGEND

●	1" IRON PIPE FOUND		TELEPHONE PEDESTAL	— —	EXCAVATION BOUNDARY
	3/4" REBAR FOUND		STREET SIGN	VLV	WATER SERVICE VALVE
	MAG NAIL FOUND		DECIDUOUS TREE		AIR CONDITIONER
MW	MONITORING WELL		CONIFEROUS TREE	DCM	DRY CLEAN MACHINE
TW	TEMPORARY WELL	X	WOOD FENCE	GUY	GUY WIRE
SO	SOIL SAMPLE LOCATION	FO	FIBER OPTIC		POWER POLE
SS	SUB-SLAB AIR SAMPLE	G	GAS LINE		STORM INLET
SG	SOIL GAS SAMPLE	SAN	SANITARY SEWER		HYDRANT
OA	OUTDOOR AIR SAMPLE	SS	STORM SEWER	GV	GAS VALVE
IAB	INDOOR AIR (BASEMENT)	W	WATER MAIN		UTILITY METER
IA1	INDOOR AIR (FIRST FLOOR)	OH	OVERHEAD UTILITY	WV	WATER VALVE
SSI	SOIL BORINGS*		PROPERTY LINES		STREET LIGHT
MH	MANHOLE				

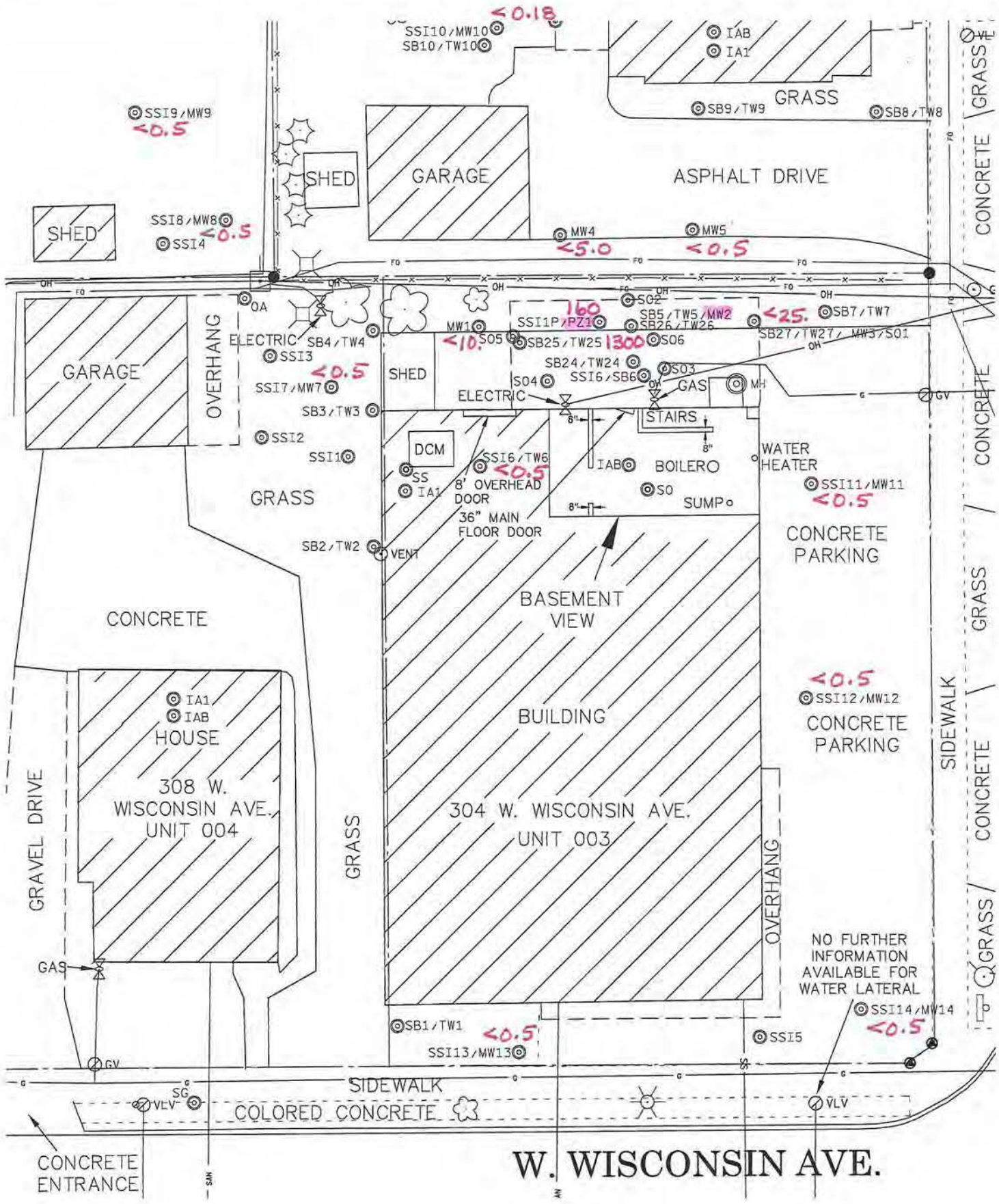
*SSI = SUPERFUND SITE INSPECTION ACTIVITY

SAMPLE LOCATIONS BY INSTALLATION DATE

SB1/TW1 - SB10/TW10 - March 2010 by EPA (pre-excavation soil and temporary wells)
SO1 - SO6 - Sept. 2011 by EPA (excavation soil confirmation samples)
SB24/TW24 - SB27/TW27 - May 2011 by EPA (post-remediation soil and temporary wells)
MW1 - MW5 - July 2011 by DNR (post-remediation soil and NR 141 wells)
SSI1 - SSI5, SSI6/TW6 - SSI14/MW14, SSI1P/PZ1 - Sept. 2012 by DNR (soil and NR141 wells)

NOTE:
PROPERTY LINES ARE BASED OFF OF LOCATED MONUMENTS AND PREVIOUS WORK IN THE AREA.

October 2012
GROUNDWATER RESULTS (ug/L)
VINYL CHLORIDE
Exceedance of NR140 E.S.



SCALE: 1"=20'	OMNI ASSOCIATES ONE SYSTEMS DRIVE PHONE (920)735-6900 APPLETON, WI 54914 FAX (920)830-6100	STERLING CLEANERS SITE DETAIL MAP (FORMER SO'S CLEANERS) 304 W. WISCONSIN AVENUE APPLETON, WI 54914	PROJECT MANAGER: BDW PROJECT ENGINEER: BDW DRAWN BY: BAW CHECKED BY: DATE: 6/04/2012
PROJECT NAME: S3298A12		BRRTS NO. 02-45-552133 CERLIS ID WIN 000510415	N
FIGURE NO.			

FIGURE 10

Figure 11

DETAIL "A"

GROUNDWATER ELEVATIONS
10-30-2012

LEGEND

●	1" IRON PIPE FOUND		TELEPHONE PEDESTAL	— —	EXCAVATION BOUNDARY
	3/4" REBAR FOUND		STREET SIGN	VLV	WATER SERVICE VALVE
	MAG NAIL FOUND		DECIDUOUS TREE		AIR CONDITIONER
MW	MONITORING WELL		CONIFEROUS TREE	DCM	DRY CLEAN MACHINE
TW	TEMPORARY WELL	—X—	WOOD FENCE	GUY	GUY WIRE
SO	SOIL SAMPLE LOCATION	—FO—	FIBER OPTIC		POWER POLE
SS	SUB-SLAB AIR SAMPLE	—G—	GAS LINE		STORM INLET
SG	SOIL GAS SAMPLE	—SAN—	SANITARY SEWER		HYDRANT
OA	OUTDOOR AIR SAMPLE	—SS—	STORM SEWER	GV	GAS VALVE
IAB	INDOOR AIR (BASEMENT)	—W—	WATER MAIN		UTILITY METER
IA1	INDOOR AIR (FIRST FLOOR)	—OH—	OVERHEAD UTILITY	WV	WATER VALVE
SSI	SOIL BORINGS*		PROPERTY LINES		STREET LIGHT
MH	MANHOLE				

*SSI = SUPERFUND SITE INSPECTION ACTIVITY

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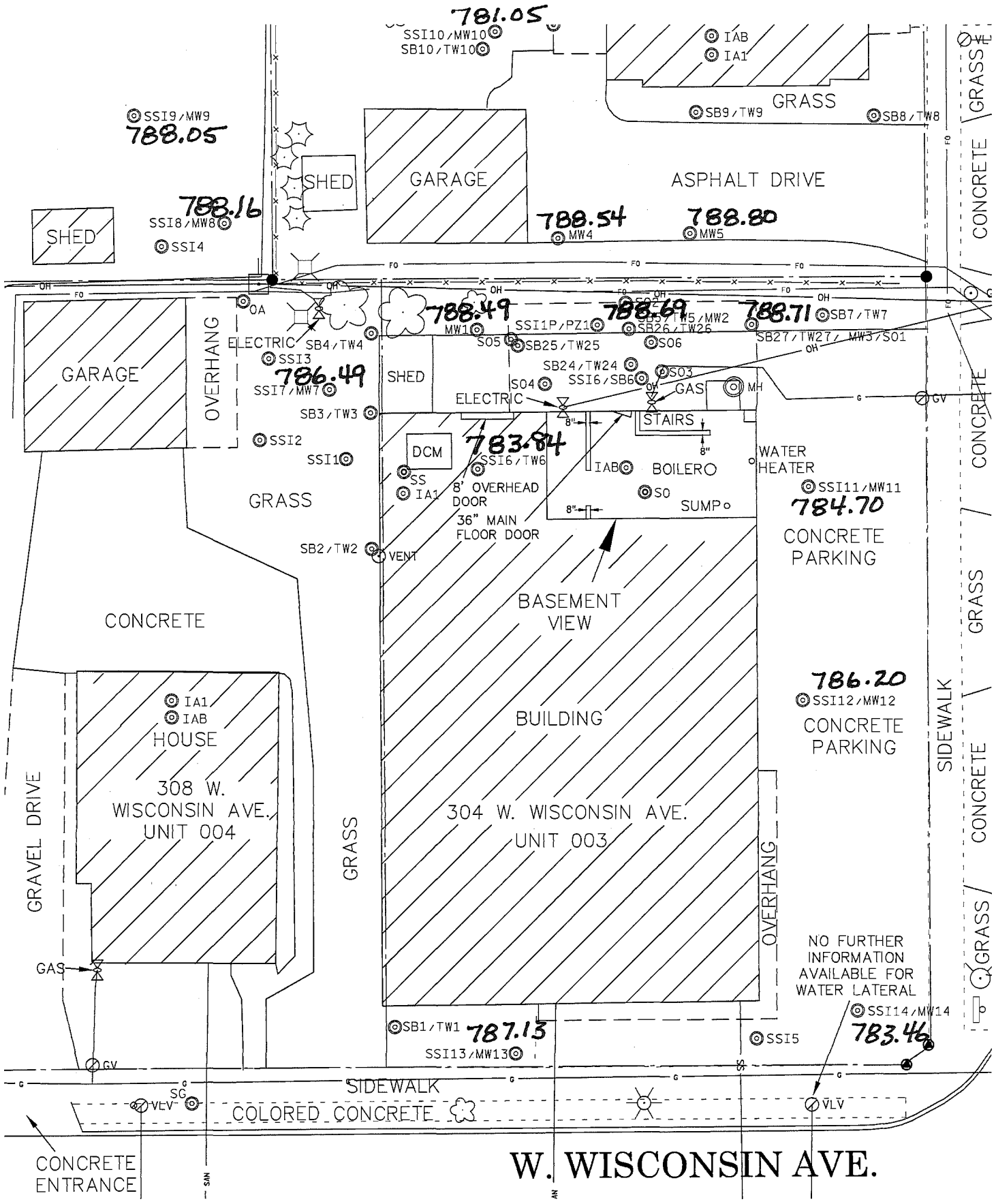
SB24/TW24 - SB27/TW27 - May 2011 by EPA (post-remediation soil and temporary wells)
MW1 - MW5 - July 2011 by DNR (post-remediation soil and NR 141 wells)
SSI1 - SSI5, SSI6/TW6 - SSI14/MW14, SSI1P/PZ1 - Sept. 2012 by DNR (soil and NR141 wells)

NOTE:
PROPERTY LINES ARE BASED OFF OF LOCATED MONUMENTS AND PREVIOUS WORK IN THE AREA.



SCALE: 1"=20'	OMNI ASSOCIATES ONE SYSTEMS DRIVE PHONE (920)735-6900 APPLETON, WI 54914 FAX (920)830-6100	STERLING CLEANERS SITE DETAIL MAP (FORMER SO'S CLEANERS) 304 W. WISCONSIN AVENUE APPLETON, WI 54914	PROJECT MANAGER: BDW PROJECT ENGINEER: BDW DRAWN BY: BAW CHECKED BY: DATE: 6/04/2012
PROJECT NAME: S3298A12		BRRTS NO. 02-45-552133 CERLIS ID WIN 000510415	N
FIGURE NO.			

FIGURE 11

TABLE 1
SUMMARY SOIL RESULTS for
September 25, 2012 WDNR Sampling Event

BORING # / DEPTH (FT)	SSI-1a 2.5 - 4.5 clay	SSI-2a 2.5 - 4.5 clay	SSI-3a 2.5 - 4.5 clay	SSI-4a 2.5 - 4.5 clay	SSI-5a 2.5 - 4.5 clay	SSI-6a 2.5 - 4.5 clay	SSI-7a 2.5 - 4.5 clay	SSI-8a 2.5 - 4.5 clay	SSI-9a 2.5 - 4.5 clay	SSI-10a 2.5 - 4.5 clay	SSI-11a 2.5 - 4.5 clay	SSI-12a 2.5 - 4.5 clay	SSI-13a 2.5 - 4.5 clay	SSI-14a 2.5 - 4.5 clay
PCE	0.84	0.46	0.36	<5.4	**9.8**	**120**	0.2 J	<4.2	<5.3	0.17 J	2.2 J	0.51 J	0.57 J	0.29 J
TCE	<5.3	<4.6	<4.4	<5.4	<5.7	**3.8 J**	0.22 J	<4.2	<5.3	<4.7	<5.0	<4.4	<4.2	<6.0
cis 1,2 DCE	<5.3	<4.6	<4.4	<5.4	<5.7	<5.4	<4.6	<4.2	<5.3	<4.7	<5.0	<4.4	<4.2	<6.0
trans1,2 DCE	<5.3	<4.6	<4.4	<5.4	<5.7	<5.4	<4.6	<4.2	<5.3	<4.7	<5.0	<4.4	<4.2	<6.0
VC	<5.3	<4.6	<4.4	<5.4	<5.7	<5.4	<4.6	<4.2	<5.3	<4.7	<5.0	<4.4	<4.2	<6.0

BORING # / DEPTH (FT)	SSI-1b 7.5 - 9.5 clay	SSI-2b 7.5 - 9.5 clay	SSI-3b 7.5 - 9.5 clay	SSI-4b 7.5 - 9.5 clay	SSI-5b 7.5 - 9.5 clay	SSI-6b 7.5 - 9.5 clay	SSI-7b 7.5 - 9.5 clay	SSI-8b 7.5 - 9.5 clay	SSI-9b 7.5 - 9.5 clay	SSI-10b 7.5 - 9.5 clay	SSI-11b 7.5 - 9.5 clay	SSI-12b 7.5 - 9.5 clay	SSI-13b 7.5 - 9.5 clay	SSI-14b 7.5 - 9.5 clay	SSIP-1b (duplicate) 12.5 - 14.5 clay	SSIP-1c 22.5-24.5 clay
PCE	<4.7	<4.4	<4.6	<4.3	<4.4	**170**	<4.9	<4.4	<4.5	<5.1	<5.1	<4.3	**57**	<4.3	**51000 J**	**30,000**
TCE	<4.7	<4.4	<4.6	<4.3	<4.4	**7.0**	<4.9	<4.4	<4.5	<5.1	<5.1	<4.3	1.1 J	<4.3	**8100 J**	**92 J**
cis 1,2 DCE	<4.7	<4.4	<4.6	<4.3	<4.4	4.2 J	<4.9	<4.4	<4.5	<5.1	<5.1	<4.3	<4.8	<4.3	**220 J**	**<1700**
trans1,2 DCE	<4.7	<4.4	<4.6	<4.3	<4.4	<4.5	<4.9	<4.4	<4.5	<5.1	<5.1	<4.3	<4.8	<4.3	8.8	**<1700**
VC	<4.7	<4.4	<4.6	<4.3	<4.4	<4.5	<4.9	<4.4	<4.5	<5.1	<5.1	<4.3	<4.8	<4.3	**12**	**<1700**

Results are in microgram per kilogram (ug/kg)

BOLD results are exceedances of the WI NR 720 RCLs.

	WI Residual Contaminant Level (RCL) (ug/kg)	
	Non Industrial Direct Contact	Soil to GW
Tetrachloroethene (PCE)	30,700	4.5
Trichloroethene (TCE)	644	3.6
cis 1,2 Dichloroethene (cis 1,2 DCE)	156,000	41.2
trans 1,2 Dichloroethene (trans 1,2 DCE)	211,000	58.8
Vinyl Chloride (VC)	67	0.1

TABLE 2
GROUNDWATER RESULTS for
October 30, 2012 WDNR Sampling Event

WELL# →	SUMP	MW-1	MW-2	MW-3	MW-4	MW-5	TW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	PZ-1
DATE Sampled →	10-30-2012	10-30-2012	10-30-2012	10-30-2012	10-30-2012	10-30-2012	10-30-2012	10-30-2012	10-30-2012	10-30-2012	12-18-2012	10-30-2012	10-30-2012	10-30-2012	10-30-2012	10-30-2012
PCE	**45**	**99**	**1000**	**1400**	**270**	**29**	**10**	<0.5	<0.5	<0.5	<0.44	<0.5	<0.5	2.3	<0.5	<20
TCE	**6**	**50**	**210**	**85**	**83**	<0.5	1.1	<0.5	<0.5	<0.5	<0.47	<0.5	<0.5	<0.5	<0.5	<20
cis 1,2 DCE	**120**	**750**	**8300**	**170**	67	<0.5	2.2	<0.5	<0.5	<0.5	<0.74	<0.5	<0.5	<0.5	<0.5	**1400**
trans 1,2 DCE	3.3	35	65	<25.0	1.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.79	<0.5	<0.5	<0.5	<0.5	25
VC	**30**	**<10.0**	**1300**	**<25.0**	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.18	<0.5	<0.5	<0.5	<0.5	**160**
Dilution Factor	4.0	20.0	200.0	50.0	10.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	40.0

All MWs are screened from 3' to 13' depth. The piezometer is screened from 22.5' to 24.5' depth.

Results in micrograms per liter (ug/L)

Bold indicates an exceedance of the Wisconsin NR 140 Enforcement Standard (ES)

	WI ES
Tetrachloroethene (PCE)	5
Trichloroethene (TCE)	5
cis 1,2 Dichloroethene (cis 1,2 DCE)	70
trans 1,2 Dichloroethene (trans 1,2 DCE)	100
Vinyl Chloride (VC)	0.2

TABLE 3
Monitoring Well Groundwater Data

Sterling Dry Cleaners, 304 W Wisconsin Ave, Appleton, WI
WDNR BRRTS #02-45-552133
Historical Groundwater data (µg/L) from Monitoring Wells

Well Name	Screen Interval	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC	1,1,1-TCA	1,1-DCA	chloromethane
		ES	5.00	5.00	70.00	100.00	0.20	200.00	850.00	30.00
		PAL	0.50	0.50	7.00	20.00	0.02	40.00	85.00	3.00
MW-1	3'-13'	8/31/2011	**217**	**126**	**6290**	ND	**313**	ND	ND	ND
		2/23/2012	**73.9**	**166**	**5580**	**103**	**723**	<45.0	<37.5	<12.0
		8/29/2012	**142**	**96.4**	**915**	*68*	**164**	<9.0	<7.5	<2.4
		10/30/2012	**99**	**50**	**750**	*35*	**<10.0**	<10.0	<10.0	<10.0
MW-2	3'-13'	8/31/2011	**1500**	**1920**	**17,000**	ND	**425**	ND	ND	ND
		2/23/2012	**419**	**109 J**	**18,400**	<178.0	**2330**	<180.0	<150.0	<48.0
		8/29/2012	**599**	**<96.0**	**7960**	<178.0	**1360**	<180.0	<150.0	<48.0
		10/30/2012	**1000**	**210**	**8300**	*65*	**1300**	<100.0	<100.0	<100.0
MW-3	3'-13'	8/31/2011	**434**	**42**	**309**	ND	**1.3 "J"**	ND	ND	ND
		2/23/2012	**414**	**32.5**	**189**	5.7	**<0.45**	<2.2	<1.9	<0.60
		8/29/2012	**782**	**73.7**	**332**	12.5	**4.6 "J"**	<9	<7.5	<2.4
		10/30/2012	**1400**	**85**	**170**	<25.0	**<25.0**	<25.0	<25.0	<25.0
MW-4	3'-13'	8/31/2011	**88.6**	**33.1**	**90.8**	2.1	ND	ND	ND	ND
		2/23/2012	**282**	**91.9**	**488**	7.6	<0.90	<4.5	<3.8	<1.2
		8/29/2012	**277**	**121**	**213**	8.3	<0.9	<4.5	<3.8	<1.2
		10/30/2012	**270**	**83**	67	1.9	<5.0	<5.0	<5.0	<5.0
MW-5	3'-13'	8/31/2011	**8.1**	ND	0.94	8	ND	2.3	1.4	0.33 "J"
		2/23/2012	**12.9**	<0.48	<0.83	<0.89	<0.18	1.7	0.87 J	<0.24
		8/29/2012	**42**	*1.6*	0.91 "J"	<0.89	<0.18	2.8	1.3 "J"	0.25 "J"
		10/30/2012	**29**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TW-6	3'-13'	10/30/2012	**10**	*1.1*	2.2	<0.5	<0.5	<0.5	<0.5	<0.5
MW-7	3'-13'	10/30/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-8	3'-13'	10/30/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-9	3'-13'	10/30/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-10	3'-13'	12/18/2012	<0.44	<0.47	<0.74	<0.79	<0.18	<0.85	<0.98	<1.9
MW-11	3'-13'	10/30/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-12	3'-13'	10/30/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-13	3'-13'	10/30/2012	*2.3*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-14	3'-13'	10/30/2012	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PZ-1	20'-25'	10/30/2012	<20	<20	**1400**	*25*	**160**	<20.0	<20.0	<20.0

Legend:

µg/L: micrograms per liter
ES: Enforcement Standard, ch. NR 140, Wis. Adm. Code
PAL: Preventative Action Limit, ch. NR 140, Wis. Adm. Code
PCE: Tetrachloroethene
TCE: Trichloroethene
DCE: Dichloroethene
VC: Vinyl Chloride
DCA: Dichloroethane
TCA: Trichloroethane

BOLD: ES exceedance
Italics: PAL exceedance
ND: No detect - below the limit of detection
"J": J flagged by lab as detected between limit of detection and limit of quantitation

STERLING DRY CLEANERS **TABLE 4** WELL SPECIFIC FIELD DATA

Sampling Dates: 10/30/2012, 12/18/2012
Weather Conditions: Cloudy, windy, 30 - 40 F
Person(s) Sampling: Dave Fries
Sampling Equipment: Enviroline disposable bailers, Solonist 101 water level meter, Peristaltic pump - micro purge, DO probe, pH/Conductivity (Oakton pH/Con. 10 meter).

*MW10 sampled on 12/18/12, due to an initial lack of water

Notes: MW10 was dry. TW6 did not yeild enough water to obtain temperature, conductivity, and pH readings.

Well Name	MW1	MW2	MW3	MW4	MW5	TW6	MW7	MW8	MW9	MW10*	MW11	MW12	MW13	MW14	PZ-1
Top of PVC Casing Elevation (MSL)	792.23	792.21	792.03	792.15	792.05	792.15	792.15	792.67	792.64	791.75	792.03	792.11	791.88	791.91	791.76
Ground Surface Elevation (MSL)						792.35	792.50	793.06	792.98	792.08	792.57	792.50	792.49	792.38	792.11
Depth to Bottom of Well (ft)							13.05	13.41	13.50	13.39	13.73	13.20	13.26	12.95	24.82
Screen Top (MSL)	802.23	802.21	802.03	802.15	802.05	802.15	789.10	789.26	789.14	788.36	788.30	788.91	788.62	788.96	771.94
Screen Bottom (MSL)	792.23	792.21	792.03	792.15	792.05	792.15	779.10	779.26	779.14	778.36	778.30	778.91	778.62	778.96	766.94
Screen Length (ft)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	5
Water Elevation (MSL)	788.49	788.69	788.71	788.54	788.80	783.84	786.49	788.16	788.05	781.05	784.70	786.20	787.13	783.46	777.66
Water Elevation (ft from ground surface)	-788.49	-788.69	-788.71	-788.54	-788.80	8.51	6.01	4.90	4.93	11.03	7.87	6.30	5.36	8.92	14.45
Measured Depth to Water (ft)	3.74	3.52	3.32	3.61	3.25	8.31	5.66	4.51	4.59	10.70	7.33	5.91	4.75	8.45	14.10
Micro Purge Pump Setting	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.5	2.0	2.0	2.0	2.0	2.0
Time Purging Begun	2:03	2:39	1:04	12:14	1:36	12:48	9:42	9:10	8:46	12:58	11:34	11:04	10:09	10:36	3:06
Time Purging Completed	2:19	2:56	1:23	12:31	1:51	12:50	9:56	9:25	9:02	1:13	11:50	11:20	10:24	10:53	3:28
Amount Purged (gal)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.50	2.00	2.00	2.00	2.00	2.00
Purged Dry? (Y/N)	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No
Temperature (°C)	14.4	15.0	15.2	14.7	15.6	-	13.0	13.3	14.4	10.8	17.3	16.8	15.5	15.7	13.9
Conductivity (µS)	2.45 m	6.62 m	1586	1033	1227	-	1070	1552	1628	2.7 m	1956	1860	726	4.56 m	1561
pH (std. units)	6.95	6.31	7.30	7.08	7.24	-	7.55	7.27	7.08	7.14	7.49	7.48	7.59	7.22	7.50
DO Reading (mg/L)															
ORP (mV)															
Ferrous Iron (mg/L)															
Dissolved Oxygen (mg/L)	0.55	0.45	2.44	3.14	1.44	-	1.13	3.04	1.68	2.25	2.34	2.23	2.79	1.79	0.46
ORP (mV)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ferrous Iron (mg/L)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate (mg/L)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Color (Y/N)	No	gray	No	No	No	brown	No	No	No	No	No	No	No	No	gray
Odor (Y/N)	No	sewer	No	No	No	No	No	No	No	No	No	No	No	No	sewer
Turbidity (Y/N)	No	slight	No	No	No	silty	No	No	No	No	No	No	No	No	slight
Sampling Parameters	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs	VOCs
Time Sample Withdrawn	2:19	2:56	1:23	12:32	1:52	12:50	9:56	9:26	9:03	1:14	11:51	11:21	10:24	10:54	3:29
Sample field filtered? (Y/N)	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

REFERENCE 1

Weston Solutions, Inc.
20 North Wacker Drive, Suite 1210
Chicago, IL 60606-2901
312-424-3300 • Fax 312-424-3330
www.westonsolutions.com

December 6, 2010

151

Ms. Kathy Clayton
On-Scene Coordinator
United States Environmental Protection Agency, Region V
C/o Wisconsin Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54307-0448

Subject: **Sterling Cleaners Site Removal Action**
Appleton, Outagamie County, Wisconsin
Technical Direction Document No.: S05-0001-1008-015
Document Control No.: 1177-2A-AIDZ
Identification No.: B5VH
Work Order No.: 20405.012.001.1177.00

WDNR BRRTS # 02-45-552133

Dear Ms. Clayton:

The United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START) to provide oversight of removal activities at the Sterling Cleaners Site in Appleton, Outagamie County, Wisconsin (the Site). Under Technical Direction Document (TDD) No. S05-0001-1008-015, U.S. EPA tasked WESTON START to

- Perform general project oversight;
- Collect excavation soil sidewall samples;
- Conduct perimeter air monitoring activities;
- Collect sub-slab vapor probe, indoor, and ambient air samples;
- Conduct a vacuum check on the vapor intrusion abatement system;
- Collect written and photographic documentation; and
- Track disposition of the wastes generated during the removal activities.

From September 22 through 30, 2010, U.S. EPA, WESTON START, and the Emergency and Rapid Response Services (ERRS) contractor, Environmental Restoration, LLC (ER), conducted removal activities at the Site. **Table 1** in **Attachment A** lists the agencies and organizations involved in the response.

This letter report discusses the Site description, Site background, removal activities, disposition of waste, the effectiveness of removal activities, difficulties encountered, and conclusions. In addition, this letter report has five attachments. **Attachment A** provides the tables for this letter report. **Attachment B** provides the figures. **Attachment C** provides analytical results for

TABLE 1
Water Level Data - March 2010
Sterling Cleaners Site
Appleton, WI
May 2010

Location	Well Depth*	Stickup Height**	Depth to Water	
			Round 1* (After Installation)	Round 2* (Before Sampling)
TW-01	9.8	0.3	5.11	4.92
TW-02	9.4	0.4	4.25	4.20
TW-03	9.7	0.1	9.00	6.07
TW-04	9.7	0.6	3.90	3.57
TW-05	9.7	0.3	3.61	3.34
TW-06	9.7	0.1	8.31	8.45
TW-07	9.7	0.2	2.82	2.77
TW-08	9.7	0.2	4.34	4.15
TW-09	9.7	0.6	4.21	4.15
TW-10	9.7	0.3	3.90	2.60

Round 1 conducted on 03/09/2010 at 1600 hours
Round 2 conducted on 03/10/2010 at 0800 hours

* - Measured in feet below the top of well casing
** - Measured in feet above the ground surface

TABLE 2.1
Sub-slab Soil Gas, Indoor Air and Ambient Air SUMMA® Canister Results - March 2010
Sterling Cleaners Site
Appleton, WI
May 2010
(All results in $\mu g/m^3$)

Sample Number	Project Action Limits*	0-068-0005	0-068-0006	0-068-0007	0-068-0009	0-068-0010	0-068-0011	0-068-0012	0-068-0013
Location		**Unit003**	**Unit003**	**Unit003**	**Unit002**	**Unit002**	**Unit002**	**Unit002**	**Unit004**
Sub Location		IA1 (Basement)	SS2 Subslab ~~(First Floor)~~ on First floor	IA2 (First Floor)	IA1 (Basement)	IA2 (First Floor)	IA2_COL (First Floor)	AMB	SG1
Matrix		Air	Soil Gas	Air	Air	Air	Air	Air	Soil Gas
Date	Air / Soil Gas	3/10/2010	3/10/2010	3/10/2010	3/10/2010	3/10/2010	3/10/2010	3/10/2010	3/10/2010
1,1,1-Trichloroethane	2200 / 22000	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	1.5 / 15	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	500 / 5000	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	200 / 2000	0.138	ND	0.432	ND	ND	ND	ND	ND
Carbon Tetrachloride	1.6 / 16	0.501	0.433	0.613	0.632	0.461	0.445	0.415	0.231
cis-1,2-Dichloroethene	35 / 350	3.85	0.259	0.908	0.326	0.161	0.171	ND	ND
Methylene Chloride	52 / 520	0.736 J	0.49 J	1.16 J	0.393 J	0.559 J	0.486 J	1.04 J	0.0907 J
Tetrachloroethene	8.1 / 81	**37400**	**2740**	**313000**	**24.1**	**15.1**	**15.7**	7.05	4.17
trans-1,2-Dichloroethene	70 / 700	ND	ND	0.114	ND	ND	ND	ND	ND
Trichloroethene	0.22 / 2.2	**3.32**	**19.3**	**4.45**	**1.28**	**0.779**	**0.838**	0.11	ND
Vinyl Chloride	2.8 / 28	ND	ND	ND	ND	ND	ND	ND	ND

$\mu g/m^3$ - Micrograms per cubic meter

* - Project Action Limits from OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)

"bold text" - Value exceeds project action limit

ND - Not detected above the reporting limit

J - Value is estimated

SS - Sub-slab

SG- Soil gas

AMB - Ambient

IA - Indoor air

COL - Collocated

Unit 003 = 304 W. WISCONSIN
Unit 002 = 1315 N. SUPERIOR
Unit 004 = 308 W. WISCONSIN

TABLE 2.2
Sub-slab Soil Gas, Indoor Air and Ambient Air SUMMA® Canister Results - March 2010
Sterling Cleaners Site
Appleton, WI
May 2010
(All results in ppbv)

Sample Number	Project Action Limits*	0-068-0005	0-068-0006	0-068-0007	0-068-0009	0-068-0010	0-068-0011	0-068-0012	0-068-0013
Location		**Unit003**	**Unit003**	**Unit003**	**Unit002**	**Unit002**	**Unit002**	**Unit002**	**Unit004**
Sub Location		IA1 (Basement)	SS2 (First Floor)	IA2 (First Floor)	IA1 (Basement)	IA2 (First Floor)	IA2_COL (First Floor)	AMB	SG1
Matrix		Air	Soil Gas	Air	Air	Air	Air	Air	Soil Gas
Date	Air / Soil Gas	3/10/2010	3/10/2010	3/10/2010	3/10/2010	3/10/2010	3/10/2010	3/10/2010	3/10/2010
1,1,1-Trichloroethane	400 / 4000	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.28 / 2.8	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	120 / 1200	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	50 / 500	0.0348	ND	0.109	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.26 / 2.6	0.0797	0.0688	0.0975	0.101	0.0733	0.0708	0.066	0.0367
cis-1,2-Dichloroethene	8.8 / 88	0.972	0.0654	0.229	0.0822	0.0405	0.0431	ND	ND
Methylene Chloride	15 / 150	0.212 J	0.141 J	0.335 J	0.113 J	0.161 J	0.14 J	0.3 J	0.0261 J
Tetrachloroethene	1.2 / 12	**5510**	**404**	**46100**	**3.56**	**2.23**	**2.32**	1.04	0.615
trans-1,2-Dichloroethene	18 / 180	ND	ND	0.0288	ND	ND	ND	ND	ND
Trichloroethene	0.041 / 0.41	**0.617**	**3.59**	**0.829**	**0.238**	**0.145**	**0.156**	0.0204	ND
Vinyl Chloride	1.1 / 11	ND	ND	ND	ND	ND	ND	ND	ND

ppbv - Parts per billion by volume

* - Project Action Limits from OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)

"bold text" - Value exceeds project action limit

ND - Not detected above the reporting limit

J - Value is estimated

SS - Sub-slab

SG- Soil gas

AMB - Ambient

IA - Indoor air

COL - Collocated

TABLE 3
Soil Sample Results - March 2010
Sterling Cleaners Site
Appleton, WI
May 2010
(All results in µg/kg)

Sample Number	Location	Date	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene
0-068-1000	SS01(0.5-1)	3/8/2010	6.91	ND	ND
0-068-1001	SS01(2.5-3)	3/8/2010	8.66	ND	ND
0-068-1002	SB01(0.5-1)	3/9/2010	ND	3.04 J	ND
0-068-1003	SB01(4-4.5)	3/9/2010	ND	ND	ND
0-068-1004	SB02(0.5-1)	3/9/2010	1.42 J	24.2	1.53 J
0-068-1005	SB02(5.5-6)	3/9/2010	ND	ND	ND
0-068-1006	SB02(9.5-10)	3/9/2010	ND	ND	ND
0-068-1007	SB03(0-0.5)	3/9/2010	ND	21.5	ND
0-068-1008	SB03(0.5-1)	3/9/2010	3.78 J	18.7	2.26 J
0-068-1009	SB03(1.5-2)	3/9/2010	1.96 J	14.5	2.68 J
0-068-1010	SB03(6.5-7)	3/9/2010	ND	ND	1.48 J
0-068-1011	SB04(0.5-1)	3/9/2010	ND	83.1 J	ND
0-068-1012	SB04(4-4.5)	3/9/2010	7.68	2070	35.1
0-068-1013	SB04(7-7.5)	3/9/2010	30	1080	51.3
0-068-1014	SB05(2-2.5)	3/9/2010	99.1 J	97400	453 J
0-068-1015	SB05(4.5-5)	3/9/2010	1120 J	463000	3370
0-068-1016	SB05(6-6.5)	3/9/2010	7180 J	228000 J	155000 J
0-068-1017	SB05(9.5-10)	3/9/2010	ND	113000	426 J
0-068-1018	SB06(1.5-2)	3/9/2010	260 J	24800	884
0-068-1019	SB06(5.5-6)	3/9/2010	1000	1160	220
0-068-1020	SB06(9-9.5)	3/9/2010	89.1 J	2830	804 J
0-068-1021	SB07(1.5-2)	3/9/2010	7.72	27.3 J	3.41 J
0-068-1022	SB07(5.5-6)	3/9/2010	ND	ND	ND
0-068-1023	SB07(9.5-10)	3/9/2010	ND	2.27 J	ND
0-068-1024	SB08(1.5-2)	3/9/2010	ND	ND	ND
0-068-1025	SB08(7-7.5)	3/9/2010	ND	ND	ND
0-068-1026	SB09(1.5-2)	3/9/2010	ND	2.7 J	ND
0-068-1027	SB09(9.5-10)	3/9/2010	1.47 J	ND	ND
0-068-1028	SB10(2.5-3)	3/9/2010	ND	1.89 J	ND
0-068-1029	SB10(9.5-10)	3/9/2010	2.01 J	4.09 J	1.95 J
0-068-1030	FD-01 (SB01(4-4.5))	3/9/2010	ND	ND	ND
0-068-1031	FD-02 (SB06(5.5-6))	3/9/2010	2040	996	252

µg/kg - Micrograms per kilogram

ND - Not detected above the reporting limit

J - Value is estimated

SS - Sub-slab

SB - Soil boring

FD - Field duplicate

TABLE 4
Ground Water Sample Results - March 2010
Sterling Cleaners Site
Appleton, WI
May 2010
(All results in µg/L)

Sample Number	Location	Date	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene
0-068-1033	TW-05A	3/9/2010	26400	35900	19100
0-068-1034	TW-06A	3/9/2010	7280	9560	1660
0-068-1035	TW-10	3/10/2010	ND	3.84 J	ND
0-068-1036	TW-09	3/10/2010	17.6	57.9	11.9
0-068-1037	TW-08	3/10/2010	1.67 J	12.4	2.25 J
0-068-1038	TW-07	3/10/2010	2.64 J	20.3	3.31 J
0-068-1039	TW-06B	3/10/2010	7200	9090	1840
0-068-1040	TW-05B	3/10/2010	25600	36600	16600
0-068-1041	TW-04	3/10/2010	150	356	134 J
0-068-1042	TW-03	3/10/2010	ND	1.98 J	ND
0-068-1043	TW-02	3/10/2010	ND	2.07 J	ND
0-068-1044	TW-01	3/10/2010	ND	ND	ND
0-068-1045	FD-03 (TW-05B)	3/10/2010	26900	32500	17400

µg/L - Micrograms per liter

ND - Not detected

J - Value is estimated

TW - Temporary well

FD - Field duplicate

REFERENCE 2

Lockheed Martin
Scientific Engineering Response and Analytical Services
2890 Woodbridge Ave, Building 209
Edison, NJ 08837-3679
Telephone: 732-321-4200 Facsimile: 732-494-4021

LOCKHEED MARTIN

DATE: August 3, 2011

TO: Gary Newhart, U.S. EPA/ERT

THROUGH: Dennis Miller, SERAS Program Manager For Dennis Miller

FROM: Michael Cartwright, SERAS Task Leader

received 8/15/11 (43)

SUBJECT: STERLING CLEANERS SITE, APPLETON, WISCONSIN
MAY 2011 INDOOR AIR, SOIL AND GROUND WATER SAMPLING
WORK ASSIGNMENT #SER00068 – TRIP REPORT

BACKGROUND

The Sterling Cleaners Site (Site) is located at West 304 Wisconsin Avenue in Appleton, Outagamie County, Wisconsin (WI). The Site, which has been operated as a dry cleaning facility since 1977, is located in a mixed commercial and residential area. The Wisconsin Department of Natural Resources (WDNR) was notified of a tetrachloroethene (PCE) release at the Site in 1999. Analysis of the spill area indicated ongoing releases of PCE outside the facility. WDNR also discovered that the previous operator of Sterling Cleaners, So's Custom Taylors & Dry Cleaning, had a fire in the building in the late 1990s. WDNR suspects additional PCE was released during the fire suppression efforts.

In August 2008, the current owner of the facility provided WDNR with a Preliminary Soil and Groundwater Investigation that confirmed previously suspected PCE contamination at the Site. However, the environmental studies conducted by the property owners were limited. The current property owner is unable to finance the necessary additional studies to determine the extent of chlorinated solvent contamination at the Site and in the surrounding areas. Consequently, WDNR has requested assistance from the Environmental Protection Agency (EPA) to determine the extent of soil and ground water contamination resulting from historic PCE releases. WDNR has also asked for EPA assistance determining whether sub-surface vapors are impacting neighboring residences.

At the request of the EPA/Environmental Response Team (ERT), Scientific, Engineering, Response and Analytical Services (SERAS) personnel conducted a study to evaluate potential soil, ground water and indoor air contamination at the Site.

OBSERVATIONS AND ACTIVITIES

Mobilizations

From March 7 to 11, 2010, SERAS personnel traveled to the Site to evaluate potential soil, ground water and indoor air contamination. Sub-slab soil gas wells were installed within the interior of one commercial building and one residence, and near the exterior of an additional residence. A total of two sub-slab soil gas, five indoor air and two ambient air samples were collected for EPA Toxic Organic (TO-15) method volatile organic compound (VOC) analysis. Also during this mobilization, seven test boreholes were advanced on the Site property; three test boreholes were advanced on an adjacent residential property; and one soil core was advanced below the Sterling Cleaners basement slab. A total of 32 soil samples were collected from these locations for VOC analysis. In addition, temporary ground water monitor wells were installed in the 10 test boreholes, and a total of 13 ground water samples were collected for VOC analysis.

REFERENCE 3

SUPERFUND PRELIMINARY ASSESSMENT

STERLING DRY CLEANERS
City of Appleton, Wisconsin
CERCLIS ID WIN #000510415

Prepared by:
Wisconsin Department of Natural Resources
Northeast Region

September 2012

Prepared by: Date: September 10, 2012

Kathleen M. Sylvester, Hydrogeologist
Oshkosh Service Center
Wisconsin Department of Natural Resources

Reviewed by: Date: September 10, 2012

Annette Weissbach, Hydrogeologist
WDNR Site Assessment Team
Northeast Region Office – Green Bay

Approved by: Date: 9/11/12

Patrick Hamblin
NPL Coordinator Region 5
Division of Superfund
U.S. Environmental Protection Agency

REFERENCE 4

Outagamie County GIS website
(http://outagamiecowi.wgxtreme.com)

2011 Property Record | Outagamie County, WI

Assessed values not finalized until after Board of Review
Property information is valid as of 04/24/2012

Tax Bill
(requires Adobe Reader)

OWNER

STERLING ENTERPRISE OF WIS INC
304 W WISCONSIN AVE
APPLETON, WI 54911

CO-OWNER(S)

PROPERTY INFORMATION

Parcel ID:	*316093900*
Document #:	*1867125*
Tax Districts:	

APPLETON SCHOOL
FOX VALLEY TECH

PROPERTY DESCRIPTION

SIXTH WARD PLAT 6WD LOT 1 AND E23FT OF LOT 2 BLK 31 LESS DOC #1867125 FOR R/W

Municipality:	*CITY OF APPLETON*
Property Address:	*304 W WISCONSIN AVE*

LAND VALUATION

Code	Acres	Land	Impr.	Total
G2	.230	$54,800	$120,200	$175,000

REFERENCE 5

SOIL SURVEY OF

Outagamie County, Wisconsin

United States Department of Agriculture
Soil Conservation Service
In cooperation with the
Research Division of the College of Agricultural
and Life Sciences
University of Wisconsin

REFERENCE 6

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Hawaii	Oklahoma
Idaho	Oregon
Illinois	Pennsylvania
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Iowa	South Carolina
Kansas	South Dakota
Kentucky	Tennessee
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Canal	Plain
Cape	Range
Cemetery	Rapids
Channel	Reserve
Cliff	Reservoir
Crater	Ridge
Crossing	Sea
Dam	Slope
Falls	Spring
Flat	Stream
Forest	Summit
Gap	Swamp
Geyser	Trail
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Island	Woods

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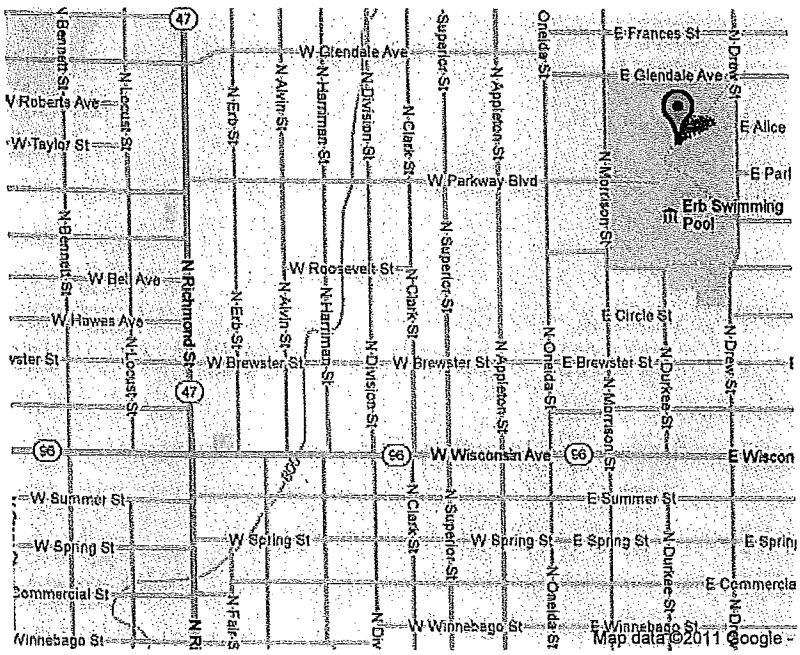
Erb Park

Location	Latitude (lat)	Longitude (long)	Elevation
Outagamie County, Wisconsin	44.278876°	-88.402329°	787 ft. 239 m.



Location	Latitude (lat)	Longitude (long)	Elevation
Outagamie County, Wisconsin	44.278876°	-88.402329°	787 ft. 239 m.

Print This Map

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REFERENCE 7

Census 2010 Summary Profile

304 W Wisconsin Ave, Appleton, WI, 54911
Ring: 1 mile radius

Appleton Community and Economic
Latitude: 44.273
Longitude: -88.40893

	2000	2010	2000-2010 Annual Rate
Population	19,422	18,078	-0.72%
Households	7,692	7,485	-0.27%
Housing Units	8,024	8,063	0.05%

Population by Race	**Number**	**Percent**
Total	18,077	100.0%
Population Reporting One Race	17,677	97.8%
White	15,702	86.9%
Black	428	2.4%
American Indian	195	1.1%
Asian	1,008	5.6%
Pacific Islander	12	0.1%
Some Other Race	332	1.8%
Population Reporting Two or More Races	400	2.2%
Total Hispanic Population	766	4.2%
Population by Sex		
Male	9,183	50.8%
Female	8,895	49.2%
Population by Age		
Total	18,077	100.0%
Age 0 - 4	1,200	6.6%
Age 5 - 9	1,126	6.2%
Age 10 - 14	1,007	5.6%
Age 15 - 19	1,373	7.6%
Age 20 - 24	1,598	8.8%
Age 25 - 29	1,566	8.7%
Age 30 - 34	1,480	8.2%
Age 35 - 39	1,153	6.4%
Age 40 - 44	1,159	6.4%
Age 45 - 49	1,257	7.0%
Age 50 - 54	1,224	6.8%
Age 55 - 59	1,112	6.2%
Age 60 - 64	824	4.6%
Age 65 - 69	541	3.0%
Age 70 - 74	409	2.3%
Age 75 - 79	370	2.0%
Age 80 - 84	334	1.8%
Age 85+	346	1.9%
Age 18+	14,063	77.8%
Age 65+	2,000	11.1%
Median Age by Sex and Race/Hispanic Origin		
Total Population	34.0	
Male	32.8	
Female	35.2	
White Alone	36.1	
Black Alone	26.1	
American Indian Alone	29.6	
Asian Alone	21.3	
Pacific Islander Alone	25.0	
Some Other Race Alone	24.7	
Two or More Races	14.4	
Hispanic Population	22.4	

Data Note: Hispanic population can be of any race. Census 2010 medians are computed from reported data distributions.
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri converted Census 2000 data into 2010 geography.

December 07, 2012

Census 2010 Summary Profile

304 W Wisconsin Ave, Appleton, WI, 54911
Ring: 1 mile radius

Appleton Community and Economic
Latitude: 44.273
Longitude: -88.40893

Households by Type		
Total	7,484	100.0%
Households with 1 Person	2,729	36.5%
Households with 2+ People	4,755	63.5%
Family Households	4,113	55.0%
Husband-wife Families	2,994	40.0%
With Own Children	1,279	17.1%
Other Family (No Spouse Present)	1,120	15.0%
With Own Children	718	9.6%
Nonfamily Households	642	8.6%
All Households with Children	2,125	28.4%
Multigenerational Households	135	1.8%
Unmarried Partner Households	613	8.2%
Male-female	550	7.3%
Same-sex	63	0.8%
Average Household Size	2.25	

Family Households by Size		
Total	4,114	100.0%
2 People	1,859	45.2%
3 People	953	23.2%
4 People	746	18.1%
5 People	324	7.9%
6 People	131	3.2%
7+ People	101	2.5%
Average Family Size	3.00	

Nonfamily Households by Size		
Total	3,372	100.0%
1 Person	2,729	80.9%
2 People	535	15.9%
3 People	75	2.2%
4 People	23	0.7%
5 People	7	0.2%
6 People	0	0.0%
7+ People	3	0.1%
Average Nonfamily Size	1.23	

Population by Relationship and Household Type		
Total	18,078	100.0%
In Households	16,861	93.3%
In Family Households	12,705	70.3%
Householder	4,093	22.6%
Spouse	2,977	16.5%
Child	4,849	26.8%
Other relative	415	2.3%
Nonrelative	372	2.1%
In Nonfamily Households	4,156	23.0%
In Group Quarters	1,217	6.7%
Institutionalized Population	401	2.2%
Noninstitutionalized Population	816	4.5%

Data Note: Households with children include any households with people under age 18, related or not. **Multigenerational households** are families with 3 or more parent-child relationships. **Unmarried partner households** are usually classified as nonfamily households unless there is another member of the household related to the householder. Multigenerational and unmarried partner households are reported only to the tract level. Esri estimated block group data, which is used to estimate polygons or non-standard geography. **Average family size** excludes nonrelatives.
Source: U.S. Census Bureau, Census 2010 Summary File 1.

December 07, 2012

Family Households by Age of Householder		
Total	4,114	100.0%
Householder Age 15 - 44	1,973	48.0%
Householder Age 45 - 54	898	21.8%
Householder Age 55 - 64	633	15.4%
Householder Age 65 - 74	321	7.8%
Householder Age 75+	289	7.0%
Nonfamily Households by Age of Householder		
Total	3,372	100.0%
Householder Age 15 - 44	1,325	39.3%
Householder Age 45 - 54	593	17.6%
Householder Age 55 - 64	605	17.9%
Householder Age 65 - 74	343	10.2%
Householder Age 75+	506	15.0%
Households by Race of Householder		
Total	7,486	100.0%
Householder is White Alone	6,946	92.8%
Householder is Black Alone	99	1.3%
Householder is American Indian Alone	68	0.9%
Householder is Asian Alone	207	2.8%
Householder is Pacific Islander Alone	4	0.1%
Householder is Some Other Race Alone	81	1.1%
Householder is Two or More Races	81	1.1%
Households with Hispanic Householder	177	2.4%
Husband-wife Families by Race of Householder		
Total	2,994	100.0%
Householder is White Alone	2,770	92.5%
Householder is Black Alone	19	0.6%
Householder is American Indian Alone	23	0.8%
Householder is Asian Alone	110	3.7%
Householder is Pacific Islander Alone	2	0.1%
Householder is Some Other Race Alone	42	1.4%
Householder is Two or More Races	28	0.9%
Husband-wife Families with Hispanic Householder	87	2.9%
Other Families (No Spouse) by Race of Householder		
Total	1,120	100.0%
Householder is White Alone	983	87.8%
Householder is Black Alone	35	3.1%
Householder is American Indian Alone	16	1.4%
Householder is Asian Alone	51	4.6%
Householder is Pacific Islander Alone	1	0.1%
Householder is Some Other Race Alone	17	1.5%
Householder is Two or More Races	17	1.5%
Other Families with Hispanic Householder	35	3.1%
Nonfamily Households by Race of Householder		
Total	3,372	100.0%
Householder is White Alone	3,193	94.7%
Householder is Black Alone	45	1.3%
Householder is American Indian Alone	29	0.9%
Householder is Asian Alone	47	1.4%
Householder is Pacific Islander Alone	1	0.0%
Householder is Some Other Race Alone	22	0.7%
Householder is Two or More Races	35	1.0%
Nonfamily Households with Hispanic Householder	54	1.6%

Source: U.S. Census Bureau, Census 2010 Summary File 1.

Total Housing Units by Occupancy		
Total	8,046	100.0%
Occupied Housing Units	7,485	93.0%
Vacant Housing Units		
For Rent	171	2.1%
Rented, not Occupied	13	0.2%
For Sale Only	171	2.1%
Sold, not Occupied	26	0.3%
For Seasonal/Recreational/Occasional Use	20	0.2%
For Migrant Workers	0	0.0%
Other Vacant	160	2.0%
Total Vacancy Rate	7.2%	
Households by Tenure and Mortgage Status		
Total	7,485	100.0%
Owner Occupied	4,868	65.0%
Owned with a Mortgage/Loan	3,686	49.2%
Owned Free and Clear	1,182	15.8%
Average Household Size	2.41	
Renter Occupied	2,617	35.0%
Average Household Size	1.95	
Owner-occupied Housing Units by Race of Householder		
Total	4,868	100.0%
Householder is White Alone	4,672	96.0%
Householder is Black Alone	18	0.4%
Householder is American Indian Alone	23	0.5%
Householder is Asian Alone	77	1.6%
Householder is Pacific Islander Alone	0	0.0%
Householder is Some Other Race Alone	39	0.8%
Householder is Two or More Races	39	0.8%
Owner-occupied Housing Units with Hispanic Householder	84	1.7%
Renter-occupied Housing Units by Race of Householder		
Total	2,617	100.0%
Householder is White Alone	2,274	86.9%
Householder is Black Alone	80	3.1%
Householder is American Indian Alone	45	1.7%
Householder is Asian Alone	130	5.0%
Householder is Pacific Islander Alone	4	0.2%
Householder is Some Other Race Alone	42	1.6%
Householder is Two or More Races	42	1.6%
Renter-occupied Housing Units with Hispanic Householder	93	3.6%
Average Household Size by Race/Hispanic Origin of Householder		
Householder is White Alone	2.16	
Householder is Black Alone	2.54	
Householder is American Indian Alone	2.57	
Householder is Asian Alone	4.45	
Householder is Pacific Islander Alone	2.75	
Householder is Some Other Race Alone	3.58	
Householder is Two or More Races	2.74	
Householder is Hispanic	3.35	

Source: U.S. Census Bureau, Census 2010 Summary File 1.

REFERENCE 8

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Sterling Cleaners - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: **POLREP #3**
Progress
Sterling Cleaners
B5VH
Appleton, WI
Latitude: 44.2730409 Longitude: -88.4088098

To: Jennifer Borski, State of Wisconsin DNR
Tim Mirkes, Health Department
Rob Thiboldeaux, WI Dept of Health

From: Kathy Halbur, OSC
Date: 9/21/2011
Reporting Period: 10/14/2010 - 9/15/2011

1. Introduction

1.1 Background

Site Number:	B5VH	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	7/27/2010
Response Authority:	CERCLA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/22/2010	**Start Date:**	9/22/2010
Demob Date:	9/15/2011	**Completion Date:**	
CERCLIS ID:	WIN000510415	**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

Time critical removal action.

1.1.2 Site Description

The building on-site was built as a dry cleaning facility in 1954. The dry cleaning operation has changed owners numerous times since initial construction and is currently operated as Sterling Cleaners. The property is immediately bordered on the west and north by residences. Commercial facilities are located across the street to the east and south.

1.1.2.1 Location

The Sterling Cleaners Site (Site) is located at 304 W. Wisconsin Avenue in Appleton, Outagamie County, Wisconsin.

1.1.2.2 Description of Threat

Historic dumping of the dry cleaning solvent perchloroethylene (PCE) at the Site resulted in significant soil contamination. The PCE migrated through the soils into the groundwater and traveled offsite, resulting in

REFERENCE 9

RR REPORT

Important Updates from the DNR Remediation and Redevelopment Program

August 15, 2013

Brownfield News and Notes

Twenty-two of the largest Great Lakes Shoreline cities receive $8.5 million for Green Infrastructure projects to improve Great Lakes water quality.

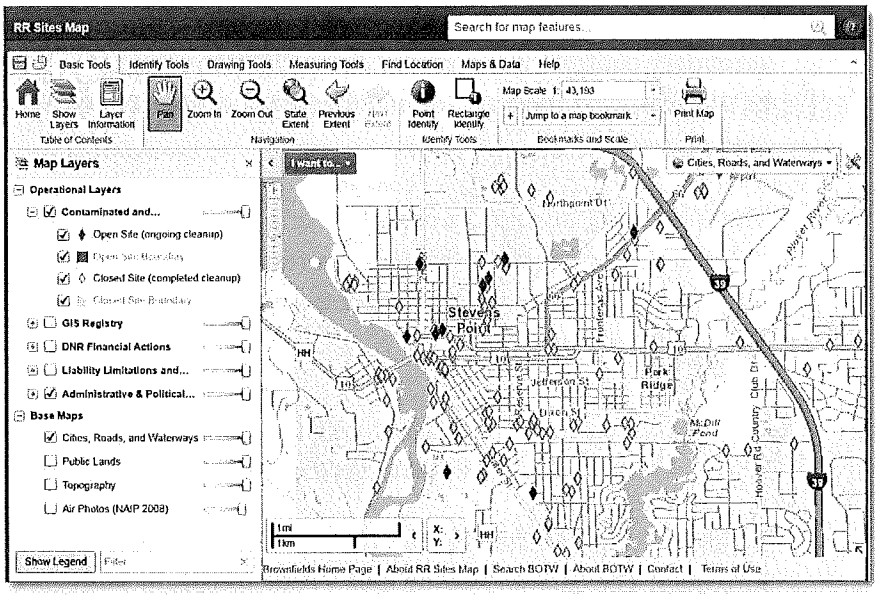
United Liquid Waste, a company located in the Town of Clyman, is fined for violating state water pollution laws. A ruptured storage tank releases over 1,000 gallons of industrial waste, according the Beaver Dam Daily Citizen news.

Approximately $15 million in Brownfields Revolving Loan Funding awarded to 41 communities across the country for cleanup and redevelopment projects. Click here for list of awardees.

WEDC awards Manitowoc and Mauston Site Assessment Grants.

RR Sites Map Getting an Overhaul

At the end of the month the current version of RR Sites map will be retired and a new version will be available. We think you will find that the new interactive web mapping application for contaminated and cleaned up sites will be more user friendly and intuitive. It will have nearly all the capabilities as the current version as well as a number of new features. One major difference between the old and new versions is that the new interface has tabs which group similar sets of tools (similar to MS Word or Excel). Also, tasks such as turning on layers and pan and zoom are much more seamless and require less time to load.Other new features include more drawing tools, the ability to add a CSV or Shapefile, and the ability to change coordinate systems.



The expected release date of the new application is the week of August 26th. An announcment will be sent out to RR Report subscribers when the new application is available.

South Central RR Staff Help Beloit School District with Renovation Project

Foundry sand and slag proved to be no match for South Central Region Project Manager Janet Dimaggio and the various contractors working to improve the Beloit school district's facilities. As part of the school district's ambitious $70 million dollar renovation, five exemptions to build on abandoned landfills were necessary. Thanks to the timely work by all involved, a new swimming pool for Beloit Memorial High School will be in operation for the school's reopening this fall.

Click here to read more about the exemption process and the project.

Availability of Statewide Vapor Intrusion Zone Contract

The RR program recently procured a statewide vapor intrusion zone contract (VIZC) for vapor sampling and mitigation. The VIZC provides pre-approved contractors to conduct vapor sampling and/or vapor mitigation at properties where vapor intrusion may present a risk to human health. The scope of vapor sampling is limited to sub-slab, indoor air and outdoor ambient air sampling. Besides DNR, other state agencies, municipalities and the University of Wisconsin can call on the pre-approved contractor to perform work under the VIZC. If a governmental entity utilizes the VIZC contractor, the hiring governmental entity would be responsible for the costs incurred by the VIZC contractor. The biggest benefit to the entity using VIZC would be that the entity would not have to go through the competitive bidding process to hire its own contractor.

The state is divided into six zones for purposes of the VIZC. Those zones are designated as N1, N2, NE, WC, SC and SE. Two categories of services (vapor sampling and vapor mitigation) are designated in VIZC. SCS Engineers was awarded as the primary contractor for all six zones for both categories of services. The Sigma Group, Inc. was awarded as the secondary contractor for the NE, SC & SE zones for both categories of services. Tetra Tech Inc. was awarded as the secondary contractor for the N1, N2 & WC zones for the sampling service category only. No secondary contract was awarded for mitigation services in the N1, N2 & WC zones. The VIZC will be implemented similarly to the Emergency Response Zone Contract (ERZC), which has existed for several years.

The VIZC will be used in cases where a responsible party is unable or unwilling to perform the necessary sampling or mitigation. If a responsible party is identified the State can seek cost recovery for all costs expended under the contract as well as costs of DNR staff oversight. Jason Lowery is the VIZC contract manager.

Class on Comparing Mitigation of Radon and Chemical Vapor Intrusion

A first of its kind class will be offered this fall, comparing mitigation of radon and chemical vapor intrusion. The course, "Radon and Vapor Intrusion Mitigation: What is the Common Ground and

What are the Unique Issues?" will be presented October 16 - 17, 2013 at the Heidel House Resort in Green Lake, WI. The course is designed for certified and/or licensed radon contractors, environmental consultants, and local government officials who may acquire contaminated properties. The course will address the commonalities and differences of vapor intrusion and radon entry, chemistry and environmental fate, health concerns, economic and legal issues, regulations and standards, measurement techniques, and prevention and mitigation strategies. Attendees will be able to understand methods for mitigating vapor intrusion and radon entry, document complete system installation, demonstrate competence in pressure field extension (PFE) monitoring and equipment, and document PFE measurements. In addition, those attending will also gain understanding of the critical elements of team work, communication, and documentation that is essential to vapor intrusion mitigation.

You can register for this course at: www.cce.umn.edu/courses/ENGR-0439.html. Room reservations at the Heidel House can be made at www.heidelhouse.com/.

Public Invited to Weigh In on DNR Guidance Development

With DNR's broad decision-making authorities, day-to-day program guidance is often critical to helping staff do their jobs consistently and fairly. The creation - or significant modification - of these program guidance documents is now open to review and comment from the general public. DNR will solicit comments by posting a notice on the DNR Proposed Program Guidance webpage and by notifying known stakeholders. Interested members of the public may subscribe to be automatically alerted when new items are posted. Anyone may submit comments during the 21 day comment period. All comments will be considered and the final product will be distributed.

New Fact Sheet on the Wisconsin Statewide Soil-Arsenic Background Threshold Value

In a February 2013 RR Report we published a short summary with a link to an article on the statewide soil-arsenic background threshold value. Since then a new fact sheet, called Wisconsin Statewide Soil-Arsenic Background Threshold Value (RR-940), has been created that provides a soil-Arsenic background threshold value (8 mg/kg) for use statewide. It briefly describes a procedure for a responsible party to follow when determining a different site-specific background level.

Soil RCL Document and Spreadsheets Updated

Publication RR-890, which helps environmental professionals determine soil residual contaminant levels (RCLs) in Wisconsin has been updated. The current RR-890 document and the accompanying spreadsheet of RCLs incorporate the May 2013 changes to the US EPA's Regional Screening Level (RSL) website. With semi-annual updates on EPA's RSLs, the next update is anticipated in November 2013.

For further information about the soil RCL documents and spreadsheets please visit the RR Program Environmental Professionals webpage. If you have questions please contact Resty Pelayo.

Legacy Communities - Sustainability Webinar

Learn from community and DNR experts how certain acquisition methods can limit your liability and help turn brownfields into productive properties. This one-hour webinar focuses on what a community should consider when acquiring abandoned or underused commercial and industrial properties.

RR Program Staff Updates

Tauren Beggs – Northeast Region DOT Hydrogeologist LTE
Tauren graduated from UW Oshkosh in 2011 with a BS in hydrogeology with a minor in business administration. In his last semester of college he interned at the Oshkosh DNR Service Center. Since that time he worked with the Wisconsin Geological and Natural History Survey (WGNHS) in Madison on a bedrock mapping project throughout Wisconsin. In October 2011, he worked with Engel & Associates, Inc. Environmental Consulting Firm in Fond du Lac until he was recently hired at the DNR.

PECFA Staff - Statewide
Starting in early July 2013, 18 PECFA claims review staff and hydrogeologists transferred to DNR from DSPS. Click here to read their biographies.

Staff contact information is available on the PECFA webpage.

ITRC Online Training Opportunities

Click the links below for more information about upcoming training sessions.

August 20 and 27 - Soil Sampling and Decision Making Using Incremental Sampling Methodology

September 5 - Biofuels: Release Prevention, Environmental Behavior, and Remediation

September 10 - LNAPL Part 1: An Improved Understanding of LNAPL Behavior in the Subsurface

September 17 - LNAPL Part 2: LNAPL Characterization and Recoverability

September 19 - Green and Sustainable Remediation

September 24 - LNAPL Part 3: Evaluating LNAPL Remedial Technologies for Achieving Project Goals

September 26 - Use and Measurement of Mass Flux and Mass Discharge