December 8, 2022 Project Reference #19270

Mr. Chris Dietrich
c/o Jennifer Dorman
Wisconsin Department of Natural Resources
Remediation & Redevelopment Program
1027 W. St. Paul Avenue
Milwaukee, WI 53233

RE: Additional PCB Investigation, Sediment Sampling, and Sewer Level Monitoring
South Marina Drive Storm Sewer
Milwaukee, Wisconsin
BRRTS No. 02-41-587190 and FID No. 341331430

Dear Mr. Dietrich:

At the request of the City of Milwaukee, The Sigma Group, Inc., (Sigma) has prepared this letter report for the additional evaluation of polychlorinated biphenyls (PCBs) in the storm sewer system present along South Marina Drive, Grand Trunk, Milwaukee (**Figure 1**). This letter report presents a summary of the additional PCB assessment activities completed between September 2021 and April 2022, an interpretation of the data collected over time since December 2018, and provides recommendations for further investigation of PCB impacted sediment deposition within the sewer system.

The additional PCB assessment activities were performed in accordance with the work plan submitted in June 2021 to the Wisconsin Department of Natural Resources (WDNR) and the US Environmental Protection Agency (USEPA). The purpose was to evaluate potential source(s) contributing PCB impacted sediment and to further define the PCB impacts upstream of the South Marina Drive storm sewer, and determine if PCBs migrated outside the sewer pipe through potential cracks. In addition, collection of time-series water level data from the manholes and the sewer outfall was requested by WDNR to evaluate the effect of the fluctuating Kinnickinnic River/Lake Michigan elevation to the storm sewer flow and resulting sediment transport.

BACKGROUND

The 36-inch storm sewer along South Marina Drive runs north-south and receives water from precipitation that sheet flows towards catch basins along South Marina Drive, precipitation that falls on the 427 East Stewart Street property (former Louis Allis property) to the southeast of South Marina Drive, and precipitation from the 1982 S. Hilbert Street property to the west of South Marina Drive. The storm sewer is present at a depth of approximately 6 to 7.5 feet bgs. The storm sewer curves west at the north end of South Marina and discharges through a 42-inch diameter outfall on the eastern end of the inlet, located east of the Skipper Bud's Slip which is connected to the Kinnickinnic River (**Figure 1**). The drainage area for the sewer system is approximately 18.5 acres.

While minor maintenance to repair/replace catch basins along South Marina Drive were completed in 2016, no sewer cleaning or repair work has been performed and/or documented to date.

A combined sewer system is located along East Stewart Street. The combined sewer receives its sanitary discharge predominantly from properties south of the East Stewart Street and storm water at catch basins along the East Stewart Street. Historically, this combined sewer system was connected to the storm sewer system along South Marina Drive providing a "back door overflow" to help prevent basement backups. Review of the city record and email from Mr. Robert Seleen from the City of Milwaukee Department of Public Works confirms that the City of Milwaukee bulkheaded the connection between MH-5 and MH-6 in 1986 and the sewer systems are no longer connected. Subsequently in 1990, the combined sewer in East Stewart Street was re-laid in 1990, indicating the bulkheaded pipe between manholes MH-5 and MH-6 was removed.

The storm sewer and combined sewer lines, as well as the known private property lines adjacent to South Marina Drive are depicted in **Figure 1**.

ENVIRONMENTAL HISTORY OF THE SITE AND UPSTREAM PROPERTIES

South Marina Drive is located near the confluence of the Kinnickinnic, Menomonee, and Milwaukee Rivers and their delta into Lake Michigan. Prior to filling and development, South Marina Drive and surrounding areas were historically dominated by swampy or wetland conditions supporting the well-known historic wild rice and tamarack forests.

South Marina Drive is noted to have been located near the edge of Milwaukee's limits when the City of Milwaukee was chartered in 1846. This portion of the city developed with infrastructure improvements and manufacturing operations beginning prior to the mid 1800's. It is concluded therefore that since the early to mid-1800's, this portion of the City has been significantly altered through human activities such as filling of wetlands, developing infrastructure including former rail lines, construction of the Skipper Bud's Slip with bulkheading of shorelines, periodic dredging, as well as discharge from combined sewers.

South Marina Drive is located within a historically heavy industrial area of the City of Milwaukee. Adjoining properties have included homes, foundries, tanneries, bottle distribution, rail yard, salt warehousing, freight storage (including car ferrying), and electric motor manufacturing. Specifically, Sigma reviewed historical maps and photographs depicting the area around the Site to identify former industries/site uses and hence potential sources of impact and fill material as well as the known modifications to the Skipper Bud's Slip to the northwest and neighboring former natural wetlands. Historical uses are depicted in **Figure 2**.

The shoreline northwest of South Marina Drive was undeveloped as late as 1870. At that time, the northern portion of South Marina Drive was considered marshland. By 1890, the shoreline had been modified to its current configuration. Historical maps and aerial photographs indicate that, beginning in the 1920s, an inlet extending east from the Kinnickinnic River has connected several pools in the property northeast of South Marina Drive to the river. The historical configurations of these former wetlands and Skipper Bud's Slip depicting regional filling activities are presented in **Figure 3.**

The identified historical uses of upstream properties within the vicinity of the Site include the following:

- **1982 S. Hilbert Street** - Formerly 1977 S. Allis Street. The Pfister & Vogel Leather Co. operated a tannery at 1982 S. Hilbert Avenue west of the Site from sometime between 1870 and 1890 through circa 1930. A 1925 map indicated that a chrome house was present in the tannery complex at that time. Around 1930, Pfister & Vogel consolidated its leather production operations and converted the tannery complex to a rental property. The P&V Atlas Industrial Center has since operated as a mixed-use industrial site. The Edward P. Allis foundry was present to the east of the Pfister & Vogel tannery (west of the Site) from sometime between 1870 and 1890 through sometime between 1902 and 1910. The locations of these historical operations are shown in **Figure 2**.

  Review of the closed *BRRTS # 02-41-427282 1977 S ALLIS ST COMPLEX* case file[1] (ERP case opened in March 2003 and closed in November 2005) indicates that PCBs were reported between concentrations of 2.9 ppm and 22 ppm on the property within soils in areas where transformers were used.

- **427 E. Stewart Street (Former Louis Allis Property)** - The east end of the property at 427 E. Stewart Street was occupied by the Schlitz Brewing bottling works from sometime between 1870 and 1890 through sometime between 1902 and 1910. From sometime between 1902 and 1910 through sometime between 1913 and 1951, the Milwaukee Corrugating Co. occupied the former bottling works site. From sometime between 1870 and 1890 through sometime between 1931 and 1951, the Wisconsin Malleable Iron Co. operated a foundry directly west of the bottling works. The Louis Allis Co. began manufacturing electric motors in the western section of the property sometime between 1898 and 1902. The plant gradually expanded, occupying the entirety of the property by 1951. The plant included former die casting operations. The Louis Allis facility closed in 1998. The locations of these companies are shown in **Figure 2**.

  Review of the open BRRTS # 02-41-001137 MAGNETEK INC – FORMER casefile[2] (ERP case which started in April 1995) indicates that PCBs were known to be present in some transformers, capacitators, and die casting equipment, and that a release had occurred within the die casting room. Soil and groundwater sampling was conducted in 1996 on different parts of the property and adjacent properties, as well as two wipe samples and a sample of the original wood floor within the interior die casting room. Review of the sampling results indicates that soil samples reported total PCB concentrations ranging between 0.074 ppm and 120.66 ppm, and there were no detections of PCBs within the groundwater samples collected. One of the two wipe samples reported a concentration of PCBs of 57 micrograms (µg) / 100 square centimeters (cm^2), which exceeds the EPA regulatory limit of 10 µg/100 cm^2. The wood floor sample reported total PCB concentrations of 48,000 ppm, which is significantly higher than the TSCA threshold of 50 ppm. Currently, the former Louis Allis property is an open ERP case in the WDNR's BRRTS database.

[1] *Case Close Out Form Submittal – 1977 S. Allis Street Complex, Milwaukee, WI, BRRTS #02-41-427282, FID # 241354520* - KPRG and Associates, Inc., June 3, 2005 (reference Tables C-3 and C-5)
[2] *Soil Investigation Report, Former Magnatek Facility, Milwaukee, Wisconsin* - Applied Technology & Management, Inc., May 2, 1996

SUMMARY OF PCB INVESTIGATION OF THE SITE

In October 2018, PCBs were detected at elevated concentrations within the sediment of the Skipper Bud's Slip, which is connected to the Kinnickinnic River. These concentrations exceeded the 50 parts per million (ppm) regulatory limit, which requires management of the material as hazardous waste under the Toxic Substance Control Act (TSCA) regulations. An assessment of the potential sediment within the storm sewer servicing South Marina Drive and East Stewart Street was requested by the WDNR given the presence of a storm water discharge outlet at the eastern end of the inlet and the documented use of PCBs at the former Louis Allis Facility south/southeast of South Marina Drive.

In December 2018, initial sediment sampling was attempted from ten manholes (MH-1 through MH-10) along South Marina Drive and East Stewart Street to evaluate if potential sediments accumulated in the manholes are impacted with PCBs. Three of the manholes (MH-1 through MH-3) along South Marina Drive could not be sampled due to submerged/high-water conditions and absence of sufficient sediment volume. Two other locations (MH-5 and MH-7) could not be located. A catch basin located in the approximate location of MH-5 was sampled instead to represent sediment at MH-5.

A second sediment sampling event was performed in August 2020 to confirm the relatively high concentration of PCBs detected at MH-4 during the initial sampling event, locate and sample MH-5, and evaluate and attempt to sample MH-1, MH-2, and MH-3, if sediment was present.

Based on the results of the two sampling events, a third round of sampling and manhole monitoring activities were performed in October/November 2020. Considering the relatively low concentration of PCBs detected during the second sampling event, Sigma recommended periodic inspection of select manholes to observe sediment accumulation and collect additional samples for PCBs analysis. The depth of water and sediment accumulation was tracked on a bi-weekly basis in manholes MH-4 through MH-6. A total of four site visits were completed and sediment and water samples were collected during the final site visit for PCB analysis.

Based on the data collected over multiple occasions from the site, small to trace amounts of sediment were observed in manholes MH-1 through MW-3, MH-5, MH-6, MH-8 and MH-9. No PCBs were detected within sediment samples collected from MH-10. Total PCB concentrations within the sediment samples collected from manholes MH-5, MH-6, MH-8 and MH-9 were less than 1 ppm, while PCB concentrations within sediment samples collected from manholes MH-1 through MH-3 ranged from 1.77 ppm to 12.82 ppm. The presence of 1 to 2 inches of sediment was observed at manhole MH-4 during each sampling event and the detected PCB concentrations were 93.20 ppm (initial sampling) and 8.92 ppm (subsequent sampling). A report summarizing the PCB investigation and sewer condition evaluation was submitted to the WDNR in February 2021 for review and comments.

The WDNR sent the City of Milwaukee a Responsible Party letter in February 2021. The WDNR informed the City of Milwaukee that the case was given over to the oversight of the USEPA in March 2021. Based on discussions with the WDNR, the USEPA, and the City of Milwaukee, Sigma prepared a work plan to further evaluate the South Marina Drive storm sewer and adjacent off-site properties storm sewers for PCB-impacted sediment in June 2021.

ADDITIONAL INVESTIGATION

To further define sediment accumulation and PCB impacts within the storm sewer system along South Marina Drive, Sigma proposed the collection of sediment and water samples from ten locations. The ten sampling locations included five locations previously sampled along the South Marina Drive sewer and six off-site locations upstream of the South Marina Drive sewer. Sigma also proposed four soil borings to sample the storm sewer backfill and placed four level loggers at the Site to monitor water levels over a month-long period. The scope of work of the additional assessment activities included the following:

- Five manholes along South Marina Drive (MH-1 through MH-5) located within the public right-of-way (ROW) were re-sampled in September and October 2021. Water levels, in situ water quality parameters (temperature, pH, dissolved oxygen, redox potential, and conductivity), sediment thickness were measured, and sediment and water samples were collected.

- Two upstream manholes (MH-14 and MH-15) located off-site on 427 East Stewart Street property (privately owned former Louis Allis facility) southeast of the South Marina Drive and East Stewart Street intersection were sampled in October and November 2021 to evaluate upstream sources. Water levels, in situ water quality parameters (temperature, pH, dissolved oxygen, redox potential, and conductivity), sediment thickness were measured, and sediment and water samples were collected.

- Three upstream manholes (MH-11 through MH-13) located off-site within the parking lot of 1982 S. Hilbert Street (a privately owned property) west of South Marina Drive were sampled in April 2022, based on an access agreement reached between the City of Milwaukee and the property owner. Sigma made a return trip to sample manhole MH-16, a catch basin connected to manhole MH-13, which was identified during the initial sampling event at the property. Water levels, in situ water quality parameters (temperature, pH, dissolved oxygen, redox potential, and conductivity), sediment thickness were measured, and sediment and water samples were collected.

- Four soil borings (MH-1-BF through MH-4-BF) were advanced next to the storm sewer near the four manholes in September 2021. One soil sample from each boring was collected from the storm sewer backfill for laboratory analysis of PCBs.

- Three levelloggers were placed in manholes (MH-1, MH-4, and MH-14), and one level logger (SLIP) was placed west of the storm sewer's discharge outlet within the slip. The water levels were monitored from October to November 2021.

The five manholes (MH-6 through MH-10) located on a combined sewer along East Stewart Street that runs west from MH-6 were not re-sampled due to relatively low or no PCB impacts in the previous sampling rounds, and the manholes are no longer connected to the South Marina Drive storm sewer.

The project area and manhole locations are presented in **Figure 1**.

SEDIMENT AND WATER SAMPLE COLLECTION

The water level and depth of each manhole were measured first followed by in-situ water quality parameters (i.e., temperature, pH, redox potential, dissolved oxygen, and conductivity).

Following in situ water quality measurements, sediment poling techniques were used to estimate the amount of sediment within the manhole. This involved measuring the top of sediment and bottom within different portions of the manhole.

Water sample was collected using a peristaltic pump and a new disposable tubing attached to a decontaminated survey range pole. The survey range pole was lowered to collect the water sample approximately six inches above the top of the sediment (or near the bottom of the manhole if no sediment was present or water was near the bottom). The water was pumped and a sample was collected immediately after the pump started by filling amber glass bottles supplied by the lab. New disposable tubing was used for each manhole.

The sediment sample collection methods were adjusted in the field to accommodate different manhole conditions. When enough sediment (>1/4" thick) was observed at the bottom of the manhole with a noted shallow water depth, attempt was made to collect a sediment sample by a dustpan or plastic scoop method. The dustpan method involved decontaminated (or new) pivoted dustpan attached to a decontaminated survey range pole. In some locations, a plastic scoop was used instead of the dustpan. To make the scoop, a disposable 1-liter HDPE sampling bottle was cut in half and the bottom portion of the container was attached to the end of a decontaminated survey range pole. The scoop allowed collection of samples when sediment was difficult to access using the larger dustpan. To collect the sample, the new/decontaminated dustpan or plastic scoop was lowered to the bottom of the manhole and sediment sample was scooped gently from the bottom. Water was decanted from the sampler and returned to the manhole. The sediment from the sampler was containerized in a laboratory-supplied 2-ounce glass jar and stored in a cooler on ice.

A peristaltic pumping method was used to retrieve a sample, when a trace amount of sediment (<1/4" thick) was present in the manhole, or/and the dustpan/plastic scoop method was unable to obtain a sample. Each of the samples were collected using new vinyl tubing attached to the peristaltic pump. The intake end of the vinyl tubing was attached to a decontaminated survey range pole and set at the bottom of the manhole. The pump was run to collect a mixture of water and sediment into a decontaminated 3- or 5-gallon bucket. The sediment was allowed to settle to the bottom of the bucket and the water was decanted back into the manhole. A sediment sample was collected from the bucket and containerized in laboratory-supplied 2-ounce glass jars and stored in a cooler on ice.

Attached **Table 1** presents a summary of the manhole conditions observed during each sampling event and of the corresponding sampling methods used.

Sample Collection During September 2021 – During the sampling event completed on September 1 and 2, 2021, five manholes (MH-1 through MH-5) located on the storm sewer along South Marina Drive were selected for sampling.

Each of the water samples from manholes MH-1 through MH-5 was collected using a peristaltic pump, (as described above) and each were containerized in laboratory-supplied 250 milliliter amber glass vials (one per sample) and stored in a cooler on ice.

The dustpan method was used to collect the sediment samples at manholes MH-2 and MH-4. The peristaltic pump method was used to collect the sediment samples at manholes MH-1, MH-3, and MH-5,

as the dustpan method was unable to obtain a sample. Sediment samples were containerized in laboratory-supplied 2-ounce glass jars and stored in a cooler on ice.

The sediment and water samples collected were submitted under standard chain-of-custody procedures via courier to Synergy Environmental Lab, Inc. of Appleton, Wisconsin. The sediment and water samples were subcontracted to the ESC – Pace National Tennessee for PCB analysis via EPA Method 8082A.

Sample Collection During October 2021 – On the October 4, 2021 sampling event, the City was given access by the 427 E. Stewart Street property owner for Sigma to conduct sediment sampling and water sampling at the manholes MH-14 and MH-15. During the sampling event, the water within the five manholes along South Marina Drive (MH-1 through MH-5) was also resampled to analyze using lower laboratory detection limits, considering the water analytical results from September 2021 indicated that the laboratory detection limits for the PCB analysis were greater than NR 140 Enforcement Standard for groundwater.

Each of the water samples from manholes MH-1 through MH-5, MH-14, and MH-15 was collected using the peristaltic pump method. The water samples were each containerized in laboratory-supplied 1-liter amber glass vials (two per sample) and stored in a cooler on ice.

The peristaltic pump method was used to sample the sediment at the bottom of manholes MH-14 and MH-15. The sediment samples were each containerized in a laboratory-supplied 2-ounce glass jar and stored in a cooler on ice.

The sediment and water samples collected were submitted under standard chain-of-custody procedures to Synergy Environmental Lab, Inc. of Appleton, Wisconsin. The sediment samples were subcontracted to the ESC – Pace National Tennessee for PCB analysis via EPA Method 8082A. The water samples were subcontracted to Eurofins Test America in Pittsburgh, Pennsylvania for PCB analysis via EPA Method 8082A.

Sample Collection During November 2021 – On November 12, 2021, manholes MH-14 and MH-15 were re-sampled due to elevated concentrations of PCBs reported within the October 2021 sample from manhole MH-15. A sediment sample was collected from manhole MH-14 using the plastic scoop method and a sediment sample was collected from manhole MH-15 using the peristaltic pump method.

The sediment samples were each containerized in laboratory supplied 2-oz glass jars and stored in a cooler on ice. The sediment samples were submitted under standard chain-of-custody procedures via courier to Synergy Environmental Lab, Inc. of Appleton, Wisconsin. The sediment samples were subcontracted to the ESC – Pace National Tennessee for PCB analysis via EPA Method 8082A.

Sample Collection During April 2022 – On April 4, 2022, the City of Milwaukee/Sigma was given access by the 1982 S. Hilbert Street property owner for Sigma to conduct sediment sampling and water sampling at the manholes MH-11, MH-12, and MH-13. During the sampling activities, a fourth manhole (MH-16) was discovered. Following site access, Sigma returned to the Site on April 7, 2022 to sample manhole MH-16. Manholes MH-11, MH-13, and MH-16 were observed to be round storm inlet catch basins.

Each of the water samples from manholes MH-11 through MH-13 and MH-16 was collected using the peristaltic pump method. The water samples were each containerized in laboratory-supplied 1-liter amber glass vials (two per sample) and stored in a cooler on ice.

The dustpan method was used to collect the sediment at manholes MH-11 and MH-13. The plastic scoop method was used to collect the sediment at manhole MH-16, as a significant volume of leaves within manhole MH-16 made it difficult to obtain a sediment sample with the dustpan. Due to trace sediment volumes at manhole MH-12, the peristaltic pump method was used to collect a sediment sample at manhole MH-12. The sediment samples were each containerized in a laboratory-supplied 2-ounce glass jar and stored in a cooler on ice.

The sediment and water samples collected were submitted under standard chain-of-custody procedures to Synergy Environmental Lab, Inc. of Appleton, Wisconsin for PCB analysis via EPA Method 8082A. The sediment samples were subcontracted to the Suburban Labs in Mequon, Wisconsin. The water samples were subcontracted to Eurofins Test America in Pittsburgh, Pennsylvania; the samples were shipped the samples directly to Eurofins Test America to meet the hold time for PCB analysis in water.

SEWER BACKFILL SAMPLING

On September 20, 2021, Sigma oversaw the advancement of four Geoprobe® soil borings (MH-1-BF through MH-4-BF) in the vicinities of manholes MH-1 through MH-4 to evaluate if PCBs had impacted the sewer pipe backfill material.

To avoid damage to the storm sewer, Wisconsin Utility Exposure: XPose was subcontracted to conduct a hydrovac excavations to expose the storm sewer prior to advancing the soil borings. The dimensions of each hydro-vac hole are depicted in **Figure 4** and are provided in the soil boring logs in **Attachment 1**. Photos of the hydro-vac excavation and borings are provided in **Attachment 2**.

Following the four hydro-vac excavations, a track-mounted Geoprobe® rig operated by GESTRA Engineering, Inc. was used to complete a soil boring from the bottom of the hydro-vac excavation through the backfill to a depth of approximately 12 inches below the storm sewer pipe. Storm sewer shoring was observed at the bottom of boring MH-4-BF. Water was measured between 3.25 and 5.75 feet bgs within the boreholes, and water was observed to recharge rapidly within the boreholes, especially at boring MH-1-BF near the slip.

Soil samples were collected continuously from the bottom of the hydro-vac excavation to the termination depth of the Geoprobe® soil boring. Soil sampling procedures included collecting a representative sample from various sample intervals and splitting the sample for potential laboratory analysis and field screening. Each soil sample collected from the Geoprobe rig was described on the basis of color, texture, grain size, and plasticity, and classified in general accordance with the United Soil Classification System. Each sample was screened in the field with a calibrated PID equipped with a 10.6 eV lamp to measure for the presence of volatile organic vapors.

One soil sample from each boring was submitted for laboratory analysis of PCBs as representative of the storm sewer backfill at each soil boring location. Each sample was collected at a depth below the groundwater table. Soil samples selected for analysis were containerized in laboratory-supplied 2-ounce glass jars and stored in a cooler on ice. The soil samples collected were submitted under standard chain-

of-custody procedures to Synergy Environmental Lab, Inc. of Appleton, Wisconsin for PCB analysis via EPA Method 8082A. The soil samples were subcontracted to the ESC – Pace National Tennessee.

Following the borehole completion, the soil borings were abandoned with 3/8" bentonite chips and resurfaced with topsoil. Sigma observed on a subsequent site visit that no significant settling had occurred. Borehole abandonment forms are provided in **Attachment 1**.

WATER LEVEL MONITORING

Given the elevated PCB concentrations detected in the sediment of Skipper Bud's Slip and the potential for the seiche effect and barge traffic to push sediment from the Skipper Bud's Slip into the submerged sewer, Sigma proposed long-term water level monitoring at one location within the slip, two locations within manholes along South Marina Drive, and one manhole on the 427 E. Stewart Street property. The purpose of the water level monitoring was to evaluate if changes in water levels in the river and slip caused by ship movement, precipitation, seiche effect or other factors are having a similar effect on water levels within the storm sewer system and energy for potential sediment movement upstream.

On October 4, 2021, Sigma installed four Solinst© Leveloggers within the Skipper Bud's Slip and manholes MH-1, MH-4, and MH-14 (**Figure 5**) to track water levels changes in the river and sewer system. A temporary one-inch diameter slotted well screen, with the level logger placed inside the screen, was set within the sediment in the slip. The screen was fastened to the chain link fence with zip ties. (The chain link fence runs through middle of the slip). Photos of the loggers and screen are provided in **Attachment 3**.

The leveloggers for manholes MH-1 and MH-4 were set approximately one foot from the bottom of each manhole and connected to the top of the manhole. The levelogger was set on the bottom of manhole MH-14 due to the shallow water. The leveloggers were secured to the metal ladder rung within the manholes (MH-4 and MH-14) or to the manhole cover (MH-1). Additionally, a barometric pressure logger was installed in open air and secured to the ladder rung of manhole MH-4. The barometric pressure logger data allows compensation for barometric pressure changes over time for the level loggers. Each levelogger was programmed to record one reading every 90 seconds for a period of one month.

On October 4, 2021 measurement datums for the levelloggers were surveyed with a Trimble® GPS (Model R8s) receiver and referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29). Due to a poor GPS signal within the slip (an area obstructed with a large tree canopy), the datum for the slip levelogger was surveyed with a Trimble Total Station® on December 1, 2021.

Following the one month recording period, on November 12, 2021, the leveloggers were removed from the slip and manholes. The data was downloaded from each levelogger, and adjusted to compensate for barometric pressure changes. The changes in water level at each location were converted to the NGVD 29 datum using the surveyed datums for each levellogger and plotted over time. Each plot was overlaid and compared with precipitation data collected from the Milwaukee Metropolitan Sewer District (MMSD)'s Jones Island location to determine if changes in the water level within the Skipper Bud's slip could potentially causing inflow in the storm sewer and resulting sediment deposition upstream of the outfall.

RESULTS

The following sections present Sigma's field observation, sediment conditions and evaluation of the in-situ measurements and laboratory analytical results for sediment and water samples.

Manhole Conditions

During each site visit manhole conditions including depth of manhole, depth of water, and thickness of sediment in each manhole were noted, and the information is summarized in **Table 1**.

Water levels observed in MH-1 through MH-5 appear to be controlled by the river level. Based on measurements recorded during multiple site visits, the water column for manholes MH-1 through MH-5 are between approximately 2.3 feet (MH-5) and 6.1 feet (MH-1) and the depth of water increases downstream towards the storm sewer outlet.

The bottoms of the manholes MH-14 and MH-15 are elevated approximately 4.7 to 5.3 feet above the inverts of the pipes connecting manholes MH-1 through MH-5, and the water column in the October 2021 sampling round was measured to be between only 0.1 feet (MH-15) and 0.2 feet (MH-14). A cross section showing the alignment of the storm sewer from the slip to manhole MH-1, and manholes MH-1 to MH-15 is provided as **Figure 6**. This cross section depicts the difference in elevation between the inverts between manholes MH-14 and MH-15, and the north-south inverts from manholes MH-1 to MH-5.

The bottoms of the manholes MH-11, MH-12, and MH-13 are elevated approximately 0.7 to 1.7 feet above the inverts connecting manholes MH-1 through MH-5, and the water column in the October 2021 sampling round was measured to be between only 0.5 feet (MH-12) and 1.5 feet (MH-11 and MH-13). Manhole MH-16 has a bottom 2.3 feet above the invert of manholes MH-1 through MH-5, and had a measured water column of 3.4 feet, comparable with the manholes in South Marina Drive.

Photos of manholes MH-1 through MH-5, and MH-11 through MH-16 located at the site are included within **Attachment 3**.

Sediment Thickness and Observations

During the September and October 2021 sampling rounds, manholes MH-1 through MH-5 had sediment ranging in thickness between approximately 1 and 4 inches. The sediment sampled was observed to be black fine sands or black silty sands. Oily sheens were observed on the water surface of manholes MH-1 and MH-3. A rotten egg odor was observed at manholes MH-2 and MH-4.

During the October 2021 and November sampling rounds, manholes MH-14 and MH-15 had trace amounts of sediment (<1/4") that were not measurable. The sediment was observed to be a black fine sand.

During the April 2022 sampling rounds, sediment ranging in thickness between approximately 2 to 9 inches at manhole MH-11 and 1 to 5 inches at manhole MH-13. Manhole MH-12 had a trace amount of sediment (<1/4") that was not measurable. Thickness of sediment and organic debris (i.e. leaves and grass) was observed to be between approximately 14 and 19 inches at manhole MH-16.

The thicker sediment accumulation at manholes MH-11, MH-13, and MH-16 are partially due to the fact that these are all open grate catch basins, with varying amounts of grass/leaves. A large amount of organic

debris was found on top of the sediment within manhole MH-16. The sediment was observed to be a black fine to silty sand within manholes MH-11, MH-12, and MH-13. The sediment at manhole MH-16 was observed to be a black coarse sand.

Details of the sediment observation are presented within **Table 1**. The sediment measurements are shown as **Figure 7**.

In-Situ Parameter Measurements

In-situ water quality parameters were measured within each manhole for temperature, dissolved oxygen, pH, redox potential, and specific conductance. The results are presented in **Table 2**.

Temperature: The temperature of the water within the manholes (MH-1 through MH-5, MH-14, and MH-14) varied between 18.5 and 20.2 degrees Celsius (°C) in September and October 2021. Comparably, the ambient air temperature was between 18.9 °C (October 2021) and 22.2°C (September 2021). The temperature of the water within the manholes on the 1982 S. Hilbert Street property (MH-11, MH-13, and MH-16) varied between 4.4 and 6.3 °C in April 2022, and ambient air temperature was approximately 6 to 7 °C. The temperature variations at the manholes appear to be directly correlated to the ambient air temperature.

Dissolved Oxygen: The dissolved oxygen (DO) of the water in manholes (MH-1 through MH-5) along South Marina Drive varied between 0.81 and 5.84 milligrams per liter (mg/L) in September and October 2021. The manholes on the 427 E. Stewart Street property (MH-14 and MH-15) measured DO concentrations between 6.16 and 6.87 mg/L. The manholes on the 1982 S. Hilbert Street property (MH-11, MH-13, and MH-16) measured DO concentrations 8.55 and 13.06 mg/L. Manhole MH-12 contained very little water and in-situ measurements were not measured.

The DO concentrations at manholes MH-1 through MH-5 appear to be within normal range. The elevated concentrations within manholes MH-14 and MH-15 could be attributed to slight rain observed during the October 2021 sampling event, lower water levels within the manholes, and lower temperatures.

The elevated DO concentrations on the 427 E. Stewart Street property can be attributed to the fact that manholes MH-11, MH-13, and MH-16 are open-grate catch basins, and surface flow of precipitation during rain events expected to result in aeriation and high oxygen content.

pH: The pH values of the water within the manholes were measured between 7.21 and 8.56, at slightly alkaline levels between September 2021 and April 2022. The pH values are indicative of background conditions of pH within stormwater.

Redox Potential: The redox potential for the water within the manholes was measured between +64.5 and +205.3 millivolts (mV) between September 2021 and April 2022. These values are indicative of a background conditions of redox potential within stormwater.

Specific Conductance: The specific conductance values of the water within the manholes (MH-1 through MH-5, and MH-11 through MH-16 were measured between 0.066 and 1.10 milliSiemens per centimeter (mS/cm). The values are within the normal range of surface water and groundwater.

Manhole Sediment Quality

Review of the analytical data (**Table 3**) for sediment samples collected from manholes along the storm sewer system within the South Marina Drive right-of-way (MH-1 through MH-5) indicates low-level PCB impacts (<1 ppm) are present within sediment accumulated at manhole MH-5 along the storm sewer line (0.138 ppm in December 2018, 0.261 ppm in September 2021). However, detections of PCB impacts greater than 1 ppm were reported within the samples collected from the four other manholes (MH-1 to MH-4) with total PCB concentrations ranging between 1.769 ppm and 93.2 ppm in the December 2018 sampling event, and between 5.27 and 14.09 ppm during the most recent sampling round. During the initial sampling event in December 2018 the relatively high concentration of PCBs (93.2 ppm) was detected at MH-4. The detected concentration exceeded the 50 ppm regulatory limit, which requires management of the material under the TSCA regulations. However, subsequent three rounds of sampling confirmed that PCB concentrations within sediment sampled at MH-4 are significantly below TSCA threshold of 50 ppm (8.92 ppm in August 2020, 11.19 ppm in November 2020, and 12.55 ppm in September 2021).

Review of the sediment sample results indicates low-level PCB impacts are present within sediment accumulated at manholes (MH-11 through MH-13, and MH-16) on the 1982 S. Hilbert Street property (off-site property). The single detection of PCBs concentration of 0.301 ppm was reported within a sediment sample collected at manhole MH-12 on the property. However, it should be noted that the remaining samples collected at manholes MH-11, MH-13, and MH-16 were diluted (20x) to compensate matrix interference and the results were reported non-detect due to a higher detection limit. Manholes MH-11, MH-13, and MH-16 are open grate catch basins where the presence of organic materials (rotten leaves, grass clippings etc.) were observed to accumulate. (Based on Sigma's discussion with the analytical laboratory, Synergy Environmental Lab] the presence of decomposed organic matter in the manhole likely generated sulfide compounds resulting in matrix interference.) Due to the high dilution factor the limit of detections was elevated. Therefore, future analysis of sediment samples from these manholes should be performed using appropriate laboratory method to compensate for the presence of sulfide compounds.

Review of the analytical data generated from the storm sewer system within the 427 E. Stewart Street property (off-site; former Louis Allis property) indicates concentrations of PCB impacts greater than 1 ppm were reported within the samples collected from manholes MH-14 and MH-15 with total PCB concentrations ranging between 6.23 ppm and 120 ppm. During the initial sampling event in October 2021 PCBs at 120 ppm was detected at MH-15. The detected concentration exceeded the 50 ppm TSCA threshold. The subsequent round of sampling reported a concentration of 57.4 ppm at manhole MH-14 (greater than the 50-ppm regulatory limit), and 25.48 ppm at manhole MH-15.

Review of the previous sediment sample results indicated low-level PCB impacts (<1 ppm) are present within sediment accumulated at manholes along the combined sewer line (MH-6, MH-8, and MH-9). These impacts are not expected to be a source to the South Marina Drive sewer, as the combined sewer line has been disconnected from the storm sewer line since 1986.

Attached **Figure 8** presents the distribution of PCBs detected within manhole sediment samples collected at the Site. Copies of the laboratory analytical reports for sediment samples collected from September 2021 through April 2022 are included as **Attachment 4.**

Manhole Water Quality

Review of the water sample results (**Table 4**) indicates no PCBs were detected within water sampled from manholes MH-3 and MH-4 greater than the laboratory limit of detection (LOD). However, total PCBs in water was reported at concentrations greater than the laboratory LOD within manholes MH-1, MH-2, and MH-5 along the South Marina Drive storm sewer. Concentrations ranged from 0.072 (MH-1) to 0.35 (MH-5) parts per billion (ppb).

Concentrations of PCBs were reported within water samples collected from the 1982 S. Hilbert Street property between 0.0078 ppb (MH-13 and MH-16) and 0.11 ppb (MH-11).

Reported concentrations of PCBs greater than the laboratory LOD were detected within water samples collected at manholes MH-14 and MH-15 at the 427 E. Stewart Street property. Concentrations ranged from 0.41 (MH-14) to 0.72 (MH-15) parts per billion (ppb). The higher concentrations within water correspond with the high concentrations of PCBs reported within the sediment at concentrations greater than the TSCA threshold.

The water analytical data collected from the manholes was compared to the NR 105 surface water standard for PCBs based on toxicity to wildlife (section NR 105.07, Wisconsin Administrative Code), as requested by the WDNR (project update meeting on June 15, 2022). Each of the detected concentrations of PCBs exceed the NR 105 surface water standard for PCBs.

Attached **Figure 9** presents the distribution of PCBs detected within manhole water samples collected at the Site. Copies of the laboratory analytical reports for water samples collected from September 2021 through April 2022 are included as **Attachment 5.** (The initial September 2021 water samples was included on the same chain-of-custody as the sediment samples and is included in the lab report in **Attachment 4**.)

Sewer Backfill Soil Quality

Review of the PCB soil analytical results from soil samples MH-1-BF and MH-2-BF indicate that no PCB impacts are present outside the storm sewer pipe near manholes MH-1 and MH-2.

However, review of the storm sewer backfill soil analytical data (**Table 5**) indicates reported concentrations of PCBs greater than the NR 720 Groundwater Pathway Residual Contaminant Level (RCL) (Chapter NR 720, Wisconsin Administration Code) within saturated soil samples MH-3-BF (0.012 mg/kg, noted by the laboratory to be between the laboratory LOD and laboratory limit of quantitation (LOQ)) and MH-4-BF (0.027 mg/kg). Based on the backfill soil analytical results, it is evident that PCB impacts are present outside the manholes MH-3 and MH-4. Considering the proximity of the soil impacts,and low level concentrations, it is likely that PCBs were released from the manholes migrated through leaky joints and cracks of sewer pipes at the manholes. The detected PCB concentrations in soil are significantly lower than the direct contact threshold values.

Attached **Figure 10** presents the distribution of PCBs detected within sewer backfill samples collected at the Site. Copies of the laboratory analytical reports for sewer backfill soil samples collected from September 2021 are included in **Attachment 6.**

Water Level Monitoring

The water levels measured over the month-long recording period were compared with precipitation data collected from the MMSD's Jones Island location to determine if changes in the water level within the Skipper Bud's slip could potentially causing inflow in the storm sewer and resulting sediment deposition upstream of the outfall. This plot is shown on **Figure 11**.

Review of the data for the four level loggers is directly correlated with levels of precipitation, which varied between 0.01 and 0.58 inches. Significant water level rises were correlated well with large precipitation events.

During the largest rain event of 0.58 inches, the following elevations were measured:

- Manhole MH-14: 584.36 feet MSL
- Manhole MH-4: 583.30 feet MSL
- Manhole MH-1: 583.04 feet MSL
- Logger SLIP: 582.69 feet MSL

Based on the elevation measurements, during the maximum precipitation event, the sewer water flow appears downstream still towards the slip.

A single event was identified in October 2021, where a water level rise occurred within the manholes during a dry day. The water level rose approximately 1.60 to 1.64 feet at the slip, manhole MH-1, and manhole MH-4. This sudden increase in the water level may be attributed to a surge of unknown origin within the system. This plot is shown on **Figure 12.**

CONCLUSIONS

Additional PCB assessment activities completed between September 2021 and April 2022 were performed in accordance with the work plan submitted in June 2021 to the WDNR and the USEPA.

The purpose of the additional investigation activities was to:

(1) Evaluate potential source(s) contributing PCB impacted sediment to the South Marina Drive storm sewer;
(2) Further define the PCB impacts upstream of the South Marina Drive storm sewer;
(3) Determine if PCBs have impacted the sewer backfill through potential sewer leaks; and,
(4) Collect water level data at the request of WDNR from select manholes and the sewer outfall over an extended period of time to evaluate the effect of the fluctuating Kinnickinic River/Lake Michigan water level elevation to the storm sewer flow and resulting sediment transport.

Based on the completed activities the following conclusions are provided:

1. Potential Off-Site Source(s)

Review of the regulatory agency records and historical land use record indicates that both the 1982 S. Hilbert Street property and 427 E. Stewart Street properties are potential upstream sources of historical PCB contamination. Review of the recent data collected from these sites also identifies the presence of PCBs.

- 1982 S. Hilbert Street: The historic use of PCBs related to transformers at the property is documented and concentrations of PCBs up to 22 ppm were identified during historic site investigation activities (BRRTS #02-41-427282 - 1977 S ALLIS ST COMPLEX case file). The recent sampling identified relatively low concentrations of PCBs within both sediment and water within one of the four on-site manholes that were sampled. It is unclear if the historical PCB release(s) at the site contributed the low-level PCB impacts detected within the manhole samples.

  It is important to note that sediment samples collected from three manholes were diluted (20x) to compensate for matrix interference (likely due to high sulfide compounds in the sample per the laboratory) and the results were reported non-detect due to a higher detection limit. These manholes are open grate catch basins where the presence of organic materials (rotten leaves, grass clippings etc.) were observed to accumulate and likely generated the noted interfering sulfide compounds. Future analysis of samples from these manholes should be performed using appropriate laboratory method to compensate for the presence of sulfide.

- 427 E. Stewart Street: Historical sampling identified PCB impacts to soil and other media within and outside the facility at concentrations greater than the TSCA threshold, and the property formerly contained diecast operations (a potential source of PCBs) associated with the former Louis Allis facility (BRRTS # 02-41-001137 MAGNETEK INC – former case file). The recent sampling at the property has identified PCB impacts within the manhole sediment ranging between 6.23 ppm and 120 ppm. The two rounds of sediment samples collected from the two manholes located on the property exceeded the TSCA threshold one time each. In addition, relatively high concentrations of PCBs were detected within the water samples collected from the manholes (0.41 ppb to 0.72 ppb). The detected concentrations exceed the NR 105 surface water standard for PCBs.

2. PCB Impacts to Sewer Backfill

The soil analytical results from the storm sewer backfill samples indicate PCBs are present at two of the four manhole locations (MH-3 and MH-4). Considering the proximity of the soil impacts, it is likely that PCB-impacted material from the manholes migrated through leaky joints and/or cracks within sewer pipes. The detected PCB concentrations ranging from 0.012 J ppm to 0.027 ppm within the backfill soil are significantly less than the non-industrial direct contact RCL of 0.234 ppm for soil.

3. Water Level Observation

Review of the data for the four level loggers is directly correlated with levels of precipitation, which varied between 0.01 and 0.58 inches. Significant water level rises also correlated well with large precipitation events, and storm sewer water still appears to flow towards the slip during large precipitation events. A single surge of unknown origin was reported in late October 2021 not related to a precipitation event.

RECOMMENDATION

Review of the multiple rounds of sediment and water sampling activities completed along the South Marina Drive and select off-site upstream storm sewer manholes provides the following recommendations:

- Further investigation and if necessary, implementation of appropriate remedial measures are recommended for the property owners of the potential off-site sources:
    1. 427 East Stewart Street – a facility with historical diecast operations
    2. 1982 South Hilbert Street – a release in a former transformer area

- No additional investigation or remediation is recommended for the sewer backfill material considering the detected PCB concentrations are well below the non-industrial direct contact threshold.

- No additional investigation is recommended for the South Marina Drive storm sewer and manholes located within the city right of way. Sigma recommends evaluation and implementation of cleanup of PCB impacted sediment within the South Marina Drive storm sewer and manholes located within the city right of way.

  It is important to note that the cleanup of the storm sewer along the South Marina Drive would not be effective if the potential upstream sources (427 East Stewart Street property and 1982 South Hilbert Street property) continue to contribute potentially PCB impacted sediments to the system. Therefore, the investigation and remediation efforts need to be completed by the respective property owners of the off-site properties prior to the cleanup of the sewer system along the South Marina Drive right of way.

Please call us at (414) 643-4200 if you have any questions or would like to discuss.

Sincerely,

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Attachments

Table 1 – Manhole Condition Observation and Sampling Activities
Table 2 – Summary of MH Sediment Analytical Results
Table 3 – Water Analytical Results
Table 4 – Summary of Storm Sewer Backfill Soil Analytical Results
Table 5 – Storm Sewer Manhole In Situ Measurements

Figure 1 – Storm Sewer Map
Figure 2 – Historical Use
Figure 3 – Historical Shoreline and Wetlands
Figure 4 – Sewer Backfill Boring Layout Map
Figure 5 – Level Logger Location Map
Figure 6 – Storm Sewer Cross Section (SLIP to MH-15)
Figure 7 – Sediment Thickness (South Marina Drive System)
Figure 8– Storm Sewer Sediment Quality Map (PCBs)
Figure 9 – Storm Sewer Water Quality Map (PCBs)
Figure 10 – Sewer Backfill Boring Soil Quality Map
Figure 11– MH Water Elevation Data Over Time
Figure 12 – Water Level Rise On a Dry Evening, October 27, 2021

Attachment 1 – Sewer Backfill Boring Logs and Borehole Abandonment Forms
Attachment 2 – Sewer Backfill Boring Photographs
Attachment 3 – Manhole Assessment Activities and Conditions Photographs
Attachment 4 – Manhole Sediment Analytical Reports
Attachment 5 – Manhole Water Analytical Reports
Attachment 6 – Sewer Backfill Soil Lab Reports

TABLES

TABLE 1

Manhole Condition Observation and Sampling Activities
Sewer System at the South Marina Drive and East Stewart Street
South Marina Drive Storm Sewer - PCB Cleanup Project, Bay View, Milwaukee, Wisconsin
Sigma Project No. 19270

MH-1

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
12/20/18	2.8	8.8	6.0	23" solid manhole cover located within grass on east side of S. Marina Drive. In good condition. Water too deep to enter the manhole for sampling. Unable to obtain sediment sample due to high water column. Minimal sediment present. Standing water surface was observed to be cloudy with a visible sheen, and debris consisting of styrofoam, plastic, & metal particles with rust-like color floating on the water surface.
8/21/20	-	8.8	-	Minimal sediment present. A peristaltic pump was used to obtain sediment/water mixture in a bucket and sediment was allowed to settle. Water was decanted and a sediment sample was collected for PCB analysis. The sediment was observed to be be a coarse black sand material.
9/1/21	2.2	8.3	6.1	~ 0.75 to 3 inches of sediment measured with survey pole on east side and center channel. Significant amounts of litter, debris, & grass/branches were observed on the surface of the water within the manhole. A peristaltic pump was used to obtain the sediment/water mixture from the bottom of the hole (tubing attached to pole) and the mixture was placed into a decontaminated bucket to allow sediment/water separation. Water was decanted and a sediment sample was collected for PCB analysis. The sediment sample was observed to be black fine sand material with few coarse sand (angular grains) and little roots. A sheen was noted during sample collection. A grab water sample was also collected from the manhole using a peristaltic pump.
10/4/21	2.6	8.4	5.8	Litter, debris, & grass observed on the surface of the water within the manhole. A grab water sample was collected using a peristaltic pump for analysis of PCBs. No sediment sample was collected.

MH-2

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
12/20/18	3.0	8.4	5.4	23" solid manhole cover located within grass on east side of S. Marina Drive. In good condition. Water too deep to enter the manhole for sampling. Unable to obtain sediment sample due to high water column. Minimal sediment present. Standing water surface was observed to be turbid with a visible sheen, and debris consisting of styrofoam, plastic, & metal particles with rust-like color floating on the water surface.
8/21/20	-	8.4	-	Minimal sediment present. Peristaltic pump was used to obtain sediment/water mixture in a bucket and sediment was allowed to settle. Water was decanted and a sediment sample was collected for PCB analysis. The sediment sample was observed to be coarse black sand material.
9/1/21	2.1	8.5	6.4	1.5 to 1.75 inches of sediment measured with survey pole in eastern and southern portions of the manhole. Some debris was observed on the surface of the water within the manhole, which was cleared out to facilitate sampling of the sediment at the base of the manhole. A slight sulfuric odor was observed. A decontaminated pivoting dustpan attached to a decontaminated survey pole was lowered to the bottom of the manhole to collect the sample. The sediment sample was noted to be wet, black, medium to fine sand material with little silt.
10/4/21	2.3	8.1	5.9	Some debris was observed on the water surface within the manhole. A grab water sample was collected using a peristaltic pump for analysis of PCBs. No sediment sample was collected.

TABLE 1

Manhole Condition Observation and Sampling Activities
Sewer System at the South Marina Drive and East Stewart Street
South Marina Drive Storm Sewer - PCB Cleanup Project, Bay View, Milwaukee, Wisconsin
Sigma Project No. 19270

MH-3

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
12/20/18	3.5	7.2	3.7	23" solid manhole cover located within grass on east side of S. Marina Drive. In good condition. Water too deep to enter the manhole for sampling. Unable to obtain sediment sample due to high water column. Minimal sediment present. Standing water surface was observed to be turbid with a visible sheen, and debris consisting of styrofoam, plastic, & metal particles with rust-like color floating on the water surface.
8/21/20	-	7.2	-	Minimal sediment present. A peristaltic pump was used to obtain sediment/water mixture in a bucket and sediment was allowed to settle. The sediment was observed to be coarse black sand material. Water was decanted and a sediment sample was collected for PCB analysis.
9/1/21	2.8	7.0	4.2	3.25 to 3.75 inches of sediment present in the western and central portions of the manhole. Stones, coarse sand, and foam were observed on the water surface. A sheen was noted within the manhole. A peristaltic pump was used to obtain the sediment/water mixture from the bottom of the hole (tubing attached to pole) and the mixture was placed into a bucket to allow sediment/water separation. The water was decanted with aid of a cheesecloth and a sediment sample was collected for PCB analysis. A grab water sample was also collected from the manhole using a perstaltic pump. A large rock was pulled from the bottom of the manhole. The sediment was noted to be wet black fine sand material with few coarse to medium sand, little silt, & little grass.
10/4/21	3.3	7.2	3.9	Some debris and litter was observed on the surface of the water within the manhole. A grab water sample was collected using a peristaltic pump for analysis of PCBs. No sediment sample was collected.

TABLE 1

Manhole Condition Observation and Sampling Activities
Sewer System at the South Marina Drive and East Stewart Street
South Marina Drive Storm Sewer - PCB Cleanup Project, Bay View, Milwaukee, Wisconsin
Sigma Project No. 19270

MH-4

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
12/20/18	5.4	7.8	2.4	23" solid manhole cover located within grass on th east side of S. Marina Drive. In good condition. 32" main channel with 12" inlet coming from the west. Standing water was observed to be cloudy, no visible sheen, and no odor. 1 -2 inches of sediment present. A sediment sample was collected by a decontaminated shovel after entering the manhole.
8/21/20	-	7.8	-	1 -2 inches of sediment present. A sediment sample was collected using a decontaminated pivoting dustpan without entering the manhole. The sediment sample was observed to be coarse black sand material.
10/9/20	4.6	7.8	3.2	1 - 2 inches of sediment present. No sediment sample was collected.
10/20/20	4.5	7.8	3.3	1 - 2 inches of sediment present. No sediment sample was collected.
11/4/20	4.2	7.8	3.6	1 - 2 inches of sediment present. No sediment sample was collected.
11/19/20	4.4	7.8	3.4	1 - 2 inches of sediment present at the bottom. Sediment sample was collected using a decontaminated long handle scoop without entering the manhole. A grab water sample was collected using a peristaltic pump for analysis of PCBs.
11/4/20	4.2	7.8	3.6	1 - 2 inches of sediment present. No sediment sample was collected.
11/19/20	4.4	7.8	3.4	1 - 2 inches of sediment present at the bottom. Sediment sample was collected using a decontaminated long handle scoop without entering the manhole. A grab water sample was collected using a peristaltic pump for analysis of PCBs.
9/1/21	4.7	7.8	3.1	1 inch of sediment present in the center channel. No debris was noted on the surface of the water within the manhole. The water was noted to be black and turbid. The manhole had a rotten egg odor. Sediment sample was collected using a decontaminated pivoting dustpan attached to a decontaminated survey pole, and the volume of sediment was sufficient for a sample. The sediment was observed to be a wet, black silty fine sand with few grass. A grab water sample was collected using a peristaltic pump for analysis of PCBs.
10/4/21	5.0	7.6	2.6	A grab water sample was collected using a peristaltic pump for analysis of PCBs. No sediment sample was collected.
10/11/21	5.0	7.8	2.8	0.5 - 3.5 inches of sediment present at the bottom. Specifically, 0.5 inches was measured near the south invert, 3.5 inches of sediment was measured near the west inlets behind the ladder, and sediment was measured to be absent near the northern invert. A sheen was observed on the water surface. The north and south inverts were visible. No sediment sample nor water sample was collected.

TABLE 1

Manhole Condition Observation and Sampling Activities
Sewer System at the South Marina Drive and East Stewart Street
South Marina Drive Storm Sewer - PCB Cleanup Project, Bay View, Milwaukee, Wisconsin
Sigma Project No. 19270

MH-5

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
12/20/18	-	-	-	Manhole could not be located. A nearby curbside catch basin was used to collect sediment representing manhole MH-5.
8/21/20	-	9.9	-	Manhole was located and no sediment was present.
10/9/20	7.6	9.9	2.3	No sediment present.
10/20/20	6.6	9.9	3.3	No sediment present.
11/4/20	7.0	9.9	2.9	No sediment present.
11/19/20	7.6	9.9	2.3	No sediment present. A grab water sample was collected using a peristaltic pump for analysis of PCBs.
9/2/21	7.0	9.6	2.6	1 inch of sediment in central trench. No sediment on eastern sloped side. Water was mostly clear. A peristaltic pump was used to obtain the sediment/water mixture from the bottom of the hole (tubing attached to pole) and the mixture was placed into a decontaminated bucket to allow sediment/water separation. Water was decanted and a sediment sample was collected for PCB analysis. The sediment was observed to be a very wet, black silty sand with few coarse sand (angular grains), trace grass, & no odor. A grab water sample was also collected from the manhole using a peristaltic pump.
10/4/21	7.3	9.4	2.1	A grab water sample was collected using a peristaltic pump for analysis of PCBs. No sediment sample was collected.

TABLE 1

Manhole Condition Observation and Sampling Activities
Sewer System at the South Marina Drive and East Stewart Street
South Marina Drive Storm Sewer - PCB Cleanup Project, Bay View, Milwaukee, Wisconsin
Sigma Project No. 19270

MH-6

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
12/20/18	Trickle	5.1	-	23" solid manhole cover within intersection of E. Stewart Street & S. Marina Drive. In good condition. Trickle discharge was clear with no odor nor sheen. Sampler entered the manhole and collected a sediment sample by scraping the bottom with a decontaminated hand scraper tool.
10/9/20	Trickle	5.1	-	No sediment present.
10/20/20	Trickle	5.1	-	No sediment present.
11/4/20	Trickle	5.1	-	No sediment present.
11/19/20	Trickle	5.1	-	No sediment present. A grab water sample was collected using a peristaltic pump for analysis of PCBs.

MH-7

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
12/20/18	-	-	-	Manhole could not be found.

MH-8

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
12/20/18	Trickle	7.5	-	23" solid manhole cover within center of S. Allis Street, and curbside catch basins on both sides. Main channel (20" north, 12" south). Two 8" PVC inlets. Trickle discharge was observed to be clear to slightly cloudy with no odor nor sheen. Sampler entered the manhole and collected a sediment sample from the channel and bench by scraping the bottom with a decontaminated hand scraper tool.

MH-9

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
12/20/18	Trickle	8.0	-	23" solid manhole cover within E. Stewart Street. In good condition. Catch basin adjacent along curb. Main channel (36"), and one southwest 12" PVC inlet. Trickle discharge was cloudy with no odors nor sheen. Sampler entered the manhole and collected a sediment sample by scraping the bottom with a decontaminated hand scraper tool.

MH-10

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
12/20/18	Trickle	9.0	-	23" solid manhole cover within Hilbert Street. Catch basin adjacent along curb. In good condition. Minimal sediment (not measurable). Trickle discharge was cloudy with no odors nor sheen. Sampler entered the manhole and collected a sediment sample by scraping the bottom with a decontaminated hand scraper tool.

TABLE 1

Manhole Condition Observation and Sampling Activities
Sewer System at the South Marina Drive and East Stewart Street
South Marina Drive Storm Sewer - PCB Cleanup Project, Bay View, Milwaukee, Wisconsin
Sigma Project No. 19270

MH-11
(CB)

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
4/4/22	5.05	6.5	1.5	Sediment thickness varied between approximately 2 and 9 inches. A grab water sample was collected using a peristaltic pump for analysis of PCBs. A new pivoting dustpan attached to a decontaminated survey pole was lowered to the bottom of the manhole to collect a sediment sample. The sediment sample was observed to be a black silty sand.

MH-12

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
4/4/22	5.32	5.8	0.5	Trace amounts of sediment (not measurable) accumulated on top of the concrete trench. A grab water sample was collected from the manhole using a peristaltic pump. A peristaltic pump was used to obtain the sediment/water mixture from the bottom of the hole (tubing attached to pole) and the mixture was placed into a new 3-gallon bucket to allow the sediment to settle. Water was decanted and a sediment sample was collected for PCB analysis. The sediment sample was observed to be a black silty sand.

MH-13
(CB)

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
4/4/22	4.80	6.3	1.5	Sediment thickness varied between 1 and 5 inches. A grab water sample was collected using a peristaltic pump for analysis of PCBs. A new pivoting dustpan attached to a decontaminated survey pole was lowered to the bottom of the manhole to collect a sediment sample. The sediment sample was observed to be a black silty sand.

TABLE 1

Manhole Condition Observation and Sampling Activities
Sewer System at the South Marina Drive and East Stewart Street
South Marina Drive Storm Sewer - PCB Cleanup Project, Bay View, Milwaukee, Wisconsin
Sigma Project No. 19270

MH-14

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
10/4/21	7.0	7.2	0.2	Trace amounts of sediment (not measurable) were found at the bottom of the manhole. A grab water sample was collected using a peristaltic pump for analysis of PCBs. A peristaltic pump was used to obtain the sediment/water mixture from the bottom of the manhole (tubing attached to a decontaminanted survey range pole) and the mixture was placed into a new 5-gallon bucket to allow the sediment to settle. Water was decanted and a sediment sample was collected for PCB analysis. The sediment was observed to be a black fine sand.
11/12/21	---	---	---	Sediment sample collected using a decontaminanted dustpan attached to a pole. No water sample was collected.

MH-15

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
10/4/21	4.5	4.6	0.1	Trace amounts of sediment (not measurable) were found at the bottom of the manhole. A grab water sample was collected using a peristaltic pump for analysis of PCBs. A peristaltic pump was used to obtain the sediment/water mixture from the bottom of the hole (tubing attached to pole) and the mixture was placed into a decontaminated 5-gallon bucket to allow the sediment to settle. Water was decanted and a sediment sample was collected for PCB analysis. The sediment was observed to be a black fine sand.
11/12/21	---	---	---	A peristaltic pump was used to obtain sediment/water mixture in a decontaminated bucket and sediment was allowed to settle. Water was decanted and a sediment sample was collected for PCB analysis. No water sample was collected.

MH-16
(CB)

Date	Depth to Water (feet TOR)	Manhole Depth (feet TOR)	Water Column (feet)	Observations/Comments
4/7/22	1.62	5.0	3.4	A thick layer of leaves and sediment was measured (approximately 13 to 18 inches) within the manhole. A grab water sample was collected using a peristaltic pump for analysis of PCBs. An open disposable plastic container attached to a survey pole was lowered to the bottom of the manhole to collect a sediment sample. The sediment was observed to be a black coarse sand material. Roots, grass, and abundant amounts of leaves were also observed.

Notes:
1. feet TOR = feet from top of rim
2. *CB* = Catch basin (round)

Data entered / updated by: JRS Date: 7/26/22

Data checked by: MI Date:

TABLE 2

Summary of MH Sediment Analytical Results

South Marina Drive Sewer - PCB Cleanup Project, Bayview, Milwaukee, Wisconsin

Project # 19270

STREET/PROPERTY:		SOUTH MARINA DRIVE												Consensus Based Sediment Quality Guidelines			Ch. NR 720 Soil Residual Contaminant Levels		
Sediment Sample Location:		MH-1		MH-2		MH-3		MH-4				MH-5		Threshold Effect Concentration (TEC)[4]	Midpoint Effect Concentration (MEC)[5]	Probable Effect Concentration (PEC)[6]	Groundwater Pathway RCL[7]	Non-Industrial Direct Contact RCL[8]	Industrial Direct Contact RCL[9]
Depth to Bottom (feet):		8.83		8.42		7.17		7.83				9.83							
Sample Collection Date:		8/21/20	9/1/21	8/21/20	9/1/21	8/21/20	9/1/21	12/20/18	8/21/20	11/19/20	9/1/21	12/20/18	9/2/21						
PCBs																			
PCB-1016	mg/kg	<0.0118	< 0.0236	<0.0118	< 0.0236	<0.0118	< 0.0236	<0.53	<0.0118	<0.0118	< 0.0236	<0.0060	< 0.0118	NS	NS	NS	NS	4.11	28
PCB-1221	mg/kg	<0.0118	< 0.0236	<0.0118	< 0.0236	<0.0118	< 0.0236	<0.93	<0.0118	<0.0118	< 0.0236	<0.011	< 0.0118	NS	NS	NS	NS	0.213	0.883
PCB-1232	mg/kg	<0.0118	< 0.0236	<0.0118	< 0.0236	<0.0118	< 0.0236	<0.93	<0.0118	<0.0118	< 0.0236	<0.011	< 0.0118	NS	NS	NS	NS	0.19	0.792
PCB-1242	mg/kg	**6.06**	< 0.0236	**1.19**	< 0.0236	**1.92**	< 0.0236	<0.80	**5.05**	**5.07**	< 0.0236	<0.0090	< 0.0118	NS	NS	NS	NS	0.235	0.972
PCB-1248	mg/kg	<0.0074	**3.66**	<0.0074	**4.35**	<0.0074	**9.13**	<0.67	<0.0074	<0.0074	**8.55**	<0.0075	**0.180**	NS	NS	NS	NS	0.236	0.975
PCB-1254	mg/kg	<0.0074	< 0.0148	<0.0074	< 0.0148	<0.0074	< 0.0148	**55.8**	<0.0074	**6.12**	< 0.0148	<0.0075	< 0.0074	NS	NS	NS	NS	0.239	0.988
PCB-1260	mg/kg	**6.76**	**1.61**	**0.579**	**1.71**	**2.17**	**4.96**	**37.4**	**3.87**	<0.0074	**4.00**	**0.138**	**0.081**	NS	NS	NS	NS	0.243	1
PCB-Total	mg/kg	**12.82**	**5.27**	**1.769**	**6.06**	**4.09**	**14.09**	**93.2**	**8.92**	**11.19**	**12.55**	***0.138***	***0.261***	0.06	0.368	0.676	0.0094	0.234	0.967

STREET/PROPERTY:		EAST STEWART STREET				1982 S. HILBERT STREET PROPERTY				427 E. STEWART STREET PROPERTY (FORMER LOUIS ALLIS COMPANY)				Consensus Based Sediment Quality Guidelines			Ch. NR 720 Soil Residual Contaminant Levels		
Sediment Sample Location:		MH-6	MH-8	MH-9	MH-10	MH-11	MH-12	MH-13	MH-16	MH-14		MH-15		Threshold Effect Concentration (TEC)[4]	Midpoint Effect Concentration (MEC)[5]	Probable Effect Concentration (PEC)[6]	Groundwater Pathway RCL[7]	Non-Industrial Direct Contact RCL[8]	Industrial Direct Contact RCL[9]
Depth to Bottom (feet):		5.17	7.5	8.0	9.0	6.5	5.8	6.3	5.0	7.20		4.65							
Sample Collection Date:		12/20/18	12/20/18	12/20/18	12/20/18	4/4/22	4/4/22	4/4/22	4/7/22	10/4/21	11/12/21	10/4/21	11/12/21						
PCBs																			
PCB-1016	mg/kg	<0.0049	<0.0062	<0.0049	<0.0064	< 0.565	**0.149**	< 0.596	< 0.576	< 0.0118	< 0.0236	< 0.0118	< 0.0118	NS	NS	NS	NS	4.11	28
PCB-1221	mg/kg	<0.0085	<0.011	<0.0085	<0.011	< 3.09	< 0.146	< 3.26	< 3.15	< 0.0118	< 0.0236	< 0.0118	< 0.0118	NS	NS	NS	NS	0.213	0.883
PCB-1232	mg/kg	<0.0085	<0.011	<0.0085	<0.011	< 3.09	< 0.146	< 3.26	< 3.15	< 0.0118	< 0.0236	< 0.0118	< 0.0118	NS	NS	NS	NS	0.19	0.792
PCB-1242	mg/kg	<0.0073	<0.0093	<0.0073	<0.0096	< 3.09	< 0.146	< 3.26	< 3.15	**2.20**	< 0.0236	< 0.0118	**9.68**	NS	NS	NS	NS	0.235	0.972
PCB-1248	mg/kg	<0.0061	<0.0078	<0.0061	<0.0080	< 3.09	< 0.146	< 3.26	< 3.15	< 0.0074	**34.8**	< 0.0074	< 0.0074	NS	NS	NS	NS	0.236	0.975
PCB-1254	mg/kg	**0.144**	**0.746**	**0.661**	<0.0080	< 3.09	< 0.146	< 3.26	< 3.15	< 0.0074	< 0.0148	< 0.0074	< 0.0074	NS	NS	NS	NS	0.239	0.988
PCB-1260	mg/kg	**0.0732**	**0.179**	**0.199**	<0.0048	< 0.381	**0.152**	< 0.403	< 0.389	**4.03**	**22.6**	**120**	**15.8**	NS	NS	NS	NS	0.243	1
PCB-Total	mg/kg	***0.2172***	**0.925**	**0.860**	---	---	**0.301**	---	---	**6.23**	**57.4**	**120**	**25.48**	0.06	0.368	0.676	0.0094	0.234	0.967

Notes:

1. Analytical units: mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)

2. NA = not analyzed

3. Threshold Effect Concentration = lower effect level (dry weight at 1% Total Organic Carbon (TOC) at which toxicity to benthic-dwelling organisms are predicted to be unlikely and probable as presented in Tables 1 through 4 in WDNR guidance document PUB-RR-088 "Consensus-Based Sediment Quality Guidelines - Recommendations for Use and Application", dated December 2003.

4. Midpoint Effect Concentration = the concentration (dry weight at 1% Total Organic Carbon (TOC) midway between the TEC and PEC concentrations at which toxicity to benthic-dwelling organisms are predicted to be unlikely and probable as presented in Tables 1 through 4 in WDNR guidance document PUB-RR-088 "Consensus-Based Sediment Quality Guidelines - Recommendations for Use and Application", dated December 2003.

5. Probable Effect Concentration = upper effect level (dry weight at 1% Total Organic Carbon (TOC) at which toxicity to benthic-dwelling organisms are predicted to be unlikely and probable as presented in Tables 1 through 4 in WDNR guidance document PUB-RR-088 "Consensus-Based Sediment Quality Guidelines - Recommendations for Use and Application", dated December 2003.

6. Groundwater Pathway RCL = Residual Contaminant Level for protection of groundwater (dilution factor of 2) as presented on the WDNR's RCL Spreadsheet (dated December 2018) referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014.

7. Non-Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at a non-industrial property as presented on the WDNR's RCL Spreadsheet (dated December 2018) with default input parameters as referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014.

8. Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at an industrial property as presented on the WDNR's RCL Spreadsheet (dated December 2018) with default input parameters as referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014.

9. NS = no standard established

10. Laboratory flags: "J" = Analyte detected between Limit of Detection and Limit of Quantitation

11. Exceedances: **BOLD** any exceedances of either the CBSQG's or RCLs

BOLD exceedance of the TSCA level standards

Data entered / updated by: JRS Date: 10/12/22

Data checked by: MI Date: 10/12/22

TABLE 3
Water Analytical Results
Sewer System at the South Marina Drive and East Stewart Street
South Marina Drive Storm Sewer - PCB Cleanup Project, Bay View, Milwaukee, Wisconsin
Sigma Project No. 19270

STREET/PROPERTY:		SOUTH MARINA DRIVE												Ch. NR 105 Surface Water Standards
Manhole Location:		MH-1		MH-2		MH-3		MH-4			MH-5			Wildlife Criteria [1, 2]
Date:		9/1/21	10/4/21*	9/1/21	10/4/21*	9/1/21	10/4/21*	11/19/20	9/1/21	10/4/21*	11/19/20	9/1/21	10/4/21*	
PCBs														
PCB-1016	µg/L	<0.269	<0.0048	<0.269	<0.0048	<0.269	<0.0048	<0.269	<0.269	<0.0048	<0.269	<0.269	<0.0048	NS
PCB-1221	µg/L	<0.269	<0.0058	<0.269	<0.0058	<0.269	<0.0058	<0.269	<0.269	<0.0058	<0.269	<0.269	<0.0057	NS
PCB-1232	µg/L	<0.269	<0.0053	<0.269	<0.0053	<0.269	<0.0053	<0.269	<0.269	<0.0053	<0.269	<0.269	<0.0052	NS
PCB-1242	µg/L	<0.269	<0.0036	<0.269	<0.0036	<0.269	<0.0036	<0.269	<0.269	<0.0036	<0.269	<0.269	<0.0036	NS
PCB-1248	µg/L	<0.173	<0.0030	<0.173	<0.0030	<0.173	<0.0030	<0.173	<0.173	<0.0030	<0.173	<0.173	0.35	NS
PCB-1254	µg/L	<0.173	0.072	<0.173	0.094	<0.173	<0.0046	<0.173	<0.173	<0.0046	<0.173	<0.173	<0.0046	NS
PCB-1260	µg/L	<0.173	<0.0040	<0.173	<0.0040	<0.173	<0.0040	<0.173	<0.173	<0.0040	<0.173	<0.173	<0.0039	NS
PCB-Total	µg/L	---	**0.072**	---	**0.094**	---	---	---	---	---	---	---	**0.35**	0.00012

STREET/PROPERTY:		EAST STEWART STREET	1982 S. HILBERT STREET PROPERTY				427 E. STEWART STREET PROPERTY (FORMER LOUIS ALLIS COMPANY)		Ch. NR 105 Surface Water Standards
Manhole Location:		MH-6	MH-11	MH-12	MH-13	MH-16	MH-14	MH-15	Wildlife Criteria [1, 2]
Date:		11/19/20	4/4/22*	4/4/22*	4/4/22*	4/7/22*	10/4/21*	10/4/21*	
PCBs									
PCB-1016	µg/L	<0.269	<0.0045	<0.0045	<0.0045	<0.0045	<0.0048	<0.0048	NS
PCB-1221	µg/L	<0.269	<0.0054	<0.0054	<0.0054	<0.0054	<0.0057	<0.0058	NS
PCB-1232	µg/L	<0.269	<0.0050	<0.0050	<0.0050	<0.0050	<0.0052	<0.0053	NS
PCB-1242	µg/L	<0.269	<0.0034	<0.0034	<0.0034	<0.0034	<0.0036	<0.0036	NS
PCB-1248	µg/L	<0.173	<0.0076	<0.0076	<0.0076	<0.0076	0.41	0.50	NS
PCB-1254	µg/L	<0.173	<0.0043	<0.0043	<0.0043	<0.0043	<0.0046	<0.0046	NS
PCB-1260	µg/L	<0.173	0.11	0.020	0.0078 J	0.0078 J	<0.0039	0.22	NS
PCB-Total	µg/L	---	**0.11**	**0.020**	**0.0078 J**	**0.0078 J**	**0.41**	**0.72**	0.00012

Notes:

1. Wildlife Criteria = Section NR 105.07, Wisconsin Administrative Code, *Table 7 Wildlife Criteria* - The wildlife criterion is the concentration of a substance which if not exceeded protects Wisconsin's wildlife from adverse effects resulting from ingestion of surface waters of the state and from ingestion of aquatic organisms taken from surface waters of the state.
2. Please note that the surface water standard for PCBs based on toxicity to wildlife was selected as the water quality standard for the Site because it was suggested by the WDNR during a project update meeting with USEPA and the City of Milwaukee on June 15, 2022.
3. NS = no standard NA = Not Analyzed
4. µg/L = micrograms per liter (equivalent to parts per billion, ppb)
5. Laboratory flags: "J" = Analyte detected between Limit of Detection and Limit of Quantitation.
6. Exceedances: **BOLD** = Concentration exceeds NR 105 wildlife surface water standard
7. Special notes: * = Water samples were submitted to Eurofins Test America in Pittsburgh for low-level detection limits under EPA Method 8280A

Data entered / updated by: JRS Date: 6/27/22
Data checked by: MI Date: 10/12/22

TABLE 4
Summary of Storm Sewer Backfill Soil Analytical Results
South Marina Drive Storm Sewer - PCB Cleanup Project, Bayview, Milwaukee, Wisconsin
Sigma Project No. 19270

Soil Sample Location:		MH-1-BF	MH-2-BF	MH-3-BF	MH-4-BF	Groundwater Pathway RCL [4]	Non-Industrial Direct Contact RCL [5]	Industrial Direct Contact RCL [6]
Sample Depth (feet bgs):		7 - 8.5	7.4 - 8.1	6.67 - 7	5.75 - 6.83			
Sample Collection Date:		9/20/21	9/20/21	9/20/21	9/20/21			
Depth to Groundwater (feet bgs):		3.4	3.25	3.67	5.75			
Native Soil (N) or Fill / Reworked Soil (F):		F	F	F	F			
Unsaturated/Smear Zone (U) or Saturated (S):		S	S	S	S			
Photoionization Detector	ppm	0.0	0.0	0.0	0.2	NS	NS	NS
PCBs								
PCB-1016	mg/kg	< 0.0118	< 0.0118	< 0.0118	< 0.0118	NS	4.11	28
PCB-1221	mg/kg	< 0.0118	< 0.0118	< 0.0118	< 0.0118	NS	0.213	0.883
PCB-1232	mg/kg	< 0.0118	< 0.0118	< 0.0118	< 0.0118	NS	0.19	0.792
PCB-1242	mg/kg	< 0.0118	< 0.0118	< 0.0118	< 0.0118	NS	0.235	0.972
PCB-1248	mg/kg	< 0.0074	< 0.0074	< 0.0074	< 0.0074	NS	0.236	0.975
PCB-1254	mg/kg	< 0.0074	< 0.0074	< 0.0074	< 0.0074	NS	0.239	0.988
PCB-1260	mg/kg	< 0.0074	< 0.0074	0.012 J	0.027	NS	0.243	1
Total PCBs	mg/kg	<0.0694	<0.0694	**0.012 J**	**0.027**	0.0094	0.234	0.967

Notes:

1. Unsaturated/smear zone versus saturated soil conditions based on measured water levels in open HydroVac borehole.
2. Analytical units: mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
3. NA = not analyzed NS = no standard established
4. Groundwater Pathway RCL = Residual Contaminant Level for protection of groundwater (dilution factor of 2) as presented on the WDNR's RCL Spreadsheet (dated December 2018) referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014.
5. Non-Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at a non-industrial property as presented on the WDNR's RCL Spreadsheet (dated December 2018) with default input parameters as referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014.
6. Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at an industrial property as presented on the WDNR's RCL Spreadsheet (dated December 2018) with default input parameters as referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014.
7. Laboratory flags: "J" = Analyte detected between Limit of Detection and Limit of Quantitation
8. Exceedances:
   BOLD = Concentration exceeds Groundwater Pathway RCL
   [ ] = Concentration exceeds Non-Industrial Direct Contact RCL (any depth)
   { } = Concentration exceeds Industrial Direct Contact RCL (any depth)

Data entered / updated by: JRS Date: 10/15/21
Data checked by: MI Date: 10/12/22

TABLE 5
Storm Sewer Manhole *In Situ* Measurements
Sewer System at the South Marina Drive and East Stewart Street
South Marina Drive Storm Sewer - PCB Cleanup Project, Bay View, Milwaukee, Wisconsin
Sigma Project No. 19270

Manhole Identification	Date	In Situ Measurements				
		Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (mS/cm)	pH (S.U.)	Redox PotentiaL (mV)
MH-1	9/1/21 10/4/21	19.9 19.4	1.99 0.81	0.78 0.237	7.38 7.68	+ 174.2 + 148.7
MH-2	9/1/21 10/4/21	19.8 18.5	1.72 1.53	0.71 0.486	7.65 7.45	+ 113.9 + 147.9
MH-3	9/1/21 10/4/21	21.4 19.6	1.29 4.44	0.59 0.237	8.37 7.92	+ 71.6 + 192.5
MH-4	9/1/21 10/4/21	20.2 19.6	1.64 4.23	0.68 0.259	8.56 7.92	+ 64.5 + 186.3
MH-5	9/2/21 10/4/21	21.8 19.8	3.46 5.84	0.81 0.299	7.21 7.95	+ 177.0 + 189.5
MH-11 *CB*	4/4/22	5.4	8.55	1.10	7.48	+ 185.3
MH-12	4/4/22	NO IN-SITU READINGS - WATER TOO SHALLOW				
MH-13 *CB*	4/4/22	4.4	13.06	0.213	7.82	+ 205.3
MH-14	10/4/21	19.8	6.16	0.449	7.98	+ 170.1
MH-15	10/4/21	20.0	6.87	0.21	8.04	+ 156.9
MH-16 *CB*	4/7/22	6.3	11.89	0.066	7.73	+ 156.0

Notes:
1. *CB* = Catch basin (round)
2. ° C = degrees Celcius
3. mg/L = milligrams per liter (equivalent to parts per million, ppm)
4. mS/cm = millisiemens per centimeter
5. Specific conductance values were calculated using a temperature coefficient of 0.0191 from directly measured conductivity measurements.
6. mV = millivolts
7. NA = not analyzed

Data entered / updated by: JRS Date: 6/2/22
Data checked by: MI Date: 10/12/22

FIGURES

KINNICKINNIC RIVER

SKIPPER BUD'S SLIP

SOUTH HILBERT STREET

1982 S HILBERT ST

1919 S MARINA DR

S MARINA DR

E STEWART ST

E BECHER ST

S HILBERT ST

S ALLIS ST

SOO LINE/CANADIAN RAILROAD CO

NORTHWESTERN / UNION P.I.C. RAILROAD CO.

427 E STEWART ST

42" DIA STORM SEWER
OUTFALL IE: 576.79
(CURRENTLY
PARTIALLY BURIED)

MH-1 (CITY ID 466A043)
RIM ELEV: 584.02
36" CLAY N IE: 577.39
36" CLAY S IE: 577.39
DEPTH TO BOTTOM: 8.83'
WATER COLUMN: 5.8' TO 6.1'

MH-2 (CITY ID 466A042)
RIM ELEV: 583.84
36" CLAY N IE: 578.08
36" CLAY S IE: 578.08
DEPTH TO BOTTOM: 8.42'
WATER COLUMN: 5.4' TO 6.5'

MH-3 (CITY ID 466A041)
RIM ELEV: 583.96
36" CLAY N IE: 578.61
36" CLAY S IE: 578.61
DEPTH TO BOTTOM: 7.17'
WATER COLUMN: 3.7' TO 4.2'

MH-4 (CITY ID 466A040)
RIM ELEV: 586.43
36" CLAY N INV: 578.6
36" CLAY S INV: 578.6
DEPTH TO BOTTOM: 7.83'
WATER COLUMN: 2.4' TO 3.6'

MH-5 (CITY ID 466A039)
RIM ELEV: 588.31
N INV: 578.4
24" E INV: 581.8
6" PVC NW INV: 584.0
DEPTH TO BOTTOM: 9.83'
WATER COLUMN: 2.3' TO 3.3'

MH-6
RIM ELEV: 589.13
12" E INV: 584.2
18" S INV: 583.9
12" W INV: 583.9
DEPTH TO BOTTOM: 5.1'
TRICKLE FLOW - WATER
NOT MEASURABLE

MH-7
RIM ELEV: 588.22
FULL OF DEBRIS
BOTTOM ELEV. 584.5

MH-8
DEPTH TO BOTTOM: 7.50'
TRICKLE FLOW - WATER
NOT MEASURABLE

MH-9
DEPTH TO BOTTOM: 8.00'
TRICKLE FLOW - WATER
NOT MEASURABLE

MH-10
DEPTH TO BOTTOM: 9.00'
TRICKLE FLOW - WATER
NOT MEASURABLE

MH-11
RIM ELEV: 585.84
S INV: 580.0
DEPTH TO BOTTOM: 6.5'
WATER COLUMN: 1.5'

MH-12
RIM ELEV: 586.07
N INV: 580.7
S INV: 580.6
12" E INV: 580.6
DEPTH TO BOTTOM: 5.8'
WATER COLUMN: 0.5'

MH-13
RIM ELEV: 585.84
N INV: 581.4
SW INV: 584.1
DEPTH TO BOTTOM: 6.3'
WATER COLUMN: 1.5'

MH-14
RIM ELEV: 590.37
27" CLAY W INV: 582.9
27" CLAY E INV: 583.0
DEPTH TO BOTTOM: 7.2'
WATER COLUMN: 0.2'

MH-15
RIM ELEV: 588.35
27" CLAY W INV: 583.4
27" CLAY S INV: 583.4
DEPTH TO BOTTOM: 4.6'
WATER COLUMN: 0.1'

MH-16
RIM ELEV: 585.90
6" NE INV: 583.98
DEPTH TO BOTTOM: 5.0'
WATER COLUMN: 3.4'

LEGEND

- PROPERTY LINES
- ORDINARY HIGH WATER MARK (ELEVATION = 581.12)
- SAN — SANITARY SEWER LINE(1) (OWNED BY THE CITY OF MILWAUKEE)
- CS — COMBINED SEWER LINE (OWNED BY THE CITY OF MILWAUKEE)
- SS — UNDERGROUND STORM SEWER (OWNED BY THE CITY OF MILWAUKEE)
- SS — UNDERGROUND STORM SEWER (PRIVATELY OWNED LINE)
- MH — MANHOLE
- CB — CATCH BASIN

NOTES:
(1) THE PORTION OF THE SANITARY SEWER LINE THAT RUNS THROUGH THE 1982 S. HILBERT STREET PROPERTY AND 1919 S. MARINA DRIVE PROPERTY RUNS THROUGH A SEWER EASEMENT ON THE PROPERTY (E-697 DOC NO. 2405098).
(2) THE VERTICAL DATUM FOR SURVEYED ELEVATIONS IS THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) OF 1929.
(3) AERIAL IMAGERY (DATED 2015) IS SOURCE FROM THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION (SEWRPC).
(4) LOCATIONS OF UTILITIES WERE DETERMINED BY SURVEYS CONDUCTED BY THE SIGMA GROUP, INC. AS WELL AS PLAN SHEETS FROM THE CITY OF MILWAUKEE.
(5) EXISTING PROPERTY LINES FOR 1919 S MARINA DR, 1982 S HILBERT ST, 427 S STEWART ST WERE TAKEN FROM THE MILWAUKEE COUNTY LAND INFORMATION OFFICE.

N

0 160' 320'
GRAPHIC SCALE

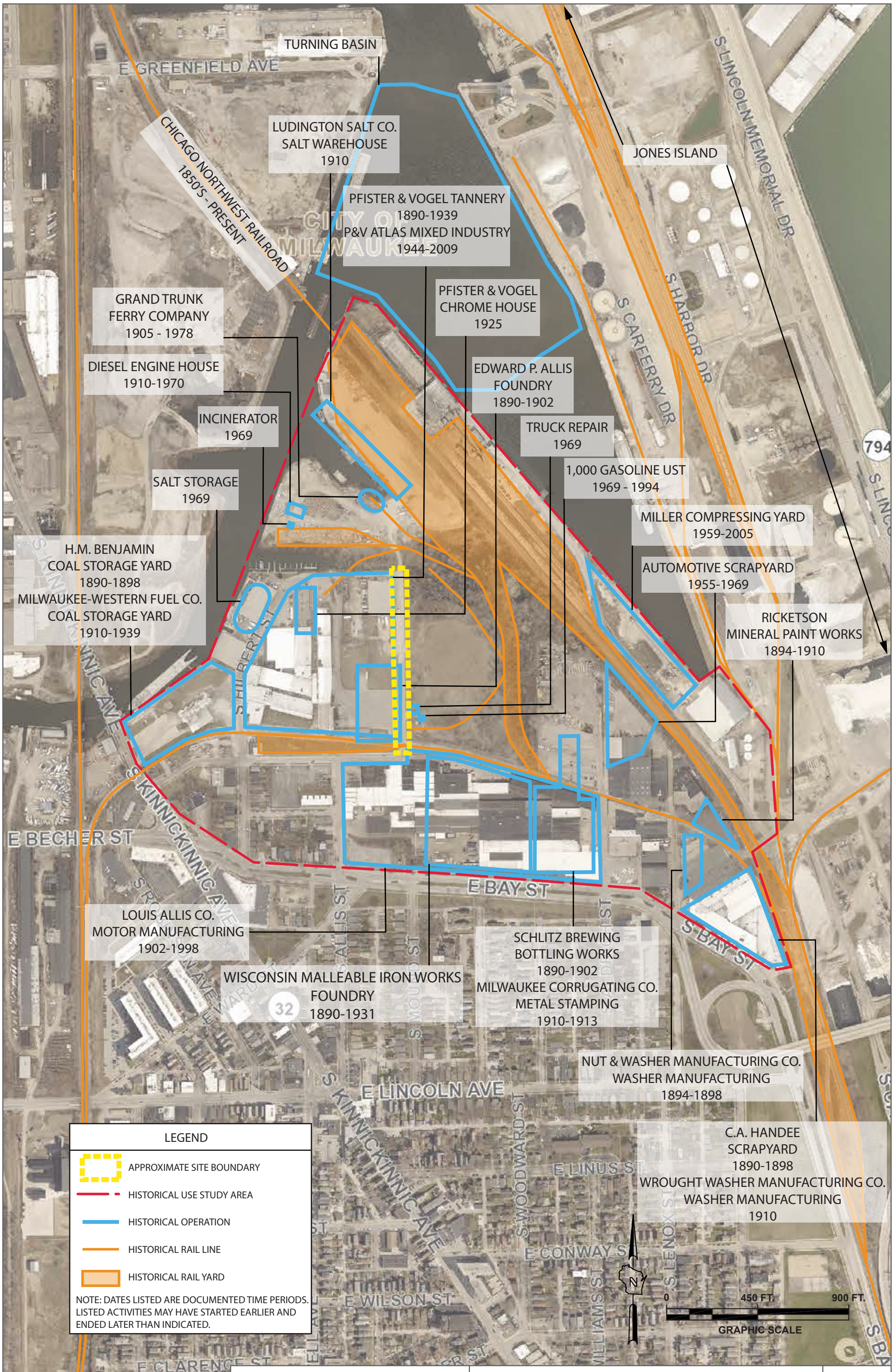
Project: 19270 | Directory: CAD | Filename: 19270_Storm Sewer Map.dwg | Created By: JRS | Date: 7/20/22

THE SIGMA GROUP
Single Source. Sound Solutions.

STORM SEWER MAP

SOUTH MARINA DRIVE STORM SEWER
PCB CLEANUP PROJECT
MILWAUKEE, WISCONSIN

FIGURE
1



CREATED BY: MSR/JRS | DATE: 07/19/2022
FILENAME: 19270_Historical Use.ai
DIRECTORY: 060 CAD
PROJECT : 19270

THE SIGMA GROUP
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HISTORICAL USE

SOUTH MARINA DRIVE STORM SEWER
PCB CLEANUP PROJECT
MILWAUKEE, WISCONSIN

FIGURE
2

E GREENFIELD AVE

CITY OF MILWAUKEE

S LINCOLN MEMORIAL DR

S HARBOR DR

S CARFERRY DR

794

S KINNICKINNIC AVE

S HILBERT ST

E BECHER ST

S ROBINSON

S KINNICKINNIC AVE

E BAY ST

S BAY ST

S ALLIS ST

S MOUND ST

S ALDRICH ST

S WOODWARD ST

E LINCOLN AVE

E LINUS ST

E CONWAY ST

S LENOX ST

E WILSON ST

E CLARENCE ST

S KINNICKINNIC AVE

S WILLIAMS ST

S AUSTIN ST

LEGEND

- APPROXIMATE SITE BOUNDARY
- HISTORICAL USE STUDY AREA
- 1870 APPROXIMATE WETLAND BOUNDARY
- 1870 APPROXIMATE SHORELINE
- 1890 APPROXIMATE SHORELINE
- 1951 APPROXIMATE SHORELINE
- 2005 ESTIMATED EXTENT OF MARQUETTE INTERCHANGE FILL PILE
- 2017 DELINEATED WETLAND BOUNDARY
- 2020 APPROXIMATE SHORELINE

N

0 450 FT. 900 FT.

GRAPHIC SCALE

Image Source:

CREATED BY: MSR/JRS | DATE: 07/20/2022

FILENAME: 19270_Shoreline Progession.ai

DIRECTORY: 060 CAD

PROJECT: 19270

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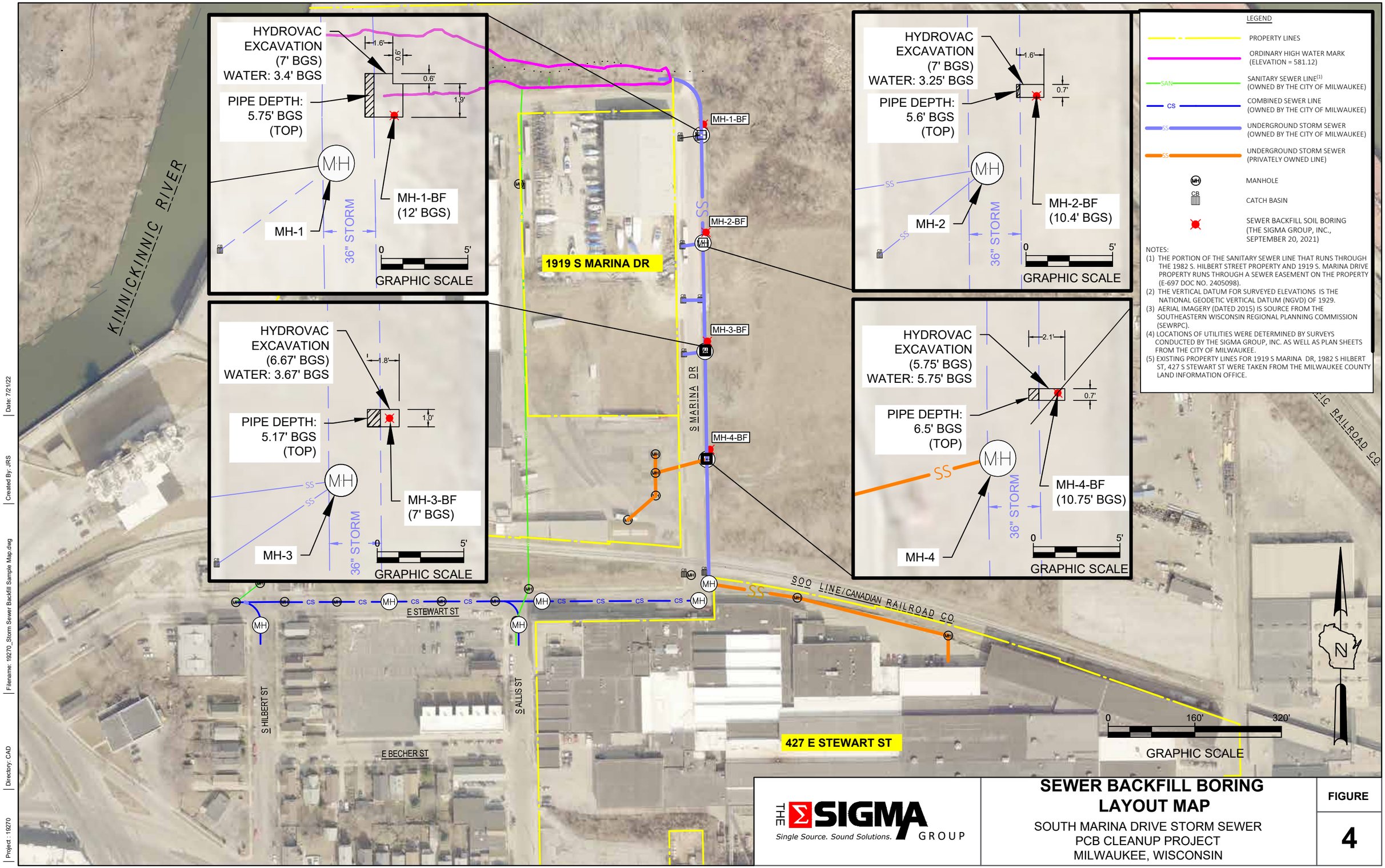
HISTORICAL SHORELINE AND WETLANDS

SOUTH MARINA DRIVE STORM SEWER PCB CLEANUP PROJECT MILWAUKEE, WISCONSIN

FIGURE

3



NOTES:
(1) THE PORTION OF THE SANITARY SEWER LINE THAT RUNS THROUGH THE 1982 S. HILBERT STREET PROPERTY AND 1919 S. MARINA DRIVE PROPERTY RUNS THROUGH A SEWER EASEMENT ON THE PROPERTY (E-697 DOC NO. 2405098).
(2) THE VERTICAL DATUM FOR SURVEYED ELEVATIONS IS THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) OF 1929.
(3) AERIAL IMAGERY (DATED 2015) IS SOURCE FROM THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION (SEWRPC).
(4) LOCATIONS OF UTILITIES WERE DETERMINED BY SURVEYS CONDUCTED BY THE SIGMA GROUP, INC. AS WELL AS PLAN SHEETS FROM THE CITY OF MILWAUKEE.
(5) EXISTING PROPERTY LINES FOR 1919 S MARINA DR, 1982 S HILBERT ST, 427 S STEWART ST WERE TAKEN FROM THE MILWAUKEE COUNTY LAND INFORMATION OFFICE.

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SEWER BACKFILL BORING LAYOUT MAP

SOUTH MARINA DRIVE STORM SEWER
PCB CLEANUP PROJECT
MILWAUKEE, WISCONSIN

FIGURE
4

Project: 19270 | Directory: CAD | Filename: 19270_Storm Sewer Backfill Sample Map.dwg | Created By: JRS | Date: 7/21/22

LOCATION OF SLIP LEVELOGGER

42" DIA STORM SEWER OUTFALL IE: 576.79 (CURRENTLY PARTIALLY BURIED)

SKIPPER BUD'S SLIP

KINNICKINNIC RIVER

SOUTH HILBERT STREET

1919 S MARINA DR

1982 S HILBERT ST

S MARINA DR

CHICAGO & NORTHWESTERN / UNION PACIFIC RAILROAD CO

MH-1 (CITY ID 466A043)
RIM ELEV: 584.02
36" CLAY N IE: 577.39
36" CLAY S IE: 577.39
DEPTH TO BOTTOM: 8.83'
WATER COLUMN: 5.8' TO 6.1'

MH-2 (CITY ID 466A042)
RIM ELEV: 583.84
36" CLAY N IE: 578.08
36" CLAY S IE: 578.08
DEPTH TO BOTTOM: 8.42'
WATER COLUMN: 5.4' TO 6.5'

MH-3 (CITY ID 466A041)
RIM ELEV: 583.96
36" CLAY N IE: 578.61
36" CLAY S IE: 578.61
DEPTH TO BOTTOM: 7.17'
WATER COLUMN: 3.7' TO 4.2'

MH-4 (CITY ID 466A040)
RIM ELEV: 586.43
36" CLAY N INV: 578.6
36" CLAY S INV: 578.6
DEPTH TO BOTTOM: 7.83'
WATER COLUMN: 2.4' TO 3.6'

MH-5 (CITY ID 466A039)
RIM ELEV: 588.31
N INV: 578.4
24" E INV: 581.8
6" PVC NW INV: 584.0
DEPTH TO BOTTOM: 9.83'
WATER COLUMN: 2.3' TO 3.3'

MH-11
RIM ELEV: 585.84
S INV: 580.0
DEPTH TO BOTTOM: 6.5'
WATER COLUMN: 1.5'

MH-12
RIM ELEV: 586.07
N INV: 580.7
S INV: 580.6
12" E INV: 580.6
DEPTH TO BOTTOM: 5.8'
WATER COLUMN: 0.5'

MH-13
RIM ELEV: 585.84
N INV: 581.4
SW INV: 584.1
DEPTH TO BOTTOM: 6.3'
WATER COLUMN: 1.5'

MH-16
RIM ELEV: 585.90
6" NE INV: 583.98
DEPTH TO BOTTOM: 5.0'
WATER COLUMN: 3.4'

RIM ELEV: 588.22
FULL OF DEBRIS
BOTTOM ELEV. 584.5

E STEWART ST

S HILBERT ST

S ALLIS ST

E BECHER ST

MH-10
DEPTH TO BOTTOM: 9.00'
TRICKLE FLOW - WATER NOT MEASURABLE

MH-9
DEPTH TO BOTTOM: 8.00'
TRICKLE FLOW - WATER NOT MEASURABLE

MH-8
DEPTH TO BOTTOM: 7.50'
TRICKLE FLOW - WATER NOT MEASURABLE

MH-7

MH-6
RIM ELEV: 589.13
12" E INV: 584.2
18" S INV: 583.9
12" W INV: 583.9
DEPTH TO BOTTOM: 5.1'
TRICKLE FLOW - WATER NOT MEASURABLE

SOO LINE/CANADIAN RAILROAD CO

MH-14
RIM ELEV: 590.37
27" CLAY W INV: 582.9
27" CLAY E INV: 583.0
DEPTH TO BOTTOM: 7.2'
WATER COLUMN: 0.2'

MH-15
RIM ELEV: 588.35
27" CLAY W INV: 583.4
27" CLAY S INV: 583.4
DEPTH TO BOTTOM: 4.6'
WATER COLUMN: 0.1'

427 E STEWART ST

LEGEND

- PROPERTY LINES
- ORDINARY HIGH WATER MARK (ELEVATION = 581.12)
- SANITARY SEWER LINE(1) (OWNED BY THE CITY OF MILWAUKEE)
- CS — COMBINED SEWER LINE (OWNED BY THE CITY OF MILWAUKEE)
- SS — UNDERGROUND STORM SEWER (OWNED BY THE CITY OF MILWAUKEE)
- SS — UNDERGROUND STORM SEWER (PRIVATELY OWNED LINE)
- MH — MANHOLE
- CB — CATCH BASIN
- LEVEL LOGGER LOCATION

NOTES:
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(5) EXISTING PROPERTY LINES FOR 1919 S MARINA DR, 1982 S HILBERT ST, 427 S STEWART ST WERE TAKEN FROM THE MILWAUKEE COUNTY LAND INFORMATION OFFICE.

N

0 160' 320'
GRAPHIC SCALE

Date: 7/8/22
Created By: JRS
Filename: 19270_Storm Sewer Map.dwg
Directory: CAD
Project: 19270

THE SIGMA GROUP
Single Source. Sound Solutions.

LEVEL LOGGER LOCATION MAP

SOUTH MARINA DRIVE STORM SEWER
PCB CLEANUP PROJECT
MILWAUKEE, WISCONSIN

FIGURE
5

DISTANCE (FEET)

100+00.00 101+00.00 102+00.00 103+00.00 104+00.00 105+00.00 106+00.00 107+00.00 108+00.00 109+00.00 110+00.00 111+00.00 112+00.00 113+00.00 114+00.00 115+00.00

ELEVATION (FEET MSL)

600 595 590 585 580 575 570

SLIP LOCATION

EXISTING GROUND SURFACE

RAILROAD TRACKS

RIM IS ELEVATED FROM GROUND

(10/5/21) 581.51
(10/4/21) 581.42
(9/1/21) 581.82
(10/4/21) 581.54
(9/1/21) 581.74
(9/1/21) 581.16
(10/4/21) 580.66
(9/1/21) 581.73
(10/4/21) 581.43
(9/1/21) 581.31
(10/4/21) 581.01
(10/4/21) 583.37
(10/4/21) 583.85

OUTFALL
MH-1
MH-2
MH-3
MH-4
MH-5
MH-14
MH-15

18' OF 42" DIAMETER CORRUGATED IRON PIPE

36" DIAMETER CLAY PIPE

27" DIAMETER CLAY PIPE

CONCRETE TUNNEL FOR PIPE SECTION UNDER RAILROAD TRACKS

STATIC WATER LEVEL (9/1/2021)

STATIC WATER LEVEL (10/4/2021 & 10/5/2021)

VERTICAL AXIS IS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929

25X VERTICAL EXAGGERATION

4' VERTICAL SCALE

0 100' HORIZONTAL SCALE

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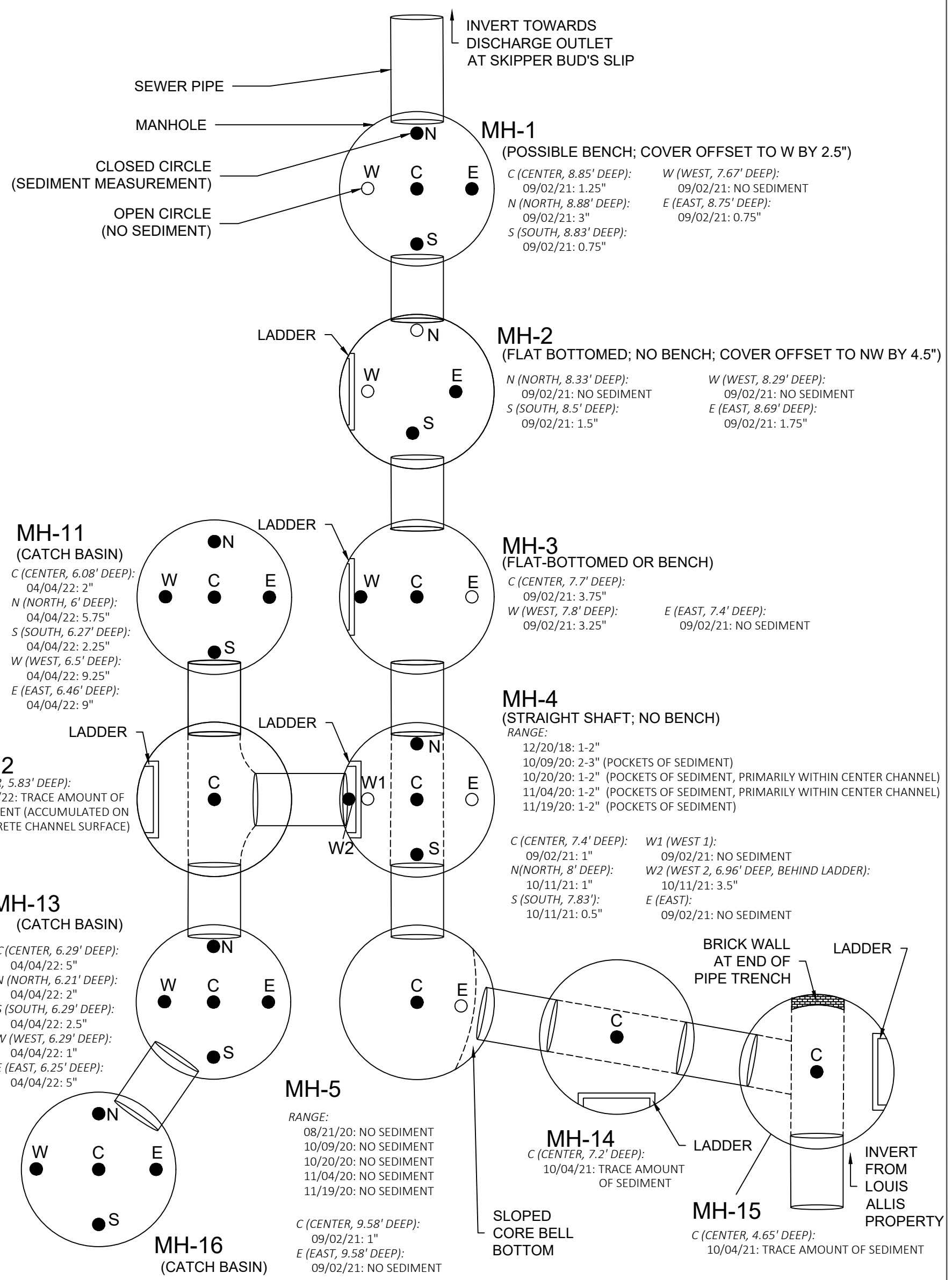
STORM SEWER CROSS SECTION (SLIP TO MH-15)

SOUTH MARINA DRIVE STORM SEWER
PCB CLEANUP PROJECT
MILWAUKEE, WISCONSIN

FIGURE 6

Date: 6/3/22
Created By: JRS
Filename: 19270_Storm Sewer Cross Section Map.dwg
Directory: CAD
Project : 19270



MH-1

(POSSIBLE BENCH; COVER OFFSET TO W BY 2.5")

C (CENTER, 8.85' DEEP):
09/02/21: 1.25"

W (WEST, 7.67' DEEP):
09/02/21: NO SEDIMENT

N (NORTH, 8.88' DEEP):
09/02/21: 3"

E (EAST, 8.75' DEEP):
09/02/21: 0.75"

S (SOUTH, 8.83' DEEP):
09/02/21: 0.75"

MH-2

(FLAT BOTTOMED; NO BENCH; COVER OFFSET TO NW BY 4.5")

N (NORTH, 8.33' DEEP):
09/02/21: NO SEDIMENT

W (WEST, 8.29' DEEP):
09/02/21: NO SEDIMENT

S (SOUTH, 8.5' DEEP):
09/02/21: 1.5"

E (EAST, 8.69' DEEP):
09/02/21: 1.75"

MH-3

(FLAT-BOTTOMED OR BENCH)

C (CENTER, 7.7' DEEP):
09/02/21: 3.75"

W (WEST, 7.8' DEEP):
09/02/21: 3.25"

E (EAST, 7.4' DEEP):
09/02/21: NO SEDIMENT

MH-4

(STRAIGHT SHAFT; NO BENCH)

RANGE:
12/20/18: 1-2"
10/09/20: 2-3" (POCKETS OF SEDIMENT)
10/20/20: 1-2" (POCKETS OF SEDIMENT, PRIMARILY WITHIN CENTER CHANNEL)
11/04/20: 1-2" (POCKETS OF SEDIMENT, PRIMARILY WITHIN CENTER CHANNEL)
11/19/20: 1-2" (POCKETS OF SEDIMENT)

C (CENTER, 7.4' DEEP):
09/02/21: 1"

W1 (WEST 1):
09/02/21: NO SEDIMENT

N(NORTH, 8' DEEP):
10/11/21: 1"

W2 (WEST 2, 6.96' DEEP, BEHIND LADDER):
10/11/21: 3.5"

S (SOUTH, 7.83'):
10/11/21: 0.5"

E (EAST):
09/02/21: NO SEDIMENT

MH-5

RANGE:
08/21/20: NO SEDIMENT
10/09/20: NO SEDIMENT
10/20/20: NO SEDIMENT
11/04/20: NO SEDIMENT
11/19/20: NO SEDIMENT

C (CENTER, 9.58' DEEP):
09/02/21: 1"

E (EAST, 9.58' DEEP):
09/02/21: NO SEDIMENT

MH-11

(CATCH BASIN)

C (CENTER, 6.08' DEEP):
04/04/22: 2"

N (NORTH, 6' DEEP):
04/04/22: 5.75"

S (SOUTH, 6.27' DEEP):
04/04/22: 2.25"

W (WEST, 6.5' DEEP):
04/04/22: 9.25"

E (EAST, 6.46' DEEP):
04/04/22: 9"

MH-12

C (CENTER, 5.83' DEEP):
04/04/22: TRACE AMOUNT OF SEDIMENT (ACCUMULATED ON CONCRETE CHANNEL SURFACE)

MH-13

(CATCH BASIN)

C (CENTER, 6.29' DEEP):
04/04/22: 5"

N (NORTH, 6.21' DEEP):
04/04/22: 2"

S (SOUTH, 6.29' DEEP):
04/04/22: 2.5"

W (WEST, 6.29' DEEP):
04/04/22: 1"

E (EAST, 6.25' DEEP):
04/04/22: 5"

MH-14

C (CENTER, 7.2' DEEP):
10/04/21: TRACE AMOUNT OF SEDIMENT

MH-15

C (CENTER, 4.65' DEEP):
10/04/21: TRACE AMOUNT OF SEDIMENT

MH-16

(CATCH BASIN)

C (CENTER, 4.71' DEEP):
04/07/22: 13.75"

N (NORTH, 4.90' DEEP):
04/07/22: 17.25"

S (SOUTH, 5.02' DEEP):
04/07/22: 18.75"

W (WEST, 4.88' DEEP):
04/07/22: 16"

E (EAST, 8.75' DEEP):
04/07/22: 15.75"

NOTES:

1) SEWER PIPE SCHEMATIC DIAGRAM (NOT TO SCALE).
2) SEDIMENT MEASUREMENTS WERE NOTED WITHIN DIFFERENT SPATIAL PORTIONS OF THE MANHOLES IN THE RECENT SAMPLING ROUNDS, AS NOTED. PREVIOUS MEASUREMENTS ARE NOTED AS RANGES.
3) THE COMBINED SEWER SYSTEM IN EAST STEWART STREET IS NOT SHOWN, AS IT WAS DISCONNECTED FROM THE SOUTH MARINA DRIVE SYSTEM IN 1986.

NOT TO SCALE

THE SIGMA GROUP
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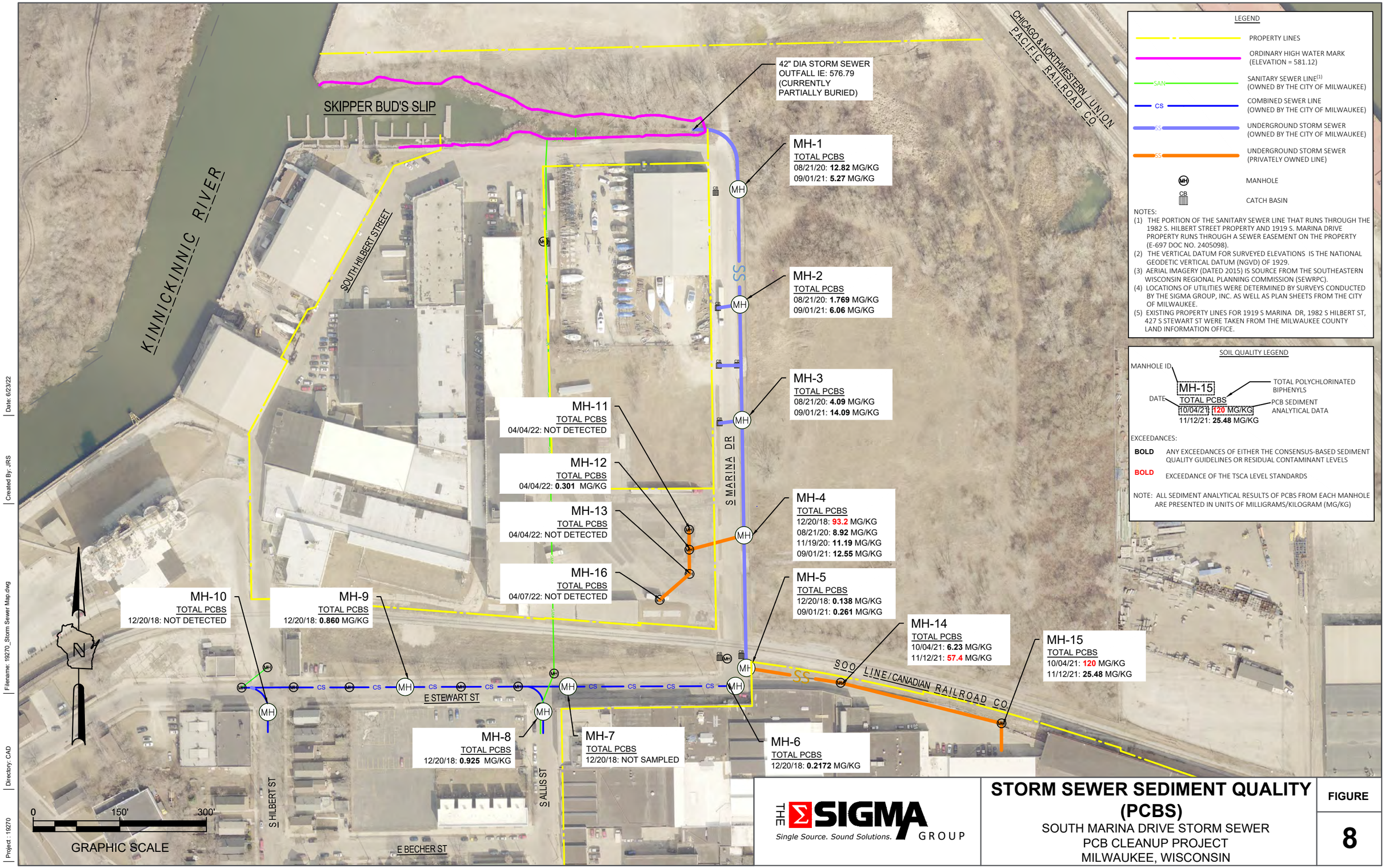
SEDIMENT THICKNESS (SOUTH MARINA DRIVE SYSTEM)

SOUTH MARINA DRIVE STORM SEWER
PCB CLEANUP PROJECT
MILWAUKEE, WISCONSIN

FIGURE
7

PROJECT: : 21041 | DIRECTORY: CAD | FILENAME: 19270_Manhole_Sediment_Measurements.dwg | CREATED BY: JRS | DATE: 7/26/2022



LEGEND

- PROPERTY LINES
- ORDINARY HIGH WATER MARK (ELEVATION = 581.12)
- SAN — SANITARY SEWER LINE[1] (OWNED BY THE CITY OF MILWAUKEE)
- CS — COMBINED SEWER LINE (OWNED BY THE CITY OF MILWAUKEE)
- SS — UNDERGROUND STORM SEWER (OWNED BY THE CITY OF MILWAUKEE)
- SS — UNDERGROUND STORM SEWER (PRIVATELY OWNED LINE)
- MH — MANHOLE
- CB — CATCH BASIN

NOTES:
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(5) EXISTING PROPERTY LINES FOR 1919 S MARINA DR, 1982 S HILBERT ST, 427 S STEWART ST WERE TAKEN FROM THE MILWAUKEE COUNTY LAND INFORMATION OFFICE.

SOIL QUALITY LEGEND

MANHOLE ID — MH-15 — TOTAL POLYCHLORINATED BIPHENYLS
DATE — TOTAL PCBS — PCB SEDIMENT ANALYTICAL DATA
10/04/21: 120 MG/KG
11/12/21: 25.48 MG/KG

EXCEEDANCES:

BOLD ANY EXCEEDANCES OF EITHER THE CONSENSUS-BASED SEDIMENT QUALITY GUIDELINES OR RESIDUAL CONTAMINANT LEVELS

BOLD EXCEEDANCE OF THE TSCA LEVEL STANDARDS

NOTE: ALL SEDIMENT ANALYTICAL RESULTS OF PCBS FROM EACH MANHOLE ARE PRESENTED IN UNITS OF MILLIGRAMS/KILOGRAM (MG/KG)

THE SIGMA GROUP
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STORM SEWER SEDIMENT QUALITY (PCBS)

SOUTH MARINA DRIVE STORM SEWER
PCB CLEANUP PROJECT
MILWAUKEE, WISCONSIN

FIGURE
8

Project: 19270 | Directory: CAD | Filename: 19270_Storm Sewer Map.dwg | Created By: JRS | Date: 6/23/22

Project: 19270 | Directory: CAD | Filename: 19270_Storm Sewer Map.dwg | Created By: JRS | Date: 7/7/22

KINNICKINNIC RIVER

SKIPPER BUD'S SLIP

SOUTH HILBERT STREET

CHICAGO & NORTHWESTERN / UNION PACIFIC RAILROAD CO.

42" DIA STORM SEWER OUTFALL IE: 576.79 (CURRENTLY PARTIALLY BURIED)

MH-1
TOTAL PCBS
09/01/21: NOT DETECTED
10/4/21: **0.072** µG/L

MH-2
TOTAL PCBS
09/01/21: NOT DETECTED
10/4/21: **0.094** µG/L

MH-3
TOTAL PCBS
09/01/21: NOT DETECTED
10/4/21: NOT DETECTED

MH-4
TOTAL PCBS
11/19/20: NOT DETECTED
09/01/21: NOT DETECTED
10/4/21: NOT DETECTED

MH-5
TOTAL PCBS
11/19/20: NOT DETECTED
09/01/21: NOT DETECTED
10/4/21: **0.094** µG/L

MH-6
TOTAL PCBS
11/19/20: NOT DETECTED

MH-7
TOTAL PCBS
NOT SAMPLED

MH-8
TOTAL PCBS
NOT SAMPLED

MH-9
TOTAL PCBS
NOT SAMPLED

MH-10
TOTAL PCBS
NOT SAMPLED

MH-11
TOTAL PCBS
04/04/22: **0.11** µG/L

MH-12
TOTAL PCBS
04/04/22: **0.020** µG/L

MH-13
TOTAL PCBS
04/04/22: **0.0078 J** µG/L

MH-14
TOTAL PCBS
10/04/21: **0.41** µG/L

MH-15
TOTAL PCBS
10/04/21: **0.72** µG/L

MH-16
TOTAL PCBS
04/07/22: **0.0078 J** µG/L

S MARINA DR

E STEWART ST

E BECHER ST

S HILBERT ST

S ALLIS ST

SOO LINE/CANADIAN RAILROAD CO.

N

0 150' 300'
GRAPHIC SCALE

LEGEND

- PROPERTY LINES
- ORDINARY HIGH WATER MARK (ELEVATION = 581.12)
- SAN — SANITARY SEWER LINE(1) (OWNED BY THE CITY OF MILWAUKEE)
- CS — COMBINED SEWER LINE (OWNED BY THE CITY OF MILWAUKEE)
- SS — UNDERGROUND STORM SEWER (OWNED BY THE CITY OF MILWAUKEE)
- SS — UNDERGROUND STORM SEWER (PRIVATELY OWNED LINE)
- MH — MANHOLE
- CB — CATCH BASIN

NOTES:
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(5) EXISTING PROPERTY LINES FOR 1919 S MARINA DR, 1982 S HILBERT ST, 427 S STEWART ST WERE TAKEN FROM THE MILWAUKEE COUNTY LAND INFORMATION OFFICE.

WATER QUALITY LEGEND

MANHOLE ID — MH-11
DATE — TOTAL PCBS — 04/04/22 **0.11** µG/L
TOTAL POLYCHLORINATED BIPHENYLS
PCB WATER ANALYTICAL DATA

EXCEEDANCES:

BOLD EXCEEDANCE OF THE NR 105 SURFACE WATER STANDARD FOR WILDLIFE (S. NR 105.07, WISCONSIN ADMINISTRATIVE CODE, *TABLE 7 WILDLIFE CRITERIA)*

NOTE: ALL WATER ANALYTICAL RESULTS OF PCBS FROM EACH MANHOLE ARE PRESENTED IN UNITS OF MICROGRAMS/LITER (µG/L)

THE SIGMA GROUP
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STORM SEWER WATER QUALITY (PCBS)

SOUTH MARINA DRIVE STORM SEWER
PCB CLEANUP PROJECT
MILWAUKEE, WISCONSIN

FIGURE
9

SKIPPER BUD'S SLIP

KINNICKINNIC RIVER

SOUTH HILBERT STREET

1919 S MARINA DR

1982 S HILBERT ST

S MARINA DR

E STEWART ST

E BECHER ST

S HILBERT ST

S ALLIS ST

SOO LINE/CANADIAN RAILROAD CO

427 E STEWART ST

MH-1-BF

MH-1-BF
TOTAL PCBS
09/20/21: <0.0694 MG/KG

MH-2-BF

MH-2-BF
TOTAL PCBS
09/20/21: <0.0694 MG/KG

MH-3-BF

MH-3-BF
TOTAL PCBS
09/20/21: 0.012 J MG/KG

MH-4-BF

MH-4-BF
TOTAL PCBS
09/20/21: 0.027 MG/KG

LEGEND

- PROPERTY LINES
- ORDINARY HIGH WATER MARK (ELEVATION = 581.12)
- SAN — SANITARY SEWER LINE(1) (OWNED BY THE CITY OF MILWAUKEE)
- CS — COMBINED SEWER LINE (OWNED BY THE CITY OF MILWAUKEE)
- SS — UNDERGROUND STORM SEWER (OWNED BY THE CITY OF MILWAUKEE)
- SS — UNDERGROUND STORM SEWER (PRIVATELY OWNED LINE)
- MH — MANHOLE
- CB — CATCH BASIN
- SEWER BACKFILL SOIL BORING (THE SIGMA GROUP, INC., SEPTEMBER 20, 2021)

NOTES:
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(3) AERIAL IMAGERY (DATED 2015) IS SOURCE FROM THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION (SEWRPC).
(4) LOCATIONS OF UTILITIES WERE DETERMINED BY SURVEYS CONDUCTED BY THE SIGMA GROUP, INC. AS WELL AS PLAN SHEETS FROM THE CITY OF MILWAUKEE.
(5) EXISTING PROPERTY LINES FOR 1919 S MARINA DR, 1982 S HILBERT ST, 427 S STEWART ST WERE TAKEN FROM THE MILWAUKEE COUNTY LAND INFORMATION OFFICE.

N

0 160' 320'
GRAPHIC SCALE

THE SIGMA GROUP
Single Source. Sound Solutions.

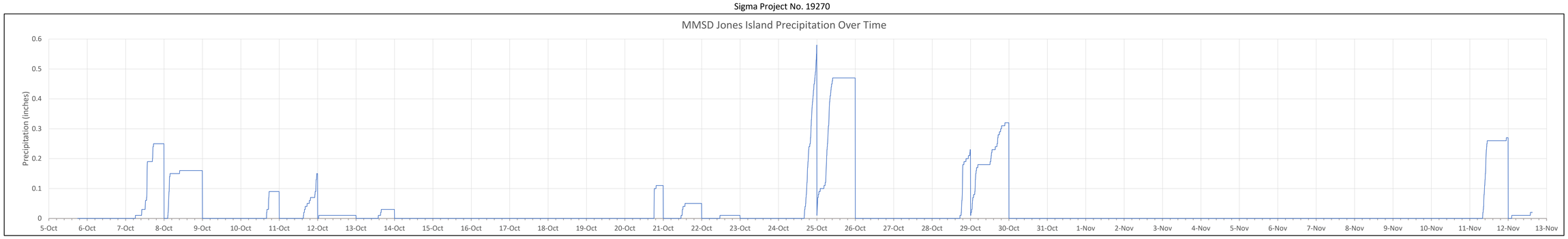
SEWER BACKFILL BORING SOIL QUALITY MAP

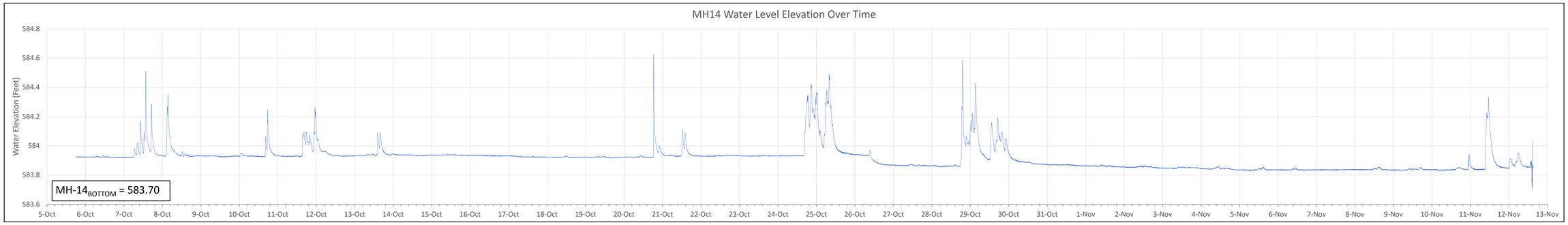
SOUTH MARINA DRIVE STORM SEWER
PCB CLEANUP PROJECT
MILWAUKEE, WISCONSIN

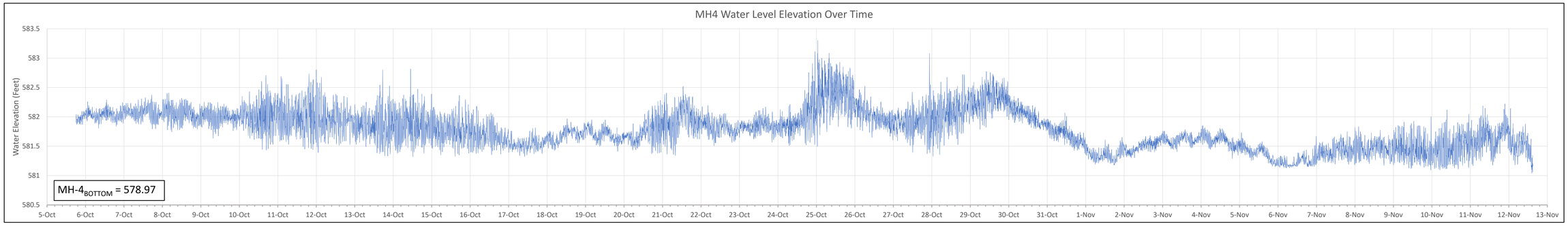
FIGURE
10

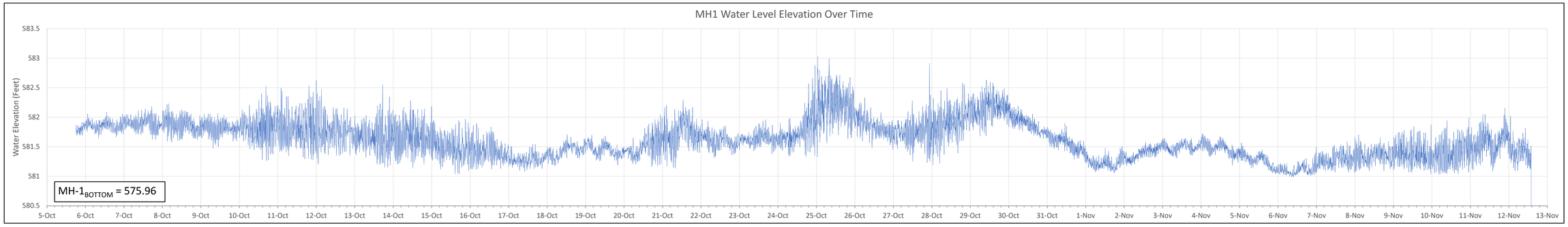
Project: 19270 | Directory: CAD | Filename: 19270_Storm Sewer Backfill Sample Map.dwg | Created By: JRS | Date: 7/21/22

Figure 11. MH Water Elevation Data Over Time
South Marina Drive Storm Sewer
Sigma Project No. 19270









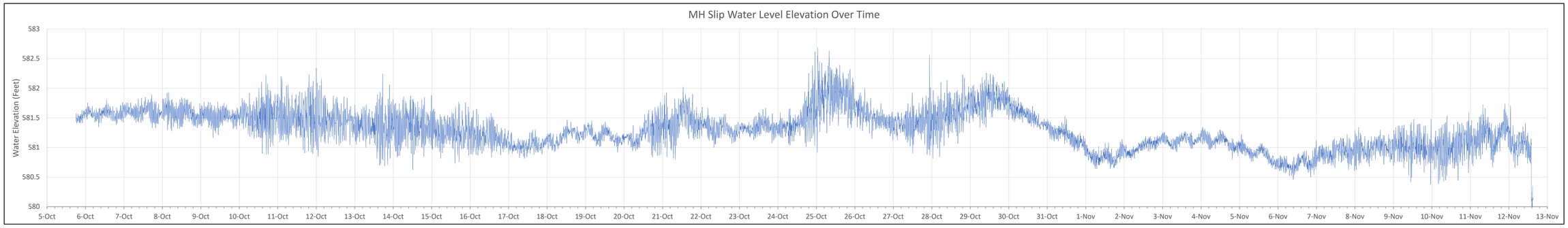
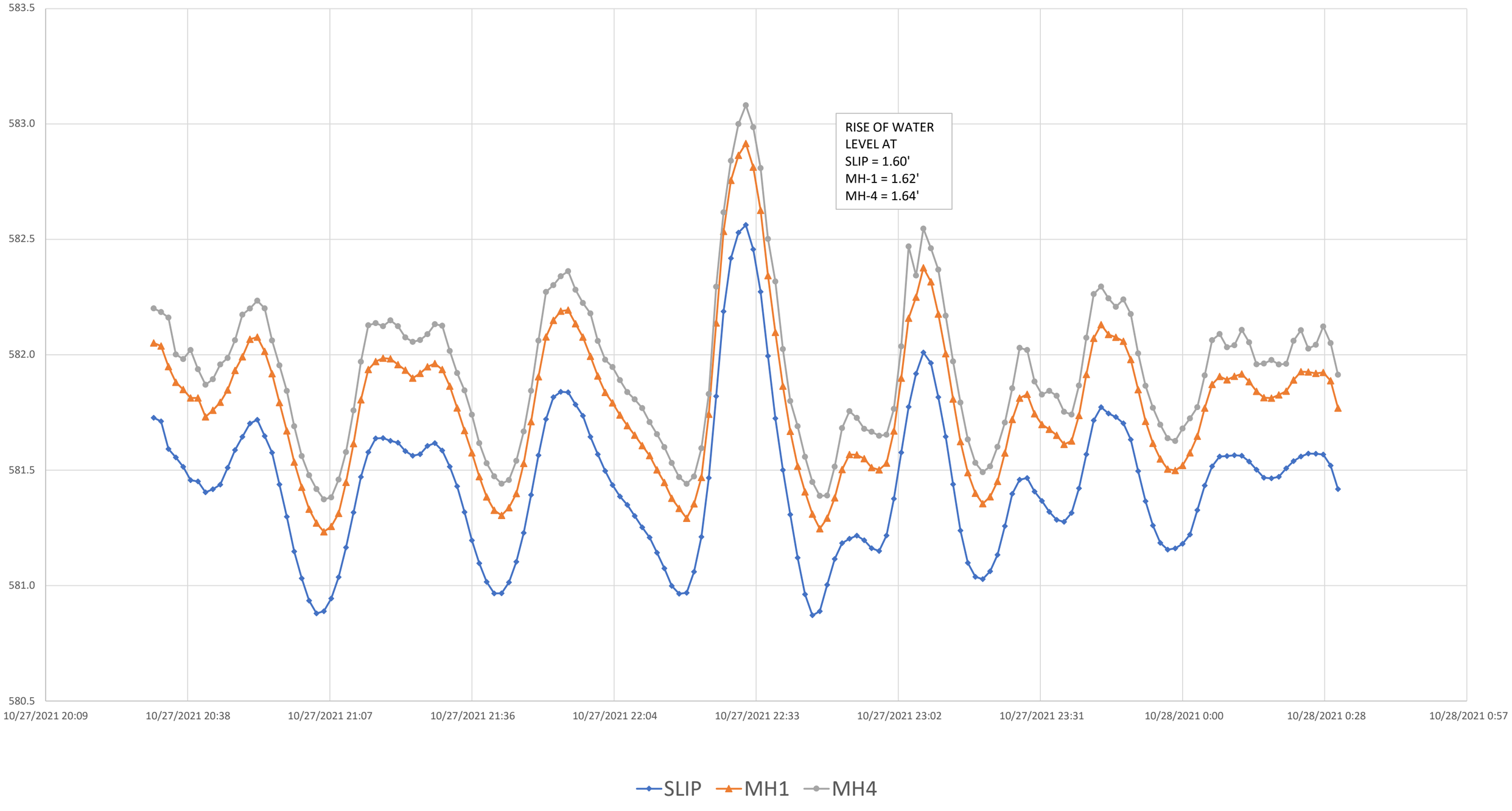


FIGURE 12. WATER LEVEL RISE ON A DRY EVENING

OCTOBER 27, 2021



ATTACHMENT 1

SEWER BACKFILL BORING LOGS AND BOREHOLE ABANDONMENT FORMS

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
SOUTH MARINA DRIVE STORM SEWER	BRRTS #02-41-587190	MH-1-BF

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Zach Fry GESTRA Engineering Inc.	9/20/2021	9/20/2021	HydroVac/ Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MH-1-BF	580.8 Feet MSL	584.2 Feet MSL	26.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 375,111 N, 2,560,930 E Ⓢ/C/N
NE 1/4 of SW 1/4 of Section 4, T 6 N, R 22 E
Lat 43° 0' 35.5"
Long 87° 54' 9.5"
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
341331430	Milwaukee	41	Milwaukee

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 ----	84 ----		1 2 3 4 5 6	(0-7') Hydrovac excavation (26 x 23-inch area) northeast of MH-3, removed topsoil & soil backfill (FILL) (3.4') measured water level	---		▼							
2 GP	60 25		7 8 9 10 11 12	(7-8.5') Dark brown coarse to medium SAND with GRAVEL, wet, sewer backfill (SW) (FILL) (~7.4') dark gray gravel; tan sand (~8.1') black gravel with sand (~8.5-8.9') Very soft brown organic CLAY, peat, moist (OL) (8.9-10') Piece of root /tree (black on top, brown at the bottom) (10-12') No recovery End of borehole at 12' bgs. Borehole and hydrovac excavation backfilled with 3/8" bentonite chips, and resurfaced with topsoil.	SW OL -- ---			0.0 0.0						Soil Sample MH-1-BF taken from (7-8.5') for PCBs

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature James Schmidt Firm The Sigma Group, Inc.
1300 W Canal St Milwaukee, WI 53233
Tel: 414-643-4200
Fax: 414-643-4210

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
SOUTH MARINA DRIVE STORM SEWER	BRRTS #02-41-587190	MH-2-BF

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Zach Fry GESTRA Engineering Inc.	9/20/2021	9/20/2021	HydroVac/ Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MH-2-BF	580.6 Feet MSL	583.9 Feet MSL	19.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 374,913 N, 2,560,933 E Ⓢ/C/N
NE 1/4 of SW 1/4 of Section 4, T 6 N, R 22 E
Lat 43° 0' 33.5"
Long 87° 54' 9.6"
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
341331430	Milwaukee	41	Milwaukee

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 ----	88.8 ----		1	(0-7.4') Hydrovac excavation (19 x 9-inch area) northeast of MH-2, removed topsoil & soil backfill										
			2											
			3	(3.25') Measured water level			▼							
			4		---									
			5											
			6											
			7											
2 GP	36 27		8	(7.4-8.1') Black to light gray GRAVEL with SAND, wet, sewer backfill (GW) (FILL)	GW			0.0						Soil Sample MH-2-BF taken from (7.4-8.1') for PCBs
					OL									
			9	(8.1-8.4') Soft dark brown CLAY, little roots, wet (OL) (FILL)	SP			0.0						
					SM			0.0						
			10	Light gray coarse SAND, poorly graded, little angular gravel, wet (SP) (FILL)	---									
				(8.6-9.6') Black silty SAND, wet, foundry sand (SM) (FILL)										
				(9.6-10.4') No recovery										
				End of borehole at 10.4' bgs. Borehole and hydrovac excavation backfilled with 3/8" bentonite chips, and resurfaced with topsoil.										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
James Schmidt	The Sigma Group, Inc. 1300 W Canal St Milwaukee, WI 53233	Tel: 414-643-4200 Fax: 414-643-4210

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
SOUTH MARINA DRIVE STORM SEWER	BRRTS #02-41-587190	MH-3-BF

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Zach Fry GESTRA Engineering Inc.	9/20/2021	9/20/2021	HydroVac/ Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MH-3-BF	580.9 Feet MSL	584.5 Feet MSL	22.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 374,712 N, 2,560,937 E Ⓢ/C/N
NE 1/4 of SW 1/4 of Section 4, T 6 N, R 22 E
Lat 43° 0' 31.5"
Long 87° 54' 9.6"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
341331430	Milwaukee	41	Milwaukee

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 ----	80 ----		1 2 3 4 5 6	(0-6.67') Hydrovac excavation (22 x 12-inch area) northeast of MH-3, removed topsoil & soil backfill (FILL) (3.67') measured water level; slight sheen on water surface	---		▼							
2 GP	4 22		7	(6.67-7') Dark gray to gray well graded SAND (coarse to fine), coarse subangular gravel, moist to wet, few silt, sewer backfill (SW) (FILL) End of borehole at 7' bgs. Borehole and hydrovac excavation backfilled with 3/8" bentonite chips, and resurfaced with topsoil.	SW			0.0						Soil Sample MH-3-BF taken from (6.67-7') for PCBs; 4 attempts (4" each) to obtain sample volume

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature James Schmidt Firm The Sigma Group, Inc. 1300 W Canal St Milwaukee, WI 53233 Tel: 414-643-4200 Fax: 414-643-4210

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
SOUTH MARINA DRIVE STORM SEWER	BRRTS #02-41-587190	MH-4-BF

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Zach Fry GESTRA Engineering Inc.	9/20/2021	9/20/2021	HydroVac/ Geoprobe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MH-4-BF	580.6 Feet MSL	586.3 Feet MSL	25.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 374,512 N, 2,560,941 E Ⓢ/C/N
NE 1/4 of SW 1/4 of Section 4, T 6 N, R 22 E
Lat 43° 0' 29.6"
Long 87° 54' 9.6"
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
341331430	Milwaukee	41	Milwaukee

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 ---	69 ----		1 2 3 4 5	(0-5.75') Hydrovac excavation (25 x 5-inch area) northeast of MH-4, removed topsoil & soil backfill	---									
2 GP	60 48		6 7 8 9 10	(5.75-6.8') Dark brown to white coarse to fine angular GRAVEL with coarse to medium sand, well graded, wet, backfill (GW) (FILL), measured water level at 5.75', sheen on water surface	GW		▼	0.2						Soil Sample MH-4-BF taken from (5.75-6.8') for PCBs
				(6.8'-10') Large continous black wood piece, wet, shoring for storm sewer	---									
				(10-10.75') No recovery	---									
				End of borehole at 10.75' bgs. Borehole and hydrovac excavation backfilled with 3/8" bentonite chips, and resurfaced with topsoil.										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
James Schmidt	The Sigma Group, Inc. 1300 W Canal St Milwaukee, WI 53233	414-643-4200 Fax: 414-643-4210

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-5 (R 4/08)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return this form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ Verification Only of Fill and Seal

MH-1-BF

Route to:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Milwaukee		

Lattitude / Longitude (Degrees and Minutes): 43 ° 0 ' 35.5 " 'N / 87 ° 54 ' 9.5 " 'W
Method Code (see instructions): SCR012

¼ / ¼	¼	Section	Township	Range
NE	SW	4	6	22 ☒ E ☐ W

or Gov't Lot #

Well Street Address: South Marina Drive ROW

Well City, Village or Town	Well ZIP Code
Milwaukee	53207

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
No longer needed.	

2. Facility / Owner Information

Facility Name: SOUTH MARINA DRIVE STORM SEWER
Facility ID (FID or PWS): 341331430
License/Permit/Monitoring #: BRRTS #02-41-587190
Original Well Owner:
Present Well Owner: City of Milwaukee
Mailing Address of Present Owner: 809 N. Broadway

City of Present Owner	State	ZIP Code
Milwaukee	WI	53202

3. Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Drillhole / Borehole

Original Construction Date: 9/20/2021
If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) HydroVac + Geoprobe

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft)	Casing Diameter (in.)
12.0	

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.3	

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	3.4

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☒ Yes	☐ No	☐ N/A
If yes, was hole retopped?	☒ Yes	☐ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source	☐ Yes	☒ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured ☐ Other (Explain)
(Bentonite Chips)

Sealing Materials
☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry " "
☐ Concrete ☒ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Topsoil with seed & grass	Surface	0.5		
3/8" bentonite chips (50 lb/sack)	0.5	12.0	30	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
The Sigma Group, Inc.		9/20/2021

Street or Route	Telephone Number
1300 W. Canal Street	(414) 643-4200

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Milwaukee	WI	53233	James Schmidt	6/3/22

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-5 (R 4/08)

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☐ Verification Only of Fill and Seal

MH-2-BF

Route to:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Milwaukee		

Lattitude / Longitude (Degrees and Minutes): 43 ° 0 ' 33.5 " 'N / 87 ° 54 ' 9.6 " 'W
Method Code (see instructions): SCR012

¼ / ¼	¼	Section	Township	Range
NE	SW	4	6	22 ☒ E ☐ W

or Gov't Lot #

Well Street Address: South Marina Drive ROW

Well City, Village or Town	Well ZIP Code
Milwaukee	53207

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
No longer needed.	

2. Facility / Owner Information

Facility Name: SOUTH MARINA DRIVE STORM SEWER
Facility ID (FID or PWS): 341331430
License/Permit/Monitoring #: BRRTS #02-41-587190
Original Well Owner:
Present Well Owner: City of Milwaukee
Mailing Address of Present Owner: 809 N. Broadway

City of Present Owner	State	ZIP Code
Milwaukee	WI	53202

3. Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Drillhole / Borehole

Original Construction Date: 9/20/2021
If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) HydroVac + Geoprobe

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft)	Casing Diameter (in.)
10.4	

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.3	

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	3.3

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☒ Yes	☐ No	☐ N/A
If yes, was hole retopped?	☒ Yes	☐ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source	☐ Yes	☒ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured ☐ Other (Explain)
(Bentonite Chips)

Sealing Materials
☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry " "
☐ Concrete ☒ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Topsoil with seed & grass	Surface	0.5		
3/8" bentonite chips (50 lb/sack)	0.5	10.4	14.5	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
The Sigma Group, Inc.		9/20/2021

Street or Route	Telephone Number
1300 W. Canal Street	(414) 643-4200

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Milwaukee	WI	53233	James Schmidt	6/3/22

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing

Form 3300-5 (R 4/08)

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☐ Verification Only of Fill and Seal

MH-3-BF

Route to:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Milwaukee		

Lattitude / Longitude (Degrees and Minutes): 43 ° 0 ' 31.5 " 'N / 87 ° 54 ' 9.6 " 'W
Method Code (see instructions): SCR012

¼ / ¼	¼	Section	Township	Range
NE	SW	4	6	22 ☒ E ☐ W

or Gov't Lot #

Well Street Address: South Marina Drive ROW

Well City, Village or Town	Well ZIP Code
Milwaukee	53207

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
No longer needed.	

2. Facility / Owner Information

Facility Name: SOUTH MARINA DRIVE STORM SEWER
Facility ID (FID or PWS): 341331430
License/Permit/Monitoring #: BRRTS #02-41-587190
Original Well Owner:
Present Well Owner: City of Milwaukee
Mailing Address of Present Owner: 809 N. Broadway

City of Present Owner	State	ZIP Code
Milwaukee	WI	53202

3. Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Drillhole / Borehole

Original Construction Date: 9/20/2021
If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) HydroVac + Geoprobe

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft)	Casing Diameter (in.)
7.0	

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.3	

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	3.7

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☒ Yes	☐ No	☐ N/A
If yes, was hole retopped?	☒ Yes	☐ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source	☐ Yes	☒ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured ☐ Other (Explain)
(Bentonite Chips)

Sealing Materials
☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry " "
☐ Concrete ☒ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Topsoil with seed & grass	Surface	0.5		
3/8" bentonite chips (50 lb/sack)	0.5	7.0	17	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
The Sigma Group, Inc.		9/20/2021

Street or Route	Telephone Number
1300 W. Canal Street	(414) 643-4200

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Milwaukee	WI	53233	James Schmidt	6/3/22

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing
Form 3300-5 (R 4/08) Page 1 of 2

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return this form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ Verification Only of Fill and Seal

MH-4-BF

Route to:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Milwaukee		

Lattitude / Longitude (Degrees and Minutes): 43 ° 0 ' 29.6 " 'N / 87 ° 54 ' 9.6 " 'W
Method Code (see instructions): SCR012

¼ / ¼	¼	Section	Township	Range
NE	SW	4	6	22 ☒ E ☐ W

or Gov't Lot #

Well Street Address: South Marina Drive ROW

Well City, Village or Town	Well ZIP Code
Milwaukee	53207

Subdivision Name	Lot #

Reason For Removal From Service	WI Unique Well # of Replacement Well
No longer needed.	

2. Facility / Owner Information

Facility Name: SOUTH MARINA DRIVE STORM SEWER
Facility ID (FID or PWS): 341331430
License/Permit/Monitoring #: BRRTS #02-41-587190
Original Well Owner:
Present Well Owner: City of Milwaukee
Mailing Address of Present Owner: 809 N. Broadway

City of Present Owner	State	ZIP Code
Milwaukee	WI	53202

3. Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Drillhole / Borehole

Original Construction Date: 9/20/2021
If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (Specify) HydroVac + Geoprobe

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft)	Casing Diameter (in.)
10.8	

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.3	

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	5.8

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☒ Yes	☐ No	☐ N/A
If yes, was hole retopped?	☒ Yes	☐ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source	☐ Yes	☒ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured ☐ Other (Explain)
(Bentonite Chips)

Sealing Materials
☐ Neat Cement Grout ☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Sand-Cement (Concrete) Grout ☐ Bentonite-Sand Slurry " "
☐ Concrete ☒ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Topsoil with seed & grass	Surface	0.5		
3/8" bentonite chips (50 lb/sack)	0.5	10.8	15.5	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing (mm/dd/yyyy)
The Sigma Group, Inc.		9/20/2021

Street or Route	Telephone Number
1300 W. Canal Street	(414) 643-4200

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Milwaukee	WI	53233	James Schmidt	6/3/22

DNR Use Only

Date Received	Noted By

Comments:

ATTACHMENT 2

SEWER BACKFILL BORING PHOTOGRAPHS

ATTACHMENT 2
STORM SEWER BACKFILL BORINGS

Photo 1: XPose (hydrovac contractor) conducting hydrovac excavation to the northeast of manhole MH-1. View to north; photograph taken on September 20, 2021.

ATTACHMENT 2
STORM SEWER BACKFILL BORINGS

Photo 2: The open HydroVac excavation northeast of manhole MH-1. View to west; photograph taken on September 20, 2021.

ATTACHMENT 2
STORM SEWER BACKFILL BORINGS

Photo 3: Geoprobe boring (MH-1-BF) within open Hydro-vac borehole northeast of manhole MH-1. View to northeast; photograph taken on September 20, 2021.

Photo 4: Geoprobe boring (MH-1-BF) northeast of manhole MH-1 backfilled with bentonite chips. View to northeast; photograph taken on September 20, 2021.

ATTACHMENT 2
STORM SEWER BACKFILL BORINGS

Photo 5: Geoprobe boring (MH-1-BF) borehole northeast of manhole MH-1 resurfaced with topsoil. View to southeast; photograph taken on September 20, 2021.

Photo 6: Geoprobe boring (MH-1-BF) borehole northeast of manhole MH-1 resurfaced with seed. View to east; photograph taken on September 20, 2021

ATTACHMENT 2
STORM SEWER BACKFILL BORINGS

Photo 7: XPose (hydrovac contractor) conducting hydrovac excavation to the northeast of manhole MH-2. View to southwest; photograph taken on September 20, 2021.

Photo 8: The open HydroVac excavation northeast of manhole MH-2. Water recharged rapidly to cover pipe. View to west; photograph taken on September 20, 2021.

ATTACHMENT 2
STORM SEWER BACKFILL BORINGS

Photo 9: Geoprobe boring (MH-2-BF) within open Hydro-vac borehole northeast of manhole MH-2. View to north-west; photograph taken on September 20, 2021.

Photo 10: Geoprobe boring (MH-2-BF) northeast of manhole MH-2 backfilled with bentonite chips. View to east; photo-graph taken on September 20, 2021.

Photo 11: XPose (hydrovac contractor) conducting hydrovac excavation to the northeast of manhole MH-3. View to south; photograph taken on September 20, 2021.

Photo 12: The open HydroVac excavation northeast of manhole MH-3. Exposed stormwater pipe. View to west; photograph taken on September 20, 2021.

Photo 13: Geoprobe boring (MH-3-BF) within open Hydro-vac borehole northeast of manhole MH-3. View to east; photograph taken on September 20, 2021.

Photo 14: Geoprobe boring (MH-3-BF) northeast of manhole MH-3 backfilled with bentonite chips. View to west; photograph taken on September 20, 2021.

ATTACHMENT 2
STORM SEWER BACKFILL BORINGS

Photo 15: XPose (hydrovac contractor) conducting hydrovac excavation to the northeast of manhole MH-4. View to north; photograph taken on September 20, 2021.

Photo 16: The open HydroVac excavation northeast of manhole MH-4. Exposed stormwater pipe. View to west; photograph taken on September 20, 2021.

ATTACHMENT 2
STORM SEWER BACKFILL BORINGS

Photo 17: Geoprobe boring (MH-4-BF) within open Hydro-vac borehole northeast of manhole MH-4. View to northeast; photograph taken on September 20, 2021.

Photo 18: Geoprobe boring (MH-4-BF) northeast of manhole MH-4 backfilled with bentonite chips. View to west; photograph taken on September 20, 2021.

ATTACHMENT 3

MANHOLE ASSESSMENT ACTIVITIES AND CONDITIONS PHOTOGRAPHS

Photo 1: Manhole MH-1 within grass east of South Marina Drive. View to south; photograph taken on September 1, 2021.

Photo 2: Manhole MH-1 interior with litter, debris, and grass. View to east; photograph taken on September 1, 2021.

Photo 3: Manhole MH-2 within grass east of South Marina Drive. View to northwest; photograph taken on September 1, 2021.

Photo 4: Manhole MH-2 interior with debris. View to north-east; photograph taken on September 1, 2021.

Photo 5: Manhole MH-3 within grass east of South Marina Drive. Sigma personnel decanting water from bucket. View to southwest; photograph taken on September 1, 2021.

Photo 6: Sediment within manhole MH-4 being sampled with pivoted dustpan. View to northwest; photograph taken on September 1, 2021.

Photo 7: Manhole MH-4 interior with black & turbid water. View to north; photograph taken on September 1, 2021.

Photo 8: Water within manhole MH-5 (located in grass east of South Marina Drive) being sampled with peristaltic pump. View to northwest; photograph taken on September 2, 2021.

Photo 9: Manhole MH-5 interior with black & turbid water, low water column, and small amounts of sediments on bottom of SE invert. View to east; photograph taken on September 2, 2021.

Photo 10: Manhole MH-1 interior with litter, debris, and grass. View to east; photograph taken on October 4, 2021.

Photo 11: Levelogger MH-1 setup. Rope tied to manhole cover due to lack of ladder. View to northeast; photograph taken on October 4, 2021.

Photo 12: Manhole MH-2 interior with debris. View to north; photograph taken on October 4, 2021.

Photo 13: Manhole MH-3 interior with debris. View to east; photograph taken on October 4, 2021.

Photo 14: Manhole MH-4 interior with black silty water. Level logger for manhole MH-4 and barometric pressure logger tied to manhole ladder. View to east; photograph taken on October 4, 2021.

Photo 15: Manhole MH-5 interior with black, silty water. E Invert (on right). View to east; photograph taken on October 4, 2021.

Photo 16: Manhole MH-14 elevated approximately 2.6 feet above neighboring ground surface. View to south; photograph taken on September 2, 2021.

Photo 17: Manhole MH-14 interior, with trace sediment in the central portion of the pipe. Levelogger MH-14 tied to ladder on south side. View to southeast; photograph taken on October 4, 2021.

Photo 18: Manhole MH-15 exterior north of fence and elevated concrete-paved loading dock of 427 E. Stewart Street property. View to south; photograph taken on September 2, 2021.

Photo 19: Manhole MH-15 interior with trace sediment and low water column. S invert (left) and W invert (right). View to southwest; photograph taken on October 4, 2021.

Photo 20: Metal screen used to protect SLIP levelogger. The level logger is secured to the top of the screen. Photograph taken on October 4, 2021.

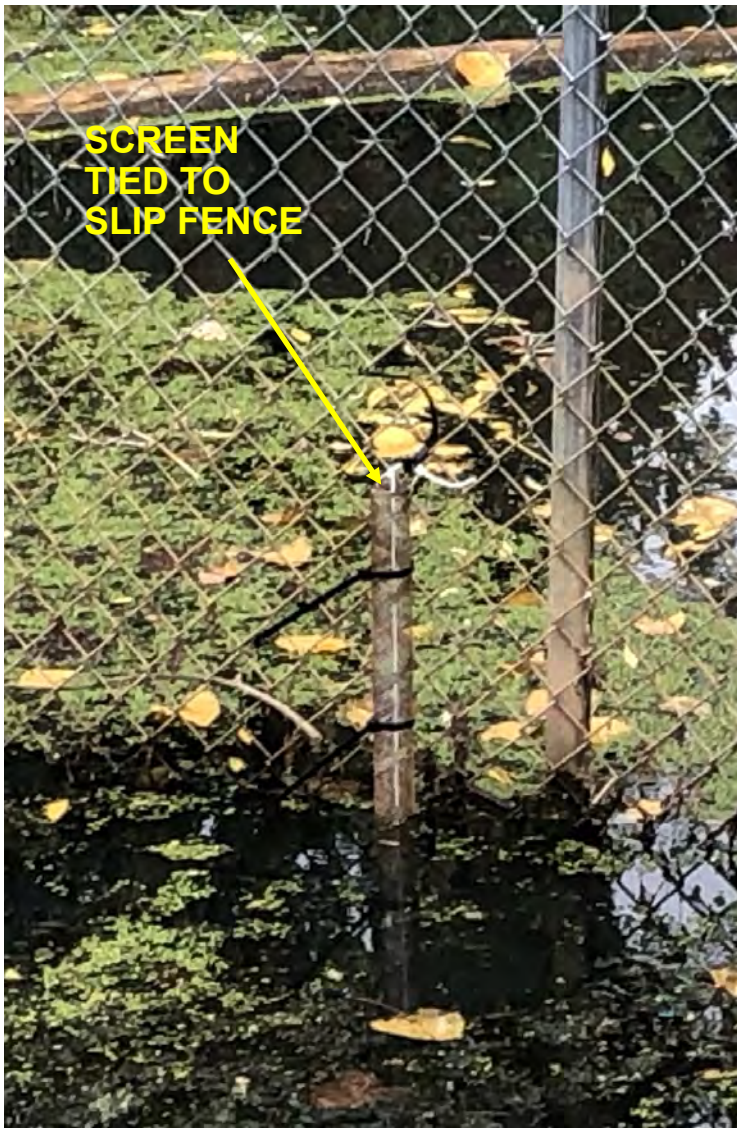


Photo 21: Metal screen fastened to fence running through the middle of Skipper Bud's Slip. The level logger is secured to the top of the screen. View to south; photograph taken on October 4, 2021.

Photo 22: Manhole MH-4 interior with black silty water. View to northwest; photograph taken on October 11, 2021.

Photo 23: Manhole MH-4 interior with black silty water. View to northwest; photograph taken on February 28, 2022.

Photo 24: Manhole MH-11 exterior in 1982 S. Hilbert Street property parking lot. View to southwest; photograph taken on April 4, 2022.

Photo 25: Manhole MH-11 interior. View to north; photograph taken on April 4, 2022,

Photo 26: Manhole MH-12 exterior in 1982 S. Hilbert Street property parking lot, with manhole MH-11 in distance. View to north; photograph taken on April 4, 2022.

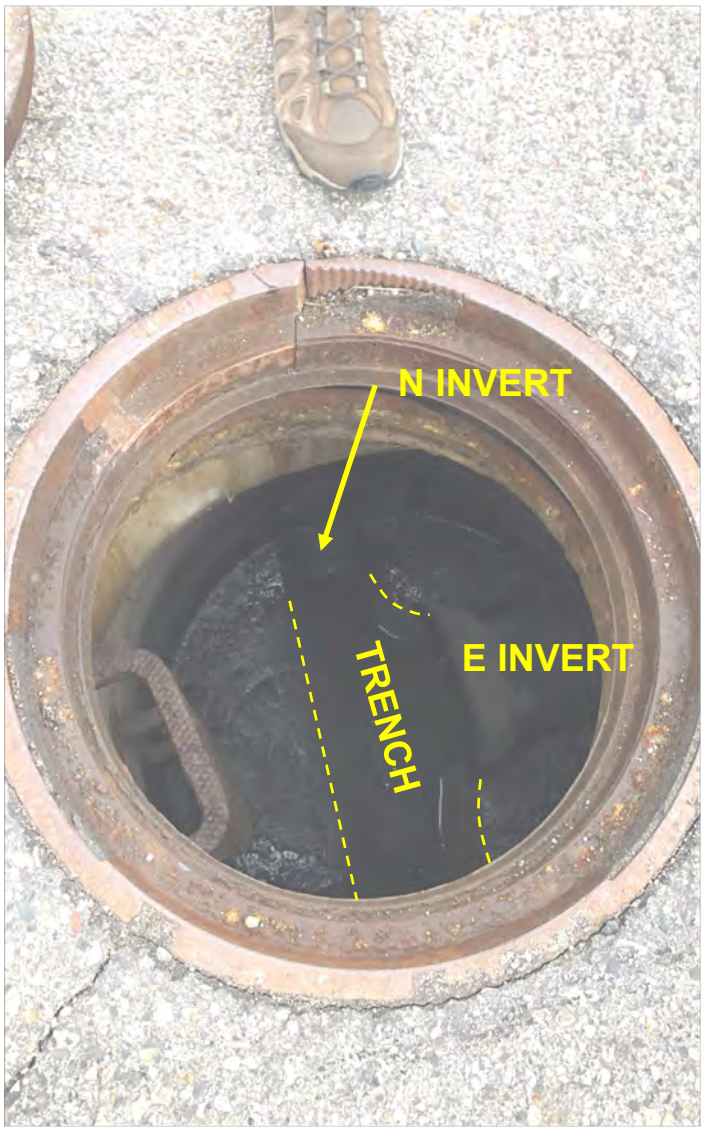


Photo 27: Manhole MH-12 interior with low water level and visible concrete trench & inverts, and trace sediment. View to northwest; photograph taken on April 4, 2022.

Photo 28: Manhole MH-13 exterior in 1982 S. Hilbert Street property parking lot. View to south; photograph taken on April 4, 2022.

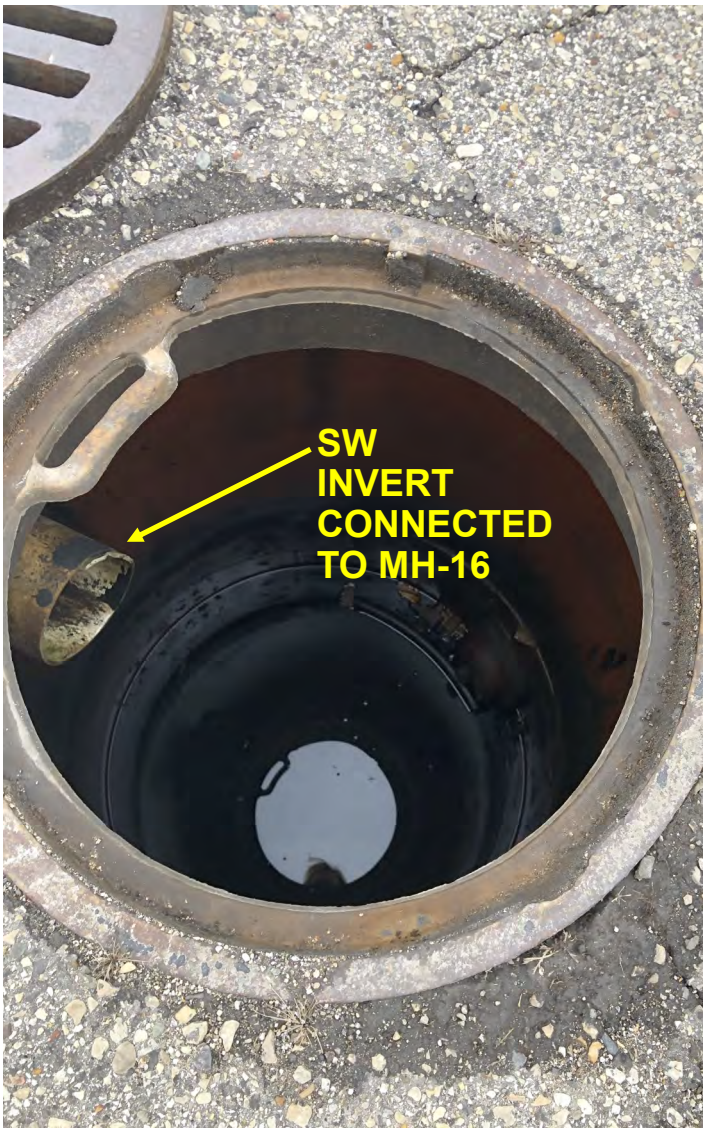


Photo 29: Manhole MH-13 interior with visible SW invert connected to manhole MH-16. View to northwest; photograph taken on April 4, 2022.

Photo 30: Manhole MH-16 exterior on edge of 1982 S. Hilbert Street property parking lot and northern edge of hill. View to west; photograph taken on April 7, 2022.

Photo 31: Manhole MH-16 interior with visible NE invert connected to manhole MH-13 and high water level. View to northeast; photograph taken on April 7, 2022.

ATTACHMENT 4

MANHOLE SEDIMENT ANALYTICAL REPORTS

Synergy Environmental Lab, INC

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

MAFIZUL ISLAM
THE SIGMA GROUP, INC.
1300 W. CANAL STREET
MILWAUKEE. WI 53233

Report Date *17-Sep-21*

Project Name GRAND TRUNK **Invoice #** E39909
Project # 19270

Lab Code 5039909A
Sample ID MH-1
Sample Matrix Soil
Sample Date 9/1/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	74.5	%			1	5021		9/7/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1221	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1232	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1242	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1248	3.66	mg/kg	0.074	0.246	10	EPA 8082A		9/14/2021	ESC	1
PCB-1254	< 0.0148	mg/kg	0.0148	0.0492	2	EPA 8082A		9/13/2021	ESC	1
PCB-1260	1.61	mg/kg	0.0148	0.0492	2	EPA 8082A		9/13/2021	ESC	1

Lab Code 5039909B
Sample ID MH-1
Sample Matrix Water
Sample Date 9/1/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PCB'S										
PCB-1016	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1221	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1232	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1242	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1248	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1
PCB-1254	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1
PCB-1260	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1

Project Name GRAND TRUNK **Invoice #** E39909
Project # 19270

Lab Code 5039909C
Sample ID MH-2
Sample Matrix Soil
Sample Date 9/1/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	80.3	%			1	5021		9/7/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1221	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1232	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1242	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1248	4.35	mg/kg	0.074	0.246	10	EPA 8082A		9/14/2021	ESC	1
PCB-1254	< 0.0148	mg/kg	0.0148	0.0492	2	EPA 8082A		9/13/2021	ESC	1
PCB-1260	1.71	mg/kg	0.0148	0.0492	2	EPA 8082A		9/13/2021	ESC	1

Lab Code 5039909D
Sample ID MH-2
Sample Matrix Water
Sample Date 9/1/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PCB'S										
PCB-1016	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1221	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1232	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1242	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1248	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1
PCB-1254	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1
PCB-1260	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1

Lab Code 5039909E
Sample ID MH-3
Sample Matrix Soil
Sample Date 9/1/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	69.6	%			1	5021		9/7/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1221	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1232	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1242	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1248	9.13	mg/kg	0.074	0.246	10	EPA 8082A		9/14/2021	ESC	1
PCB-1254	< 0.0148	mg/kg	0.0148	0.0492	2	EPA 8082A		9/13/2021	ESC	1
PCB-1260	4.96	mg/kg	0.074	0.246	10	EPA 8082A		9/14/2021	ESC	1

Project Name GRAND TRUNK **Invoice #** E39909
Project # 19270

Lab Code 5039909F
Sample ID MH-3
Sample Matrix Water
Sample Date 9/1/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PCB'S										
PCB-1016	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1221	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1232	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1242	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1248	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1
PCB-1254	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1
PCB-1260	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1

Lab Code 5039909G
Sample ID MH-4
Sample Matrix Soil
Sample Date 9/1/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	71.7	%			1	5021		9/7/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1221	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1232	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1242	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		9/13/2021	ESC	1
PCB-1248	8.55	mg/kg	0.074	0.246	10	EPA 8082A		9/14/2021	ESC	1
PCB-1254	< 0.0148	mg/kg	0.0148	0.0492	2	EPA 8082A		9/13/2021	ESC	1
PCB-1260	4.00	mg/kg	0.074	0.246	10	EPA 8082A		9/14/2021	ESC	1

Lab Code 5039909H
Sample ID MH-4
Sample Matrix Water
Sample Date 9/1/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PCB'S										
PCB-1016	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1221	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1232	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1242	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1248	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1
PCB-1254	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1
PCB-1260	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1

Project Name GRAND TRUNK **Invoice #** E39909
Project # 19270

Lab Code 5039909I
Sample ID MH-5
Sample Matrix Soil
Sample Date 9/1/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	64.0	%			1	5021		9/7/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		9/11/2021	ESC	1
PCB-1221	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		9/11/2021	ESC	1
PCB-1232	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		9/11/2021	ESC	1
PCB-1242	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		9/11/2021	ESC	1
PCB-1248	0.180	mg/kg	0.0074	0.0246	1	EPA 8082A		9/11/2021	ESC	1
PCB-1254	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		9/11/2021	ESC	1
PCB-1260	0.081	mg/kg	0.0074	0.0246	1	EPA 8082A		9/11/2021	ESC	1

Lab Code 5039909J
Sample ID MH-5
Sample Matrix Water
Sample Date 9/1/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PCB'S										
PCB-1016	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1221	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1232	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1242	< 0.269	ug/l	0.269	0.898	1	8082A		9/14/2021	ESC	1
PCB-1248	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1
PCB-1254	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1
PCB-1260	< 0.173	ug/l	0.173	0.575	1	8082A		9/14/2021	ESC	1

"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.

ESC denotes sub contract lab - Certification #998093910

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature

CHAIN OF CUSTODY RECORD

Synergy

Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # Nº 275

Page 1 of 1

Sample Handling Request

____ Rush Analysis Date Required ____
(Rushes accepted only with prior authorization)

X Normal Turn Around

Lab I.D. #

Account No. :

Quote No.: C.O.M.

Project #: 19270

Sampler: (signature) Dan McCoy for James Schmidt

Project (Name / Location): Grand Trunk S Manna Dr Sewer/S. Manna Dr, Milwaukee, WI

Reports To: Mafizul Islam	Invoice To: T
Company The Sigma Group, Inc.	Company
Address 1300 W Canal St	Address SAME
City State Zip Milwaukee, WI 53233	City State Zip
Phone (414) 643-4125	Phone
~~FAX~~ Email: mislam@thesigmagroup.com	~~FAX~~ Email

Analysis Requested | **Other Analysis**

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 542.2)	VOC (EPA 8260)	8-RCRA METALS	PID/ FID
S039909A	MH-1	9/1/21	10:30		X	N	1	SOIL	none							X								
B	MH-1	"	10:30		X	"	1	GW	"							X								
C	MH-2	"	11:40		X	"	1	SOIL	"							X								
D	MH-2	"	11:40		X	"	1	GW	"							X								
E	MH-3	"	13:40		X	"	1	SOIL	"							X								
F	MH-3	"	13:40		X	"	1	GW	"							X								
G	MH-4	"	14:22		X	"	1	SOIL	"							X								
H	MH-4	"	14:14		X	"	1	GW	"							X								
I	MH-5	9/2/21	9:45		X	"	1	SOIL	"							X								
J	MH-5	"	8:30		X	"	1	GW	"							X								

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Sample Integrity - To be completed by receiving lab.

Method of Shipment: C>

Temp. of Temp. Blank ___ °C On Ice: X

Cooler seal intact upon receipt: X Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
James Schmidt	12:30	9/2/21			
James A Schmidt	18:55	9/3/21			

Received in Laboratory By: [signature] Time: 1300 Date: 9/4/21

Synergy Environmental Lab, INC

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

MAFIZUL ISLAM
THE SIGMA GROUP, INC.
1300 W. CANAL STREET
MILWAUKEE. WI 53233

Report Date *21-Oct-21*

Project Name SOUTH MARINA DRIVE **Invoice #** E40033
Project # 19270

Lab Code 5040033A
Sample ID MH 14
Sample Matrix Soil
Sample Date 10/4/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	63.1	%			1	5021		10/6/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/19/2021	ESC	1
PCB-1221	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/19/2021	ESC	1
PCB-1232	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/19/2021	ESC	1
PCB-1242	2.20	mg/kg	0.0118	0.0394	1	EPA 8082A		10/19/2021	ESC	1
PCB-1248	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/19/2021	ESC	1
PCB-1254	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/19/2021	ESC	1
PCB-1260	4.03	mg/kg	0.037	0.123	5	EPA 8082A		10/20/2021	ESC	1

Project Name SOUTH MARINA DRIVE **Invoice #** E40033
Project # 19270

Lab Code 5040033B
Sample ID MH 15
Sample Matrix Soil
Sample Date 10/4/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	71.6	%			1	5021		10/6/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/19/2021	ESC	1 67
PCB-1221	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/19/2021	ESC	1 67
PCB-1232	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/19/2021	ESC	1 67
PCB-1242	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/19/2021	ESC	1 67
PCB-1248	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/19/2021	ESC	1 67
PCB-1254	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/19/2021	ESC	1 67
PCB-1260	120	mg/kg	1.48	4.92	200	EPA 8082A		10/20/2021	ESC	1 72

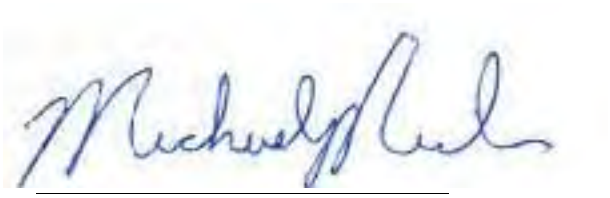
"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.
67	Surrogate recovery failed high.
72	Surrogate recoveries not determined due to high sample dilution.

ESC denotes sub contract lab - Certification #998093910

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature



CHAIN OF CUSTODY RECORD

Synergy Environmental Lab, Inc.

www.synergy-lab.net
1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • mrsynergy@wi.twcbc.com

Chain # No 37133

Page 1 of 1

Sample Handling Request

___ Rush Analysis Date Required: ___
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #
QUOTE # :
Project #: 19270
Sampler: (signature) Sam McCoy

Project (Name / Location): South Marina Drive Milwaukee, WI

Reports To: Mafizul Islam	Invoice To:
Company The Sigma Group	Company
Address 1300 West Canal Street	Address
City State Zip Milwaukee, WI 53233	City State Zip
Phone 414-643-4125	Phone
Email mislam@thesigmagroup.com	Email

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 524.2)	VOC (EPA 8260)	VOC AIR (TO - 15)	8-RCRA METALS	PID/ FID
5040033 A	MH 14	10/4/21	10:50	N	1	Soil	None							X									
B	MH 15	10/4/21	10:25	N	1	Soil	None							X									

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge, etc.)

Sample Integrity - To be completed by receiving lab.

Method of Shipment: CS

Temp. of Temp. Blank: ___ °C On Ice: X

Cooler seal intact upon receipt: X Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	6:30	10/5/21			

Received in Laboratory By: _____ Time: 8:00 Date: 10/6/21

Synergy Environmental Lab, LLC.

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

MAFIZUL ISLAM
THE SIGMA GROUP, INC.
1300 W. CANAL STREET
MILWAUKEE. WI 53233

Report Date *07-Dec-21*

Project Name GRAND TRUNK PCB SEWER **Invoice #** E40207
Project # 19270

Lab Code 5040207A
Sample ID MH-14
Sample Matrix Soil
Sample Date 11/12/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	77.4	%			1	5021		11/17/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		11/30/2021	ESC	2 3 72
PCB-1221	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		11/30/2021	ESC	1 72
PCB-1232	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		11/30/2021	ESC	1 72
PCB-1242	< 0.0236	mg/kg	0.0236	0.0788	2	EPA 8082A		11/30/2021	ESC	1 72
PCB-1248	34.8	mg/kg	0.74	2.46	100	EPA 8082A		12/2/2021	ESC	1 72
PCB-1254	< 0.0148	mg/kg	0.0148	0.0492	2	EPA 8082A		11/30/2021	ESC	1 72
PCB-1260	22.6	mg/kg	0.74	2.46	100	EPA 8082A		12/2/2021	ESC	1 72

Project Name GRAND TRUNK PCB SEWER **Invoice #** E40207
Project # 19270

Lab Code 5040207B
Sample ID MH-15
Sample Matrix Soil
Sample Date 11/12/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	41.0	%			1	5021		11/17/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		11/30/2021	ESC	1 67
PCB-1221	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		11/30/2021	ESC	1 67
PCB-1232	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		11/30/2021	ESC	1 67
PCB-1242	9.68	mg/kg	0.118	0.394	10	EPA 8082A		12/2/2021	ESC	1 67
PCB-1248	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		11/30/2021	ESC	1 67
PCB-1254	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		11/30/2021	ESC	1 67
PCB-1260	15.8	mg/kg	0.074	0.246	10	EPA 8082A		12/2/2021	ESC	1 67

"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.
2	Relative percent difference failed for laboratory spiked samples.
3	The matrix spike not within established limits.
67	Surrogate recovery failed high.
72	Surrogate recoveries not determined due to high sample dilution.

ESC denotes sub contract lab - Certification #998093910

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature

CHAIN OF STODY RECORD

Synergy Environmental Lab, Inc.

www.synergy-lab.net
1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • mrsynergy@wi.twcbc.com

Chain # 43694

Page 1 of 1

Sample Handling Request

____ Rush Analysis Date Required: _____
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #	
QUOTE # :	
Project #: 19270	
Sampler: (signature)	
Project (Name / Location): Grand Trunk PCB Sewer/1982 S. Hilbert Street, Milwaukee, WI	
Reports To: Mafizul Islam	Invoice To:
Company The Sigma Group	Company
Address 1300 W. Canal Street	Address SAME
City State Zip Milwaukee, WI, 53233	City State Zip
Phone 414-643-4125	Phone
Email m.islam@thesigmagroup.com	Email

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 524.2)	VOC (EPA 8260)	VOC AIR (TO - 15)	8-RCRA METALS	PID/ FID
5040207A	MH-14	11/12	1:00pm	N	1	Soil	N/A							X									
B	MH-15	11/12	1:00pm	N	1	Soil	N/A							X									

Analysis Requested — Other Analysis

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge, etc.)

Sample Integrity - To be completed by receiving lab.

Method of Shipment: CS

Temp. of Temp. Blank: _____ °C On Ice: X

Cooler seal intact upon receipt: X Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	8:00am	11/16			

Received in Laboratory By: Time: 8:00 Date: 11/17/21

Synergy Environmental Lab, LLC.

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

MAFIZUL ISLAM
THE SIGMA GROUP, INC.
1300 W. CANAL STREET
MILWAUKEE. WI 53233

Report Date *20-Apr-22*

Project Name SOUTH MARINA DRIVE SEWER **Invoice #** E40767
Project # 19270

Lab Code 5040767A
Sample ID MH-11
Sample Matrix Soil
Sample Date 4/4/2022

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	65.3	%			1	5021		4/6/2022	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.565	mg/kg	0.565	1.89	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1221	< 3.09	mg/kg	3.09	10.3	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1232	< 3.09	mg/kg	3.09	10.3	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1242	< 3.09	mg/kg	3.09	10.3	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1248	< 3.09	mg/kg	3.09	10.3	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1254	< 3.09	mg/kg	3.09	10.3	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1260	< 0.381	mg/kg	0.381	1.27	20	EPA 8082A		4/13/2022	SL	1 49

Project Name SOUTH MARINA DRIVE SEWER **Invoice #** E40767
Project # 19270

Lab Code 5040767B
Sample ID MH-12
Sample Matrix Soil
Sample Date 4/4/2022

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	47.4	%			1	5021		4/6/2022	NJC	1
Organic										
PCB'S										
PCB-1016	0.149	mg/kg	0.027	0.089	1	EPA 8082A		4/12/2022	SL	1
PCB-1221	< 0.146	mg/kg	0.146	0.487	1	EPA 8082A		4/12/2022	SL	1
PCB-1232	< 0.146	mg/kg	0.146	0.487	1	EPA 8082A		4/12/2022	SL	1
PCB-1242	< 0.146	mg/kg	0.146	0.487	1	EPA 8082A		4/12/2022	SL	1
PCB-1248	< 0.146	mg/kg	0.146	0.487	1	EPA 8082A		4/12/2022	SL	1
PCB-1254	< 0.146	mg/kg	0.146	0.487	1	EPA 8082A		4/12/2022	SL	1
PCB-1260	0.152	mg/kg	0.018	0.06	1	EPA 8082A		4/12/2022	SL	1

Lab Code 5040767C
Sample ID MH-13
Sample Matrix Soil
Sample Date 4/4/2022

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	62.2	%			1	5021		4/6/2022	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.596	mg/kg	0.596	0.78	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1221	< 3.26	mg/kg	3.26	0.78	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1232	< 3.26	mg/kg	3.26	0.78	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1242	< 3.26	mg/kg	3.26	0.78	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1248	< 3.26	mg/kg	3.26	0.5	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1254	< 3.26	mg/kg	3.26	0.5	20	EPA 8082A		4/13/2022	SL	1 49
PCB-1260	< 0.403	mg/kg	0.134	0.5	20	EPA 8082A		4/13/2022	SL	1 49

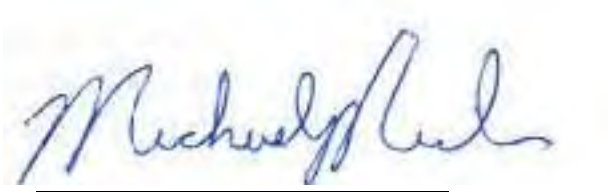
"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.
49	Sample diluted to compensate for matrix interference.

SL denotes sub contract lab - Certification #399089350

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature



CHAIN OF CUSTODY RECORD

Synergy
Environmental Lab, Inc.

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920-830-2455 • mrsynergy@wi.twcbc.com

Chain # 43399
Page 1 of 1

Sample Handling Request
___ Rush Analysis Date Required: ____
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #
QUOTE #: C.O.M.
Project #: 19270
Sampler: (signature) James Schmidt

Project (Name / Location): South Manna Drive Sewer/South Manna Dr, Milwaukee, WI

Reports To:	Mafizul Islam	Invoice To:	
Company	The Sigma Group, Inc.	Company	
Address	1300 W. Canal Street	Address	SAME
City State Zip	Milwaukee, WI 53233	City State Zip	
Phone	414-643-4125	Phone	
Email	mislam@thesigmagroup.com	Email	

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	PCB	PID/ FID
5040767A	MH-11	4/4/22	18:01	N	1	SOIL	none	X	—
B	MH-12	1	18:12	N	1	1	1	X	—
C	MH-13	1	16:42	N	1	1	1	X	—

Analysis Requested / Other Analysis

DRO (Mod DRO Sep 95); GRO (Mod GRO Sep 95); LEAD; NITRATE/NITRITE; OIL & GREASE; PAH (EPA 8270); PCB; PVOC (EPA 8021); PVOC + NAPHTHALENE; SULFATE; TOTAL SUSPENDED SOLIDS; VOC DW (EPA 524.2); VOC (EPA 8260); VOC AIR (TO - 15); 8-RCRA METALS

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge, etc.)
- Not much volume could be obtained for sample MH-12

Sample Integrity - To be completed by receiving lab.
Method of Shipment: CS
Temp. of Temp. Blank: ____ °C On Ice: X
Cooler seal intact upon receipt: X Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
James Schmidt	10:15	4/5/22			

Received in Laboratory By: [signature] Time: 8:00 Date: 4/6/22

Synergy Environmental Lab, LLC.

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

MAFIZUL ISLAM
THE SIGMA GROUP, INC.
1300 W. CANAL STREET
MILWAUKEE. WI 53233

Report Date *26-Apr-22*

Project Name S MARINA DRIVE STORM SEWER **Invoice #** E40781
Project # 19270

Lab Code 5040781A
Sample ID MH-16
Sample Matrix Soil
Sample Date 4/7/2022

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	47.9	%			1	5021		4/11/2022	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.576	mg/kg	0.576	1.92	10	EPA 8082A		4/19/2022	SL	1 49
PCB-1221	< 3.15	mg/kg	3.15	10.5	10	EPA 8082A		4/19/2022	SL	1 49
PCB-1232	< 3.15	mg/kg	3.15	10.5	10	EPA 8082A		4/19/2022	SL	1 49
PCB-1242	< 3.15	mg/kg	3.15	10.5	10	EPA 8082A		4/19/2022	SL	1 49
PCB-1248	< 3.15	mg/kg	3.15	10.5	10	EPA 8082A		4/19/2022	SL	1 49
PCB-1254	< 3.15	mg/kg	3.15	10.5	10	EPA 8082A		4/19/2022	SL	1 49
PCB-1260	< 0.389	mg/kg	0.389	1.3	10	EPA 8082A		4/19/2022	SL	1 49

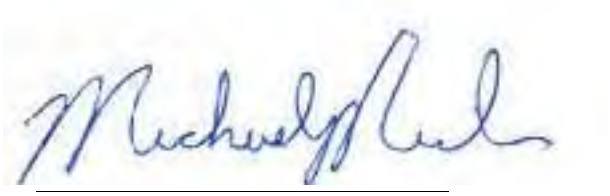
"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.
49	Sample diluted to compensate for matrix interference.

SL denotes sub contract lab - Certification #399089350

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature



CHAIN OF CUSTODY RECORD

Synergy
Environmental Lab, Inc.

www.synergy-lab.net
1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • mrsynergy@wi.twcbc.com

Chain # No 38729

Page 1 of 1

Sample Handling Request

___ Rush Analysis Date Required: ___
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #

QUOTE #: C.O.M

Project #: 19270

Sampler: (signature) James Schmidt

Project (Name / Location): S. Marina Dr. Storm Sewer

Reports To:	Mafizul Islam	Invoice To:	
Company	The Sigma Group, Inc.	Company	
Address	1300 W. Canal Street	Address	SAME
City State Zip	Milwaukee, WI 53233	City State Zip	
Phone	414-643-4125	Phone	
Email	mislam@thesigmagroup.com	Email	

Analysis Requested | **Other Analysis**

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 524.2)	VOC (EPA 8260)	VOC AIR (TO - 15)	8-RCRA METALS	PID/ FID
504078	MH-16	4/7/22	17:07	N	1	SOIL	none							X									—

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge, etc.)

Sample Integrity - To be completed by receiving lab.

Method of Shipment: CS

Temp. of Temp. Blank: ___ °C On Ice: X

Cooler seal intact upon receipt: X Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
James Schmidt	9:00	4/8/22			

Received in Laboratory By: [signature] Time: 13:00 Date: 4/9/22

ATTACHMENT 5

MANHOLE WATER ANALYTICAL REPORTS

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-128058-1
Client Project/Site: 19270

For:
Synergy Environmental Lab, Inc.
1990 Prospect Ct.
Appleton, Wisconsin 54914

Attn: Mike Ricker

Authorized for release by:
10/14/2021 1:30:46 PM
Dominic Nestasie, Project Manager
(412)963-7058
Dominic.Nestasie@Eurofinset.com

Designee for

Andy Johnson, Manager of Project Management
(615)301-5045
Andy.Johnson@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-128058-1

Job ID: 180-128058-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-128058-1

Receipt
The samples were received on 10/5/2021 3:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.8º C.

GC Semi VOA
Method 8082A: Surrogate recovery for the following samples were outside control limits: MH 1 (180-128058-1), MH 14 (180-128058-6) and MH 15 (180-128058-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 180-374754.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-128058-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
X	Surrogate recovery exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Synergy Environmental Lab, Inc. Job ID: 180-128058-1
Project/Site: 19270

Laboratory: Eurofins TestAmerica, Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998027800	08-31-22

Sample Summary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-128058-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-128058-1	MH 1	Water	10/04/21 12:25	10/05/21 15:00
180-128058-2	MH 2	Water	10/04/21 12:05	10/05/21 15:00
180-128058-3	MH 3	Water	10/04/21 11:50	10/05/21 15:00
180-128058-4	MH 4	Water	10/04/21 11:35	10/05/21 15:00
180-128058-5	MH 5	Water	10/04/21 11:20	10/05/21 15:00
180-128058-6	MH 14	Water	10/04/21 10:50	10/05/21 15:00
180-128058-7	MH 15	Water	10/04/21 10:25	10/05/21 15:00

Method Summary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-128058-1

Method	Method Description	Protocol	Laboratory
EPA 8082A	Polychlorinated Biphenyls (PCBs) (GC)	SW846	TAL PIT
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL PIT

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-128058-1

Client Sample ID: MH 1

Lab Sample ID: 180-128058-1
Matrix: Water
Date Collected: 10/04/21 12:25
Date Received: 10/05/21 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			990 mL	1.0 mL	374754	10/11/21 07:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8082A		1			375005	10/13/21 12:51	JMO	TAL PIT
	Instrument ID: CHGC20									

Client Sample ID: MH 2

Lab Sample ID: 180-128058-2
Matrix: Water
Date Collected: 10/04/21 12:05
Date Received: 10/05/21 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			990 mL	1.0 mL	374754	10/11/21 07:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8082A		1			375005	10/13/21 14:05	JMO	TAL PIT
	Instrument ID: CHGC20									

Client Sample ID: MH 3

Lab Sample ID: 180-128058-3
Matrix: Water
Date Collected: 10/04/21 11:50
Date Received: 10/05/21 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1000 mL	1.0 mL	374754	10/11/21 07:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8082A		1			375005	10/13/21 14:24	JMO	TAL PIT
	Instrument ID: CHGC20									

Client Sample ID: MH 4

Lab Sample ID: 180-128058-4
Matrix: Water
Date Collected: 10/04/21 11:35
Date Received: 10/05/21 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			990 mL	1.0 mL	374754	10/11/21 07:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8082A		1			375005	10/13/21 14:43	JMO	TAL PIT
	Instrument ID: CHGC20									

Client Sample ID: MH 5

Lab Sample ID: 180-128058-5
Matrix: Water
Date Collected: 10/04/21 11:20
Date Received: 10/05/21 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1000 mL	1.0 mL	374754	10/11/21 07:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8082A		1			375005	10/13/21 15:01	JMO	TAL PIT
	Instrument ID: CHGC20									

Lab Chronicle

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-128058-1

Client Sample ID: MH 14

Date Collected: 10/04/21 10:50
Date Received: 10/05/21 15:00

Lab Sample ID: 180-128058-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1000 mL	1.0 mL	374754	10/11/21 07:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8082A		1			375005	10/13/21 15:20	JMO	TAL PIT
	Instrument ID: CHGC20									

Client Sample ID: MH 15

Date Collected: 10/04/21 10:25
Date Received: 10/05/21 15:00

Lab Sample ID: 180-128058-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			990 mL	1.0 mL	374754	10/11/21 07:30	SNP	TAL PIT
Total/NA	Analysis	EPA 8082A		1			375005	10/13/21 15:39	JMO	TAL PIT
	Instrument ID: CHGC20									

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

SNP = Sydney Prugh

Batch Type: Analysis

JMO = John Oravec

Client Sample ID: MH 1

Date Collected: 10/04/21 12:25
Date Received: 10/05/21 15:00

Lab Sample ID: 180-128058-1

Matrix: Water

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0048		0.010	0.0048	ug/L		10/11/21 07:30	10/13/21 12:51	1
PCB-1221	<0.0058		0.010	0.0058	ug/L		10/11/21 07:30	10/13/21 12:51	1
PCB-1232	<0.0053		0.010	0.0053	ug/L		10/11/21 07:30	10/13/21 12:51	1
PCB-1242	<0.0036		0.010	0.0036	ug/L		10/11/21 07:30	10/13/21 12:51	1
PCB-1248	<0.0030		0.010	0.0030	ug/L		10/11/21 07:30	10/13/21 12:51	1
PCB-1254	**0.072**		0.010	0.0046	ug/L		10/11/21 07:30	10/13/21 12:51	1
PCB-1260	<0.0040		0.010	0.0040	ug/L		10/11/21 07:30	10/13/21 12:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*92*		*59 - 124*	*10/11/21 07:30*	*10/13/21 12:51*	*1*
DCB Decachlorobiphenyl (Surr)	*73*		*59 - 124*	*10/11/21 07:30*	*10/13/21 12:51*	*1*
Tetrachloro-m-xylene (Surr)	*130*	*X*	*41 - 118*	*10/11/21 07:30*	*10/13/21 12:51*	*1*
Tetrachloro-m-xylene (Surr)	*103*		*41 - 118*	*10/11/21 07:30*	*10/13/21 12:51*	*1*

Client Sample ID: MH 2

Date Collected: 10/04/21 12:05
Date Received: 10/05/21 15:00

Lab Sample ID: 180-128058-2

Matrix: Water

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0048		0.010	0.0048	ug/L		10/11/21 07:30	10/13/21 14:05	1
PCB-1221	<0.0058		0.010	0.0058	ug/L		10/11/21 07:30	10/13/21 14:05	1
PCB-1232	<0.0053		0.010	0.0053	ug/L		10/11/21 07:30	10/13/21 14:05	1
PCB-1242	<0.0036		0.010	0.0036	ug/L		10/11/21 07:30	10/13/21 14:05	1
PCB-1248	<0.0030		0.010	0.0030	ug/L		10/11/21 07:30	10/13/21 14:05	1
PCB-1254	**0.094**		0.010	0.0046	ug/L		10/11/21 07:30	10/13/21 14:05	1
PCB-1260	<0.0040		0.010	0.0040	ug/L		10/11/21 07:30	10/13/21 14:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*98*		*59 - 124*	*10/11/21 07:30*	*10/13/21 14:05*	*1*
DCB Decachlorobiphenyl (Surr)	*81*		*59 - 124*	*10/11/21 07:30*	*10/13/21 14:05*	*1*
Tetrachloro-m-xylene (Surr)	*75*		*41 - 118*	*10/11/21 07:30*	*10/13/21 14:05*	*1*
Tetrachloro-m-xylene (Surr)	*102*		*41 - 118*	*10/11/21 07:30*	*10/13/21 14:05*	*1*

Client Sample ID: MH 3

Date Collected: 10/04/21 11:50
Date Received: 10/05/21 15:00

Lab Sample ID: 180-128058-3

Matrix: Water

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0048		0.010	0.0048	ug/L		10/11/21 07:30	10/13/21 14:24	1
PCB-1221	<0.0057		0.010	0.0057	ug/L		10/11/21 07:30	10/13/21 14:24	1
PCB-1232	<0.0052		0.010	0.0052	ug/L		10/11/21 07:30	10/13/21 14:24	1
PCB-1242	<0.0036		0.010	0.0036	ug/L		10/11/21 07:30	10/13/21 14:24	1
PCB-1248	<0.0030		0.010	0.0030	ug/L		10/11/21 07:30	10/13/21 14:24	1
PCB-1254	<0.0046		0.010	0.0046	ug/L		10/11/21 07:30	10/13/21 14:24	1
PCB-1260	<0.0039		0.010	0.0039	ug/L		10/11/21 07:30	10/13/21 14:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*90*		*59 - 124*	*10/11/21 07:30*	*10/13/21 14:24*	*1*
DCB Decachlorobiphenyl (Surr)	*73*		*59 - 124*	*10/11/21 07:30*	*10/13/21 14:24*	*1*

Client Sample ID: MH 3 — Lab Sample ID: 180-128058-3

Date Collected: 10/04/21 11:50 — **Matrix: Water**
Date Received: 10/05/21 15:00

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene (Surr)	*58*	*p*	*41 - 118*	*10/11/21 07:30*	*10/13/21 14:24*	*1*
Tetrachloro-m-xylene (Surr)	*111*		*41 - 118*	*10/11/21 07:30*	*10/13/21 14:24*	*1*

Client Sample ID: MH 4 — Lab Sample ID: 180-128058-4

Date Collected: 10/04/21 11:35 — **Matrix: Water**
Date Received: 10/05/21 15:00

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0048		0.010	0.0048	ug/L		10/11/21 07:30	10/13/21 14:43	1
PCB-1221	<0.0058		0.010	0.0058	ug/L		10/11/21 07:30	10/13/21 14:43	1
PCB-1232	<0.0053		0.010	0.0053	ug/L		10/11/21 07:30	10/13/21 14:43	1
PCB-1242	<0.0036		0.010	0.0036	ug/L		10/11/21 07:30	10/13/21 14:43	1
PCB-1248	<0.0030		0.010	0.0030	ug/L		10/11/21 07:30	10/13/21 14:43	1
PCB-1254	<0.0046		0.010	0.0046	ug/L		10/11/21 07:30	10/13/21 14:43	1
PCB-1260	<0.0040		0.010	0.0040	ug/L		10/11/21 07:30	10/13/21 14:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*111*		*59 - 124*	*10/11/21 07:30*	*10/13/21 14:43*	*1*
DCB Decachlorobiphenyl (Surr)	*80*		*59 - 124*	*10/11/21 07:30*	*10/13/21 14:43*	*1*
Tetrachloro-m-xylene (Surr)	*68*	*p*	*41 - 118*	*10/11/21 07:30*	*10/13/21 14:43*	*1*
Tetrachloro-m-xylene (Surr)	*108*		*41 - 118*	*10/11/21 07:30*	*10/13/21 14:43*	*1*

Client Sample ID: MH 5 — Lab Sample ID: 180-128058-5

Date Collected: 10/04/21 11:20 — **Matrix: Water**
Date Received: 10/05/21 15:00

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0048		0.010	0.0048	ug/L		10/11/21 07:30	10/13/21 15:01	1
PCB-1221	<0.0057		0.010	0.0057	ug/L		10/11/21 07:30	10/13/21 15:01	1
PCB-1232	<0.0052		0.010	0.0052	ug/L		10/11/21 07:30	10/13/21 15:01	1
PCB-1242	<0.0036		0.010	0.0036	ug/L		10/11/21 07:30	10/13/21 15:01	1
PCB-1248	**0.35**		0.010	0.0030	ug/L		10/11/21 07:30	10/13/21 15:01	1
PCB-1254	<0.0046		0.010	0.0046	ug/L		10/11/21 07:30	10/13/21 15:01	1
PCB-1260	<0.0039		0.010	0.0039	ug/L		10/11/21 07:30	10/13/21 15:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*121*		*59 - 124*	*10/11/21 07:30*	*10/13/21 15:01*	*1*
DCB Decachlorobiphenyl (Surr)	*82*		*59 - 124*	*10/11/21 07:30*	*10/13/21 15:01*	*1*
Tetrachloro-m-xylene (Surr)	*71*		*41 - 118*	*10/11/21 07:30*	*10/13/21 15:01*	*1*
Tetrachloro-m-xylene (Surr)	*87*		*41 - 118*	*10/11/21 07:30*	*10/13/21 15:01*	*1*

Client Sample ID: MH 14 — Lab Sample ID: 180-128058-6

Date Collected: 10/04/21 10:50 — **Matrix: Water**
Date Received: 10/05/21 15:00

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0048		0.010	0.0048	ug/L		10/11/21 07:30	10/13/21 15:20	1
PCB-1221	<0.0057		0.010	0.0057	ug/L		10/11/21 07:30	10/13/21 15:20	1

Client Sample ID: MH 14
Lab Sample ID: 180-128058-6

Date Collected: 10/04/21 10:50
Matrix: Water
Date Received: 10/05/21 15:00

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1232	<0.0052		0.010	0.0052	ug/L		10/11/21 07:30	10/13/21 15:20	1
PCB-1242	<0.0036		0.010	0.0036	ug/L		10/11/21 07:30	10/13/21 15:20	1
PCB-1248	**0.41**		0.010	0.0030	ug/L		10/11/21 07:30	10/13/21 15:20	1
PCB-1254	<0.0046		0.010	0.0046	ug/L		10/11/21 07:30	10/13/21 15:20	1
PCB-1260	<0.0039		0.010	0.0039	ug/L		10/11/21 07:30	10/13/21 15:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*674*	*X*	*59 - 124*	*10/11/21 07:30*	*10/13/21 15:20*	*1*
DCB Decachlorobiphenyl (Surr)	*89*	*p*	*59 - 124*	*10/11/21 07:30*	*10/13/21 15:20*	*1*
Tetrachloro-m-xylene (Surr)	*72*		*41 - 118*	*10/11/21 07:30*	*10/13/21 15:20*	*1*
Tetrachloro-m-xylene (Surr)	*80*		*41 - 118*	*10/11/21 07:30*	*10/13/21 15:20*	*1*

Client Sample ID: MH 15
Lab Sample ID: 180-128058-7

Date Collected: 10/04/21 10:25
Matrix: Water
Date Received: 10/05/21 15:00

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0048		0.010	0.0048	ug/L		10/11/21 07:30	10/13/21 15:39	1
PCB-1221	<0.0058		0.010	0.0058	ug/L		10/11/21 07:30	10/13/21 15:39	1
PCB-1232	<0.0053		0.010	0.0053	ug/L		10/11/21 07:30	10/13/21 15:39	1
PCB-1242	<0.0036		0.010	0.0036	ug/L		10/11/21 07:30	10/13/21 15:39	1
PCB-1248	**0.50**		0.010	0.0030	ug/L		10/11/21 07:30	10/13/21 15:39	1
PCB-1254	<0.0046		0.010	0.0046	ug/L		10/11/21 07:30	10/13/21 15:39	1
PCB-1260	**0.22**		0.010	0.0040	ug/L		10/11/21 07:30	10/13/21 15:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*323*	*X*	*59 - 124*	*10/11/21 07:30*	*10/13/21 15:39*	*1*
DCB Decachlorobiphenyl (Surr)	*85*	*p*	*59 - 124*	*10/11/21 07:30*	*10/13/21 15:39*	*1*
Tetrachloro-m-xylene (Surr)	*84*		*41 - 118*	*10/11/21 07:30*	*10/13/21 15:39*	*1*
Tetrachloro-m-xylene (Surr)	*87*		*41 - 118*	*10/11/21 07:30*	*10/13/21 15:39*	*1*

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 180-374754/1-A
Matrix: Water
Analysis Batch: 375005

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374754

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0048		0.010	0.0048	ug/L		10/11/21 07:30	10/13/21 12:32	1
PCB-1221	<0.0057		0.010	0.0057	ug/L		10/11/21 07:30	10/13/21 12:32	1
PCB-1232	<0.0052		0.010	0.0052	ug/L		10/11/21 07:30	10/13/21 12:32	1
PCB-1242	<0.0036		0.010	0.0036	ug/L		10/11/21 07:30	10/13/21 12:32	1
PCB-1248	<0.0030		0.010	0.0030	ug/L		10/11/21 07:30	10/13/21 12:32	1
PCB-1254	<0.0046		0.010	0.0046	ug/L		10/11/21 07:30	10/13/21 12:32	1
PCB-1260	<0.0039		0.010	0.0039	ug/L		10/11/21 07:30	10/13/21 12:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*78*		*59 - 124*	*10/11/21 07:30*	*10/13/21 12:32*	*1*
DCB Decachlorobiphenyl (Surr)	*78*		*59 - 124*	*10/11/21 07:30*	*10/13/21 12:32*	*1*
Tetrachloro-m-xylene (Surr)	*75*		*41 - 118*	*10/11/21 07:30*	*10/13/21 12:32*	*1*
Tetrachloro-m-xylene (Surr)	*68*		*41 - 118*	*10/11/21 07:30*	*10/13/21 12:32*	*1*

Lab Sample ID: LCS 180-374754/6-A
Matrix: Water
Analysis Batch: 375005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374754

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016			1.00	0.730		ug/L		73	56 - 115		
PCB-1260			1.00	0.876		ug/L		88	52 - 112		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*91*		*59 - 124*
DCB Decachlorobiphenyl (Surr)	*88*		*59 - 124*
Tetrachloro-m-xylene (Surr)	*90*		*41 - 118*
Tetrachloro-m-xylene (Surr)	*83*		*41 - 118*

Lab Sample ID: LCSD 180-374754/7-A
Matrix: Water
Analysis Batch: 375005

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374754

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016			1.00	0.715		ug/L		72	56 - 115	2	23
PCB-1260			1.00	0.924		ug/L		92	52 - 112	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*96*		*59 - 124*
DCB Decachlorobiphenyl (Surr)	*92*		*59 - 124*
Tetrachloro-m-xylene (Surr)	*90*		*41 - 118*
Tetrachloro-m-xylene (Surr)	*83*		*41 - 118*

QC Association Summary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-128058-1

GC Semi VOA

Prep Batch: 374754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-128058-1	MH 1	Total/NA	Water	3510C	
180-128058-2	MH 2	Total/NA	Water	3510C	
180-128058-3	MH 3	Total/NA	Water	3510C	
180-128058-4	MH 4	Total/NA	Water	3510C	
180-128058-5	MH 5	Total/NA	Water	3510C	
180-128058-6	MH 14	Total/NA	Water	3510C	
180-128058-7	MH 15	Total/NA	Water	3510C	
MB 180-374754/1-A	Method Blank	Total/NA	Water	3510C	
LCS 180-374754/6-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 180-374754/7-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 375005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-128058-1	MH 1	Total/NA	Water	EPA 8082A	374754
180-128058-2	MH 2	Total/NA	Water	EPA 8082A	374754
180-128058-3	MH 3	Total/NA	Water	EPA 8082A	374754
180-128058-4	MH 4	Total/NA	Water	EPA 8082A	374754
180-128058-5	MH 5	Total/NA	Water	EPA 8082A	374754
180-128058-6	MH 14	Total/NA	Water	EPA 8082A	374754
180-128058-7	MH 15	Total/NA	Water	EPA 8082A	374754
MB 180-374754/1-A	Method Blank	Total/NA	Water	EPA 8082A	374754
LCS 180-374754/6-A	Lab Control Sample	Total/NA	Water	EPA 8082A	374754
LCSD 180-374754/7-A	Lab Control Sample Dup	Total/NA	Water	EPA 8082A	374754

CHAIN OF CUSTODY RECORD

Synergy
Environmental Lab, Inc.

www.synergy-lab.net
1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • mrsynergy@wi.twcbc.com

Chain # No 37132

Page 1 of 1

Sample Handling Request

____ Rush Analysis Date Required: ____
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #
QUOTE # :
Project #: 19270
Sampler: (signature)

Project (Name / Location): South Marina Drive Milwaukee, WI

Reports To: Mafizul Islam	Invoice To: Mike Ricker
Company The Sigma Group	Company Synergy Laboratory
Address 1300 West Canal Street	Address 1990 Prospect Court
City State Zip Milwaukee, WI 53233	City State Zip Appleton, WI 54914
Phone 414-643-4125	Phone 1-800-830-2455
Email Mislam@thesigmagroup.com	Email

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation
	MH 1	10/4/21	12:25	N	2	GW	None
	MH 2	10/4/21	12:05	N	2	GW	None
	MH 3	10/4/21	11:50	N	2	GW	None
	MH 4	10/4/21	11:35	N	2	GW	None
	MH 5	10/4/21	11:20	N	2	GW	None
	MH 14	10/4/21	10:50	N	2	GW	None
	MH 15	10/4/21	10:25	N	2	GW	None

Analysis Requested / **Other Analysis**

DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB (8082A Low Level)	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 524.2)	VOC (EPA 8260)	VOC AIR (TO - 15)	8-RCRA METALS	PID/ FID
						X									
						X									
						X									
						X									
						X									
						X									
						X									

180-128058 Chain of Custody

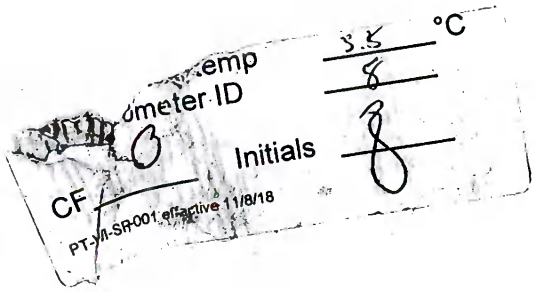
Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge, etc.)

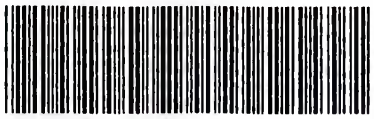
Send the report and invoice to: Synergy Laboratory

Sample Integrity - To be completed by receiving lab.
Method of Shipment: _____
Temp. of Temp. Blank: _____ °C On Ice: _____
Cooler seal intact upon receipt: ____ Yes ____ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	14:20	10/4/21	D Watson	10-5-21	
			FEDEX	15:00	

Received in Laboratory By: Time: Date: 10/14/2021





180-128058 Waybill

Login Sample Receipt Checklist

Client: Synergy Environmental Lab, Inc. Job Number: 180-128058-1

Login Number: 128058 **List Source: Eurofins TestAmerica, Pittsburgh**
List Number: 1
Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-136246-1
Laboratory SDG: South Marina Drive Storm Sewer
Client Project/Site: 19270

For:
Synergy Environmental Lab, Inc.
1990 Prospect Ct.
Appleton, Wisconsin 54914

Attn: Mike Ricker

Authorized for release by:
4/11/2022 8:02:20 AM

Andy Johnson, Manager of Project Management
(615)301-5045
Andy.Johnson@et.eurofinsus.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-136246-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative
180-136246-1

Comments
No additional comments.

Receipt
The samples were received on 4/6/2022 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.4º C.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 180-394606.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136246-1
SDG: South Marina Drive Storm Sewer

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Synergy Environmental Lab, Inc.
Job ID: 180-136246-1
Project/Site: 19270
SDG: South Marina Drive Storm Sewer

Laboratory: Eurofins Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998027800	08-31-22

Sample Summary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136246-1
SDG: South Marina Drive Storm Sewer

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-136246-1	MH-11	Water	04/04/22 17:54	04/06/22 09:00
180-136246-2	MH-12	Water	04/04/22 17:15	04/06/22 09:00
180-136246-3	MH-13	Water	04/04/22 16:34	04/06/22 09:00

Method Summary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136246-1
SDG: South Marina Drive Storm Sewer

Method	Method Description	Protocol	Laboratory
EPA 8082A	Polychlorinated Biphenyls (PCBs) (GC)	SW846	TAL PIT
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL PIT

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136246-1
SDG: South Marina Drive Storm Sewer

Client Sample ID: MH-11
Date Collected: 04/04/22 17:54
Date Received: 04/06/22 09:00

Lab Sample ID: 180-136246-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1050 mL	1.0 mL	394606	04/07/22 08:30	CBY	TAL PIT
Total/NA	Analysis	EPA 8082A		1			394653	04/08/22 19:25	JMO	TAL PIT
	Instrument ID: CHGC20									

Client Sample ID: MH-12
Date Collected: 04/04/22 17:15
Date Received: 04/06/22 09:00

Lab Sample ID: 180-136246-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1050 mL	1.0 mL	394606	04/07/22 08:30	CBY	TAL PIT
Total/NA	Analysis	EPA 8082A		1			394653	04/08/22 19:43	JMO	TAL PIT
	Instrument ID: CHGC20									

Client Sample ID: MH-13
Date Collected: 04/04/22 16:34
Date Received: 04/06/22 09:00

Lab Sample ID: 180-136246-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1050 mL	1.0 mL	394606	04/07/22 08:30	CBY	TAL PIT
Total/NA	Analysis	EPA 8082A		1			394653	04/08/22 20:02	JMO	TAL PIT
	Instrument ID: CHGC20									

Laboratory References:

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

CBY = Charles Yushinski

Batch Type: Analysis

JMO = John Oravec

Client Sample ID: MH-11

Date Collected: 04/04/22 17:54
Date Received: 04/06/22 09:00

Lab Sample ID: 180-136246-1

Matrix: Water

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0045		0.0095	0.0045	ug/L		04/07/22 08:30	04/08/22 19:25	1
PCB-1221	<0.0054		0.0095	0.0054	ug/L		04/07/22 08:30	04/08/22 19:25	1
PCB-1232	<0.0050		0.0095	0.0050	ug/L		04/07/22 08:30	04/08/22 19:25	1
PCB-1242	<0.0034		0.0095	0.0034	ug/L		04/07/22 08:30	04/08/22 19:25	1
PCB-1248	<0.0076		0.0095	0.0076	ug/L		04/07/22 08:30	04/08/22 19:25	1
PCB-1254	<0.0043		0.0095	0.0043	ug/L		04/07/22 08:30	04/08/22 19:25	1
PCB-1260	**0.11**		0.0095	0.0037	ug/L		04/07/22 08:30	04/08/22 19:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*73*		*48 - 129*	*04/07/22 08:30*	*04/08/22 19:25*	*1*
DCB Decachlorobiphenyl (Surr)	*77*		*48 - 129*	*04/07/22 08:30*	*04/08/22 19:25*	*1*
Tetrachloro-m-xylene (Surr)	*80*		*36 - 117*	*04/07/22 08:30*	*04/08/22 19:25*	*1*
Tetrachloro-m-xylene (Surr)	*71*		*36 - 117*	*04/07/22 08:30*	*04/08/22 19:25*	*1*

Client Sample ID: MH-12

Date Collected: 04/04/22 17:15
Date Received: 04/06/22 09:00

Lab Sample ID: 180-136246-2

Matrix: Water

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0045		0.0095	0.0045	ug/L		04/07/22 08:30	04/08/22 19:43	1
PCB-1221	<0.0054		0.0095	0.0054	ug/L		04/07/22 08:30	04/08/22 19:43	1
PCB-1232	<0.0050		0.0095	0.0050	ug/L		04/07/22 08:30	04/08/22 19:43	1
PCB-1242	<0.0034		0.0095	0.0034	ug/L		04/07/22 08:30	04/08/22 19:43	1
PCB-1248	<0.0076		0.0095	0.0076	ug/L		04/07/22 08:30	04/08/22 19:43	1
PCB-1254	<0.0043		0.0095	0.0043	ug/L		04/07/22 08:30	04/08/22 19:43	1
PCB-1260	**0.020**		0.0095	0.0037	ug/L		04/07/22 08:30	04/08/22 19:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*87*		*48 - 129*	*04/07/22 08:30*	*04/08/22 19:43*	*1*
DCB Decachlorobiphenyl (Surr)	*87*		*48 - 129*	*04/07/22 08:30*	*04/08/22 19:43*	*1*
Tetrachloro-m-xylene (Surr)	*94*		*36 - 117*	*04/07/22 08:30*	*04/08/22 19:43*	*1*
Tetrachloro-m-xylene (Surr)	*89*		*36 - 117*	*04/07/22 08:30*	*04/08/22 19:43*	*1*

Client Sample ID: MH-13

Date Collected: 04/04/22 16:34
Date Received: 04/06/22 09:00

Lab Sample ID: 180-136246-3

Matrix: Water

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0045		0.0095	0.0045	ug/L		04/07/22 08:30	04/08/22 20:02	1
PCB-1221	<0.0054		0.0095	0.0054	ug/L		04/07/22 08:30	04/08/22 20:02	1
PCB-1232	<0.0050		0.0095	0.0050	ug/L		04/07/22 08:30	04/08/22 20:02	1
PCB-1242	<0.0034		0.0095	0.0034	ug/L		04/07/22 08:30	04/08/22 20:02	1
PCB-1248	<0.0076		0.0095	0.0076	ug/L		04/07/22 08:30	04/08/22 20:02	1
PCB-1254	<0.0043		0.0095	0.0043	ug/L		04/07/22 08:30	04/08/22 20:02	1
PCB-1260	**0.0078**	**J**	0.0095	0.0037	ug/L		04/07/22 08:30	04/08/22 20:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*78*		*48 - 129*	*04/07/22 08:30*	*04/08/22 20:02*	*1*
DCB Decachlorobiphenyl (Surr)	*82*		*48 - 129*	*04/07/22 08:30*	*04/08/22 20:02*	*1*

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136246-1
SDG: South Marina Drive Storm Sewer

Client Sample ID: MH-13
Date Collected: 04/04/22 16:34
Date Received: 04/06/22 09:00

Lab Sample ID: 180-136246-3
Matrix: Water

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene (Surr)	84		36 - 117	04/07/22 08:30	04/08/22 20:02	1
Tetrachloro-m-xylene (Surr)	81		36 - 117	04/07/22 08:30	04/08/22 20:02	1

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 180-394606/1-A
Matrix: Water
Analysis Batch: 394653

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 394606

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0048		0.010	0.0048	ug/L		04/07/22 08:30	04/08/22 18:29	1
PCB-1221	<0.0057		0.010	0.0057	ug/L		04/07/22 08:30	04/08/22 18:29	1
PCB-1232	<0.0052		0.010	0.0052	ug/L		04/07/22 08:30	04/08/22 18:29	1
PCB-1242	<0.0036		0.010	0.0036	ug/L		04/07/22 08:30	04/08/22 18:29	1
PCB-1248	<0.0080		0.010	0.0080	ug/L		04/07/22 08:30	04/08/22 18:29	1
PCB-1254	<0.0046		0.010	0.0046	ug/L		04/07/22 08:30	04/08/22 18:29	1
PCB-1260	<0.0039		0.010	0.0039	ug/L		04/07/22 08:30	04/08/22 18:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*88*		*48 - 129*	*04/07/22 08:30*	*04/08/22 18:29*	*1*
DCB Decachlorobiphenyl (Surr)	*87*		*48 - 129*	*04/07/22 08:30*	*04/08/22 18:29*	*1*
Tetrachloro-m-xylene (Surr)	*93*		*36 - 117*	*04/07/22 08:30*	*04/08/22 18:29*	*1*
Tetrachloro-m-xylene (Surr)	*87*		*36 - 117*	*04/07/22 08:30*	*04/08/22 18:29*	*1*

Lab Sample ID: LCS 180-394606/4-A
Matrix: Water
Analysis Batch: 394653

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 394606

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			1.00	0.843		ug/L		84	36 - 113		
PCB-1260			1.00	1.03		ug/L		103	33 - 116		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*79*		*48 - 129*
DCB Decachlorobiphenyl (Surr)	*82*		*48 - 129*
Tetrachloro-m-xylene (Surr)	*74*		*36 - 117*
Tetrachloro-m-xylene (Surr)	*82*		*36 - 117*

Lab Sample ID: LCSD 180-394606/5-A
Matrix: Water
Analysis Batch: 394653

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 394606

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016			1.00	0.885		ug/L		89	36 - 113	5	35
PCB-1260			1.00	1.00		ug/L		100	33 - 116	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*80*		*48 - 129*
DCB Decachlorobiphenyl (Surr)	*79*		*48 - 129*
Tetrachloro-m-xylene (Surr)	*74*		*36 - 117*
Tetrachloro-m-xylene (Surr)	*83*		*36 - 117*

QC Association Summary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136246-1
SDG: South Marina Drive Storm Sewer

GC Semi VOA

Prep Batch: 394606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-136246-1	MH-11	Total/NA	Water	3510C	
180-136246-2	MH-12	Total/NA	Water	3510C	
180-136246-3	MH-13	Total/NA	Water	3510C	
MB 180-394606/1-A	Method Blank	Total/NA	Water	3510C	
LCS 180-394606/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 180-394606/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 394653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-136246-1	MH-11	Total/NA	Water	EPA 8082A	394606
180-136246-2	MH-12	Total/NA	Water	EPA 8082A	394606
180-136246-3	MH-13	Total/NA	Water	EPA 8082A	394606
MB 180-394606/1-A	Method Blank	Total/NA	Water	EPA 8082A	394606
LCS 180-394606/4-A	Lab Control Sample	Total/NA	Water	EPA 8082A	394606
LCSD 180-394606/5-A	Lab Control Sample Dup	Total/NA	Water	EPA 8082A	394606

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

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Client Information	Sampler: James Schmidt	Lab PM: Johnson, Andy	Carrier Tracking No(s): 517304456007	COC No: 180-80033-15218.1
Client Contact: Mike Ricker	Phone: (414) 643-4118	E-Mail: Andy.Johnson@Eurofinset.com	State of Origin: WI	Page: Page 1 of 1
Company: Synergy Environmental Lab, Inc.	PWSID:	Analysis Requested		Job #:
Address: 1990 Prospect Ct.	Due Date Requested:			
City: Appleton	TAT Requested (days): standard TAT			
State, Zip: WI, 54914	Compliance Project: Δ Yes Δ No			
Phone:	PO #: Purchase Order not required			
Email: mrsynergy@wi.twcbc.com	WO #:			
Project Name: PCB analysis	Project #: 18024567			
Site: 19270-South Marina Drive Storm Sewer	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Preservation Code	PCB (8082A_Low Level)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MH-11	4/4/22	17:54	G	W	N	N	N	X	2	
MH-12	4/4/22	17:15	G	W	N	N	N	X	2	
MH-13	4/4/22	16:34	G	W	N	N	N	X	2	

180-136246 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FedEx Express		
Relinquished by: James Schmidt	Date/Time: 4/5/22 1145	Company: Sigma	Received by:	Date/Time: 4/6/22 900	Company: ESTAP.IA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Synergy Environmental Lab, Inc.

Job Number: 180-136246-1
SDG Number: South Marina Drive Storm Sewer

Login Number: 136246
List Number: 1
Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-136494-1
Laboratory SDG: South Marina Drive Storm Sewer
Client Project/Site: 19270

For:
Synergy Environmental Lab, Inc.
1990 Prospect Ct.
Appleton, Wisconsin 54914

Attn: Mike Ricker

Authorized for release by:
4/15/2022 10:16:22 AM

Andy Johnson, Manager of Project Management
(615)301-5045
Andy.Johnson@et.eurofinsus.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Table of Contents

Case Narrative

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136494-1
SDG: South Marina Drive Storm Sewer

Job ID: 180-136494-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative
180-136494-1

Receipt
The sample was received on 4/9/2022 9:30 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.3°C

PCBs
Method 8082A_LL: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 180-394967.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Definitions/Glossary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136494-1
SDG: South Marina Drive Storm Sewer

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Synergy Environmental Lab, Inc.
Job ID: 180-136494-1
Project/Site: 19270
SDG: South Marina Drive Storm Sewer

Laboratory: Eurofins Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998027800	08-31-22

Sample Summary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136494-1
SDG: South Marina Drive Storm Sewer

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-136494-1	MH-16	Water	04/07/22 16:39	04/09/22 09:30

Method Summary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136494-1
SDG: South Marina Drive Storm Sewer

Method	Method Description	Protocol	Laboratory
EPA 8082A	Polychlorinated Biphenyls (PCBs) (GC)	SW846	TAL PIT
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL PIT

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136494-1
SDG: South Marina Drive Storm Sewer

Client Sample ID: MH-16
Date Collected: 04/07/22 16:39
Date Received: 04/09/22 09:30

Lab Sample ID: 180-136494-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			1050 mL	1.0 mL	394967	04/11/22 10:30	CBY	TAL PIT
Total/NA	Analysis	EPA 8082A		1			395226	04/13/22 13:24	JMO	TAL PIT
	Instrument ID: CHGC8									

Laboratory References:

TAL PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

CBY = Charles Yushinski

Batch Type: Analysis

JMO = John Oravec

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136494-1
SDG: South Marina Drive Storm Sewer

Client Sample ID: MH-16
Date Collected: 04/07/22 16:39
Date Received: 04/09/22 09:30

Lab Sample ID: 180-136494-1
Matrix: Water

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0045		0.0095	0.0045	ug/L		04/11/22 10:30	04/13/22 13:24	1
PCB-1221	<0.0054		0.0095	0.0054	ug/L		04/11/22 10:30	04/13/22 13:24	1
PCB-1232	<0.0050		0.0095	0.0050	ug/L		04/11/22 10:30	04/13/22 13:24	1
PCB-1242	<0.0034		0.0095	0.0034	ug/L		04/11/22 10:30	04/13/22 13:24	1
PCB-1248	<0.0076		0.0095	0.0076	ug/L		04/11/22 10:30	04/13/22 13:24	1
PCB-1254	<0.0043		0.0095	0.0043	ug/L		04/11/22 10:30	04/13/22 13:24	1
PCB-1260	**0.0078**	**J**	0.0095	0.0037	ug/L		04/11/22 10:30	04/13/22 13:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*85*		*48 - 129*	*04/11/22 10:30*	*04/13/22 13:24*	*1*
DCB Decachlorobiphenyl (Surr)	*91*		*48 - 129*	*04/11/22 10:30*	*04/13/22 13:24*	*1*
Tetrachloro-m-xylene (Surr)	*72*		*36 - 117*	*04/11/22 10:30*	*04/13/22 13:24*	*1*
Tetrachloro-m-xylene (Surr)	*72*		*36 - 117*	*04/11/22 10:30*	*04/13/22 13:24*	*1*

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 180-394967/1-A
Matrix: Water
Analysis Batch: 395226

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 394967

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0048		0.010	0.0048	ug/L		04/11/22 10:30	04/13/22 12:28	1
PCB-1221	<0.0057		0.010	0.0057	ug/L		04/11/22 10:30	04/13/22 12:28	1
PCB-1232	<0.0052		0.010	0.0052	ug/L		04/11/22 10:30	04/13/22 12:28	1
PCB-1242	<0.0036		0.010	0.0036	ug/L		04/11/22 10:30	04/13/22 12:28	1
PCB-1248	<0.0080		0.010	0.0080	ug/L		04/11/22 10:30	04/13/22 12:28	1
PCB-1254	<0.0046		0.010	0.0046	ug/L		04/11/22 10:30	04/13/22 12:28	1
PCB-1260	<0.0039		0.010	0.0039	ug/L		04/11/22 10:30	04/13/22 12:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*78*		*48 - 129*	*04/11/22 10:30*	*04/13/22 12:28*	*1*
DCB Decachlorobiphenyl (Surr)	*81*		*48 - 129*	*04/11/22 10:30*	*04/13/22 12:28*	*1*
Tetrachloro-m-xylene (Surr)	*79*		*36 - 117*	*04/11/22 10:30*	*04/13/22 12:28*	*1*
Tetrachloro-m-xylene (Surr)	*75*		*36 - 117*	*04/11/22 10:30*	*04/13/22 12:28*	*1*

Lab Sample ID: LCS 180-394967/4-A
Matrix: Water
Analysis Batch: 395226

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 394967

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			1.00	0.793		ug/L		79	36 - 113		
PCB-1260			1.00	0.925		ug/L		93	33 - 116		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*85*		*48 - 129*
DCB Decachlorobiphenyl (Surr)	*89*		*48 - 129*
Tetrachloro-m-xylene (Surr)	*66*		*36 - 117*
Tetrachloro-m-xylene (Surr)	*79*		*36 - 117*

Lab Sample ID: LCSD 180-394967/5-A
Matrix: Water
Analysis Batch: 395226

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 394967

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016			1.00	0.808		ug/L		81	36 - 113	2	35
PCB-1260			1.00	0.974		ug/L		97	33 - 116	5	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*86*		*48 - 129*
DCB Decachlorobiphenyl (Surr)	*94*		*48 - 129*
Tetrachloro-m-xylene (Surr)	*67*		*36 - 117*
Tetrachloro-m-xylene (Surr)	*81*		*36 - 117*

QC Association Summary

Client: Synergy Environmental Lab, Inc.
Project/Site: 19270

Job ID: 180-136494-1
SDG: South Marina Drive Storm Sewer

GC Semi VOA

Prep Batch: 394967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-136494-1	MH-16	Total/NA	Water	3510C	
MB 180-394967/1-A	Method Blank	Total/NA	Water	3510C	
LCS 180-394967/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 180-394967/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 395226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-136494-1	MH-16	Total/NA	Water	EPA 8082A	394967
MB 180-394967/1-A	Method Blank	Total/NA	Water	EPA 8082A	394967
LCS 180-394967/4-A	Lab Control Sample	Total/NA	Water	EPA 8082A	394967
LCSD 180-394967/5-A	Lab Control Sample Dup	Total/NA	Water	EPA 8082A	394967

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Phone (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: James Schmidt	Lab PM: Johnson, Andy	Carrier Tracking No(s): 5173 0445 5993	COC No: 180-80033-15218.1
Client Contact: Mike Ricker	Phone: (414) 643-4118	E-Mail: Andy.Johnson@Eurofinset.com	State of Origin: WI	Page: Page 1 of 1
Company: Synergy Environmental Lab, Inc.	PWSID:	Analysis Requested		Job #:
Address: 1990 Prospect Ct.	Due Date Requested:			Preservation Codes:
City: Appleton	TAT Requested (days): standard TAT			A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify); Other:
State, Zip: WI, 54914	Compliance Project: Δ Yes Δ No			
Phone:	PO #: Purchase Order not required			
Email: mrsynergy@wi.twcbc.com	WO #:			
Project Name: PCB analysis	Project #: 18024567			
Site: 19270-South Martha Dr. Storm Sewer	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Preservation Code:	PCB (8082A - Low Level)	Total Number of containers	Special Instructions/Note:
MH-16	4/7/22	16:39	G	W	N	N	N	X	2	

180-136494 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	James Schmidt	4/8/22 10:05	Sigma	[illegible]	4-9-22	[illegible]
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9:30	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Eurofins Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Phone (412) 963-2468

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: James Schmidt	Lab PM: Johnson, Andy	Carrier Tracking No(s): 5173 0445 5993	COC No: 180-80033-15218.1
Client Contact: Mike Ricker	Phone: (414) 643-4118	E-Mail: Andy.Johnson@Eurofinset.com	State of Origin: WI	Page: Page 1 of 1
Company: Synergy Environmental Lab, Inc.	PWSID:	Analysis Requested		Job #:
Address: 1990 Prospect Ct.	Due Date Requested:			Preservation Codes:
City: Appleton	TAT Requested (days): standard TAT			A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify); Other:
State, Zip: WI, 54914	Compliance Project: Δ Yes Δ No			
Phone:	PO #: Purchase Order not required			
Email: mrsynergy@wi.twcbc.com	WO #:			
Project Name: PCB analysis	Project #: 18024567			
Site: 19270-South Martha Dr. Storm Sewer	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Preservation Code: PCB (8082A - Low Level)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MH-16	4/7/22	16:39	G	W	N	N	N X	2	

180-136494 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	James Schmidt	4/8/22 10:05	Sigma	[illegible]	4-9-22	[illegible]
2					9:30	
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Synergy Environmental Lab, Inc.

Job Number: 180-136494-1
SDG Number: South Marina Drive Storm Sewer

Login Number: 136494
List Number: 1
Creator: Watson, Debbie

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ATTACHMENT 6

SEWER BACKFILL SOIL LAB REPORTS

Synergy Environmental Lab, INC

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

MAFIZUL ISLAM
THE SIGMA GROUP, INC.
1300 W. CANAL STREET
MILWAUKEE. WI 53233

Report Date *13-Oct-21*

Project Name SOUTH MARINA DRIVE **Invoice #** E39970
Project # 19270

Lab Code 5039970A
Sample ID MH-4-BF
Sample Matrix Soil
Sample Date 9/20/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	84.8	%			1	5021		9/22/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1221	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1232	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1242	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1248	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1
PCB-1254	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1
PCB-1260	0.027	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1

Project Name SOUTH MARINA DRIVE **Invoice #** E39970
Project # 19270

Lab Code 5039970B
Sample ID MH-3-BF
Sample Matrix Soil
Sample Date 9/20/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	79.1	%			1	5021		9/22/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1221	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1232	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1242	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1248	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1
PCB-1254	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1
PCB-1260	0.012 "J"	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1

Lab Code 5039970C
Sample ID MH-2-BF
Sample Matrix Soil
Sample Date 9/20/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	84.4	%			1	5021		9/22/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1221	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1232	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1242	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1248	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1
PCB-1254	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1
PCB-1260	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1

Project Name SOUTH MARINA DRIVE **Invoice #** E39970
Project # 19270

Lab Code 5039970D
Sample ID MH-1-BF
Sample Matrix Soil
Sample Date 9/20/2021

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	79.7	%			1	5021		9/22/2021	NJC	1
Organic										
PCB'S										
PCB-1016	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1221	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1232	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1242	< 0.0118	mg/kg	0.0118	0.0394	1	EPA 8082A		10/13/2021	ESC	1
PCB-1248	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1
PCB-1254	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1
PCB-1260	< 0.0074	mg/kg	0.0074	0.0246	1	EPA 8082A		10/13/2021	ESC	1

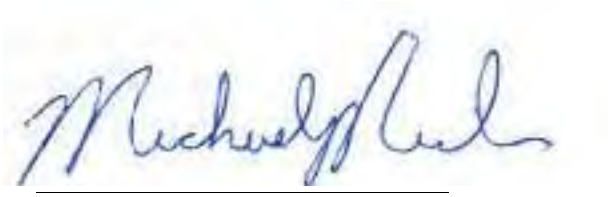
"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.

ESC denotes sub contract lab - Certification #998093910

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature



CHAIN OF CUSTODY RECORD

Synergy Environmental Lab, Inc.

www.synergy-lab.net
1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • mrsynergy@wi.twcbc.com

Chain # 43651
Page 1 of 1

Sample Handling Request
___ Rush Analysis Date Required: ___
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #
QUOTE #: ~~STL~~ C.O.M.
Project #: 19270
Sampler: (signature) James Schmidt
Project (Name / Location): South Marina Dr Sewer / S. Marina Dr, Milwaukee, WI

Reports To:	James Schmidt	Invoice To:	Mafizul Islam
Company	The Sigma Group, Inc	Company	T
Address	1300 W Canal St	Address	SAME
City State Zip	Milwaukee, WI 53233	City State Zip	↓
Phone	(414) 643-4118	Phone	414-643-4175
Email	jschmidt@thesigmagrp.com	Email	mislam@thesigmagrp.com

Analysis Requested / **Other Analysis**

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 524.2)	VOC (EPA 8260)	VOC AIR (TO - 15)	8-RCRA METALS	PID/ FID
503997 A	MH-4-BF	9/20/21	10:54	N	1	SOIL	none							X									0.2
B	MH-3-BF	↓	11:01	↓	1	↓	↓							X									0.0
C	MH-2-BF		12:30		1									X									0.0
D	MH-1-BF		13:15		1									X									0.0

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge, etc.)

Sample Integrity - To be completed by receiving lab.
Method of Shipment: CS
Temp. of Temp. Blank: ___ °C On Ice: X
Cooler seal intact upon receipt: X Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
James Schmidt	~~15:30~~ 11:25	9/21/21			

Received in Laboratory By: [signature] Time: 8:00 Date: 9/22/21