Sturgeon Bay
Federal Navigation Channel
Sediment Sampling and Analysis Report
Door County, Wisconsin

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U.S. Army Corps of Engineers
Detroit District
477 Michigan Avenue
Detroit, MI 48226

Prepared By:

RTI Laboratories, Inc.
31628 Glendale Street
Livonia, Michigan 48150-1827
Telephone: 734-422-8000
Fax: 734-422-5342
www.rtilab.com

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1.0 INTRODUCTION

The U.S. Army Corps of Engineers, Detroit District (USACE) retained RTI Laboratories, Inc. (RTI) as a contractor to perform sediment sampling services within the Federal Navigation channel of the Sturgeon River in Sturgeon Bay, Wisconsin (Site) in response to and in accordance with the Detroit District's Request for Proposal (RFP) and Statement of Work (SOW) received on 08 May 2015. This project is part of an assessment of sediment quality within the navigation channel of the site. This project involves collection of sediment samples from shoaling within the Navigation Channel of the River. This information will be used by the District and its clients to select the proper sediment dredging practices as well as monitor any potential migration of contaminants. RTI provided sediment sampling services using a Macro-core sampling device using a push type coring device mounted on a pontoon boat at this Site.

The scope of the work was to sample predetermined locations within the navigation channels along the Site as shown in Figure 3. The sampling crew (RTI team) mobilized on 08 June 2015 to begin work at the site on that afternoon. After preparing all equipment for the day, the team launched and began sampling at location SB-15-12, in the mid-section of the channel due to the wind. The RTI team consisted of three (3) people: Craig Reidner and Willy Lake from Coleman Engineering, and Fred Hoitash from RTI. Sixteen samples were to be collected from the navigation channel at twelve stations of the Site over two days.

Sampling, sample handling, and analytical procedures were conducted in accordance with the Scope of Work (SOW) and specifications of the current USACE Contract W912P4-12-D-0002 Delivery Order DC08, in addition to "Methods for Evaluating Solid Waste", 3rd ED, U.S. EPA No. SW-846, DoD Quality Systems Manual v4.2/5.0, and "Description of Soils (Visual-Manual Procedure)", ASTM D 2488-69.

A total of sixteen (16) discreet sediment samples were collected from twelve (12) stations during the event. All samples were collected within the designated navigation channel from locations identified in the maps supplied by the District and included in Appendix A. Final sample locations are provided in Appendix A, showing the actual sample locations.

This report provides documentation of the field survey and describes the field activities that occurred, the samples collected, and the conditions encountered during the survey. This report also includes the overview maps, proposed and final sample locations in **Appendix A**. **Appendix B** – Table 1 presents the sediment chemistry analysis for the sediment samples collected. Table 2 presents the sediment grain size analysis for the sediment samples.

RTI Team maintained a field logbook for this project. A typed copy of the field logbook form and the compiled notes are included as **Appendix C**. The compiled boring logs are presented in **Appendix D**. Photographs of the samples and activities are included in **Appendix E.**

Appendix F contains the RTI and Level 2 QC Analytical Report, with chain-of-custody forms. The Grain size reports for the sediments are also included in this appendix.

All related bench notebooks and data are retained for this Delivery Order. The raw analytical data, electronic bench sheets and narratives, electronic data deliverables (EDD), a complete data package with associated quality control data and quality assurance summary, along with the detailed review of the data are presented as a supplement to this report on a separate CD.

2.0 SITE DESCRIPTION

The Federal Navigation Channel for the Sturgeon Bay, relevant to this SOW is located in Door County, WI. The station locations span from about the Mid-section of the Bay, just East of the WI-57 Bridge, west to the moth of the shipping channel in Lake Michigan. There is little natural current in the Bay and channel. The current is mostly derived from the wind direction. The River is used for recreational, commercial and freighter traffic.

3.0 SAMPLE COLLECTION – SEDIMENT SAMPLES

The field survey and sampling activities were conducted according to the SOW for the Site, as prepared, refined and modified based on discussions with the USACE Detroit District Project officer, Ms. Pam Horner.

3.1 Survey Preparation

The SOW developed by the USACE required sediment sampling at twelve (12) locations along the navigation channel of the site. The locations were identified on the maps in **Appendix A** within the navigation channel of the Site. RTI proposed that these 12 stations producing 16 sediment samples would be collected over two days The samples were to be collected from the locations described in **Appendix A**, Figure 3. In order to organize the sampling effort and prepare the sample containers, RTI developed a sampling plan based on the SOW and the sampling crew had preplanned the supply of containers and sampling supplies. Due to the nature of the samples, the plan called for samples to be stored on ice and delivered to the laboratory following the completion of the collection effort.

The sampling plan summarized the channel dredge depth elevation, estimated amount of sediment required for analysis; sampling equipment, sample locations, analysis parameters, containers required, sampling preservation requirements, chain-of-custody, health and safety plans, and delivery of the samples. All samples were handled as composite samples from each core except for stations SB-15-07, 08, 10 and 11. These core were split into two samples. The top sample is the required core per the SOW to one foot below project depth. The second fraction of the core is the portion below the project depth. This information is detailed in the Appendix C and D. All samples were photographed, documented, well mixed, decanted and placed into sample containers immediately after the sample was retrieved.

Proposed analytical parameters for the harbor sediment samples included the Physical kit (including grain size analysis (sieve analysis w/o hydrometer), Metals kit, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), Chlorinated Pesticides, Nutrients kit

and Organic Indicators. Summary tables for these samples are provided in **Appendix B**. The DoD QSM based Level 2 (QA Level) reports for the sediment data are presented in **Appendix F**.

RTI Team mobilized on Monday 08 June 2015 with all equipment and materials required for collecting and processing sediment samples, collected using macro-core sampling equipment, from the Site. The team began the collection event on the afternoon of 08 June 2015. All of the supplies were transported to the site for the event's activities. At the end of the day the samples were iced or re-iced in the coolers until the conclusion of the sampling event and delivery to the laboratory at the end of the event. Samples from 12 stations were collected over the two days of sampling.

3.2 Field Documentation

Field conditions, activities, and field data were documented in a field logbook. Information recorded in the logbook includes:

- Station identification number, using a unique prefix for each site.
- Sample collection date and names of the sampling team
- Depth at each sampling location
- Depth of each core retrieved
- A description, measurement and identification of the material of each core retrieved according to ASTM D 2488-69, "Description of Soils (Visual Manual Procedure)"
- Types of sampling equipment used
- Latitude and Longitude of station locations
- Time of sample collection
- Identification number of the sample photographs

Prior to collecting sediment samples, sample coordinates were determined from the maps supplied by the USACE. The proposed Latitude and Longitudes were manually entered into a Global Positioning System (GPS) unit to locate each proposed sampling site. The water depth was measured by using a depth finder, calibrated by a second measuring device and recorded the nearest one tenth foot increment. Proposed sample locations at the Sites were relocated if no

shoaling was apparent, as presented in previous sections. Reference water level data (in feet) were obtained from the NOAA/NOS Web site to correct for subsurface levels. The nearest NOAA water level reference station for the Site was the Sturgeon Bay Canal, WI station at the East end of the Canal at the opening into Lake Michigan (9087072).

Digital, color photographs **(Appendix E)** were taken of some activities and all sediment samples prior to and after mixing them, to indicate color, texture and homogeneity of the sediment.

3.3 Weather/Climatic Conditions

The climatic conditions are presented in the summary table below for the days of sampling. The first day had strong storms move through the area just prior to meeting at the launch site. The winds had escalated and the sky began to clear throughout the evening. For the second day the morning winds were calm and the canal entrance to Lake Michigan was completely engulfed in a dense fog. The water turbidity level was low to moderate and current slow in the canal and bay.

The following chart illustrates the climatic conditions during the events:

Date	Avg/Max Temp (F)	Wind Speed, mph (gusts)	Wind Direction
06/08/2015	64/71	6-24(36)	W to NW
06/09/2015	63/71	6-15(17)	W to E

The Low Water Datum (LWD) for the Sturgeon Bay Canal Station is listed as 577.5 feet from the International Great Lakes Datum 1985 (IGLD 1985). The corrected sediment elevation is presented on the typed field logs for each site **(Appendix C)**.

Data obtained from National Ocean-Atmosphere Administration's (NOAA) website stated:

- Station 9087072, Sturgeon Bay Canal, WI recorded that water levels fluctuated between 579.47 and 579.97 feet during the days of sampling. Specific six minute interval observances were obtained for the individual sample times to correct for the fluctuating water levels.

3.4 Sample Locations

Prior to launching, the team reviewed the sample locations and maps supplied by the District Project Officer. Once underway the depth sounder was calibrated using a fixed metal rod. Sampling activity was initiated by navigating to the coordinates of the predetermined sample locations. Once the sampling vessel was located at each site, time, depth, and GPS information was recorded. There were some proposed locations that were relocated due to shoaling that had shifted.

3.5 Sample Collection

The navigation channel samples were collected on 08-09 June 2015 using a pontoon boat with a macro-core sampling. The samples were collected from the boat with all the sampling equipment, locating anchors/spuds, and sample compositing materials on board. Samples were processed on the boat and equipment cleaned as the pilot moved the boat to the next location. Once the samples were mixed and placed into bottles, all measurements, documentation and photographs were recorded. Once it was determined that all of the sample and field information was complete, excess sample was dumped and the sampling and mixing equipment was cleaned and made ready for the next sample.

3.5.1 Sampling Procedures

Samples were collected using Gravity core and Ponar sampling equipment. For this Site, the push-rig samples were collected by advancing the macro-core sampling unit using 5 foot rods to reach the surface of the sediment. The macro-core sampler is them pushed through the sediment to obtain the correct core length. Before lifting the Macro-core unit, a check valve is placed at the top of the Macro-core unit. The rods are removed and the Macro-core unit is opened, to remove the Lexan liner. The liner is cut and the material documented and processed. The samples were all processed by extracting the sample from the core tube, dewatering, documenting and mixing prior to putting the sample into sample containers.

All samples were some combination of gravel, sand and silt. Some samples had clay or clay mixtures in them. Some of the cores were primarily organic material with some silt and fine sand All of this information is recorded in the logs presented in **Appendix C**.

Sampling equipment was decontaminated after each sample by using a phosphate free surfactant, followed by a river water rinse. The decontamination procedure included scrubbing and rinsing sampling equipment with site water and using new gloves for each sample location.

3.5.2 Field Logbook

The field forms and the logbook were filled out completely, recording each sample before leaving each sample location. The NOAA reference water levels were confirmed upon return to the field office. The typed field form and logs are included in **Appendix C**. Compiled boring logs are also presented in **Appendix D**.

3.5.3 Photographic Log

Digital color photographs were taken of the core and aggregate samples as needed for documentation. The photographs were made to best document the core or sample based on the ambient lighting. The photographs and captions are included in **Appendix E**.

3.5.4 Sample Containers and Sample Preservation

All samples were collected and stored in laboratory supplied HDPE or glass containers with tight fitting closures. All sample containers were cooled using ice stored in zip-lock bags to less than 6°C, and stored in darkness, except transiently during handling operations. Chain-of-custody was maintained during sampling activities. Based upon the proposed analysis parameters, none of the sediment samples required additional chemical or physical preservation other than ice. Sediment samples were kept on ice and delivered to RTI laboratories at the conclusion of the

sampling event. The sediment samples were processed by the laboratory the following morning after receipt.

3.5.5 Sample Custody

Chain-of-custody over samples was maintained at all times. These documents are part of the laboratory reports presented in **Appendix F**. Procedures for sample packaging, shipping, and chain-of-custody followed the guidelines as listed in the U.S Army Corps of Engineers Sample Handling Protocol for Low, Medium and High Concentration Samples of Hazardous Waste, dated October 1986. Samples for this project were considered to be low level samples environmental samples for safety, packaging and shipping purposes.

Sample containers were carefully packed to prevent breakage. The samples were placed in sturdy leak-proof coolers with ice stored in zip-lock bags. Each signed chain-of-custody was stored in a zip-lock bag and place inside each cooler.

4.0 SEDIMENT ANALYTICAL RESULTS

The sediment samples were delivered under chain-of-custody to RTI Laboratories in Livonia, Michigan at the end of the sampling event. RTI analyzed the sediment samples for Physical kit (including grain size analysis (sieve analysis w/o hydrometer), Metals kit, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), Nutrients kit and Organic Indicators. All chemical and physical analytical testing was completed at RTI laboratories, a DoD and Wisconsin certified Laboratory. The analytical results are summarized in Tables 1 and 2 in **Appendix B** for the chemical and physical analytical results of the river sediment samples. The detailed laboratory analytical report and chain-of-custody documentation for all these tests are included in **Appendix F**. A complete DoD QSM Level 4 CLP like data and QA report is included on a separate CD.

4.1 Quality Assurance / Quality Control

Data quality refers to the level of uncertainty associated with a particular data point. All of the elements of the sampling event, from the sampling design through the laboratory analysis and reporting, affect the quality of the data. Data quality associated with environmental measurement is a function of the sampling plan rationale and procedures used to collect and homogenize the samples, as well as, the analytical methods and instrumentation used in procuring the measurements. Uncertainty cannot be eliminated from environmental data. However, quality assurance programs effective in measuring uncertainty in data are employed to monitor and control deviations from the desired data quality objectives.

Sources of uncertainty that can be traced to the sampling component include poor sampling plan design, incorrect sample handling, faulty sample transportation, and inconsistent use of standard operating procedures. The most common sources of uncertainty that can be traced to the analytical component of the total measurement system are problems associated with calibration, non-target matrix interference and external contamination.

Laboratory terms concerning quality control include:

- BLK – Method Blank (prepared with batch of samples)
- ICV - Initial calibration verification standard
- CCV - Continuing calibration verification (ongoing calibration standard)
- CCB - Continuing calibration blank (ongoing blank verification)
- LCS – Laboratory Control Sample (prepared with batch of samples)
- LCSD – Laboratory Control Sample Duplicate (prepared with batch of samples)
- MS – Matrix Spike (only applies to the spiked sample and its parent)
- MSD – Matrix Spike Duplicate (only applies to the spiked sample and its parent)
- % R - % Recovery (a measure of accuracy or known recovery)
- RPD – Relative Percent Difference (a measure of precision between samples)

For a spiked QC sample (LCS, LCSD, MS, and MSD), the sample or blank material is spiked with a known concentration prior to extraction. This is a test of accuracy based on the recovery of the known spike concentration. The percent recovery equals the amount of the spiked concentration detected divided by the amount added or spiked. If any of the analyte added or spiked in the QC samples is found in the unspiked sample, that concentration is taken into account. The Relative Percent Difference (RPD) is used as a measure of precision between two similar samples. This is usually determined as the relative percent difference between the MS and the MSD or LCS and LCSD. The RPD is the absolute value of the difference between the two measurements, divided by the average of the two measurements, reported in percent. The precision and accuracy of the LCS/LCSD pair is more critical to the batch quality. Anomalies to QC acceptance criteria of the MS/MSD pair are most likely indicators of matrix or chemical interferences of the samples.

Quality is assured by the laboratory setting control limits for the Accuracy and Precision data generated. Any concerns or data that is not compliant based on the guidelines of the DoD QSM version 4.2 will be narrated in the final Level 4 data package.

4.2 Data Qualifiers

A case narrative is presented as part of the entire laboratory report, and is summarized below. The detailed laboratory Quality Control Results are documented on the QC Summary Report for each of the RTI workorders presented in **Appendix F**.

- There were no critical data qualifiers for the report of the sediment samples. Critical qualifiers are ones that would make the data unacceptable by standards outlined in the DOD QSM v5.0, which is based on the NELAC standards.
- A few of the samples for Pesticides and PAHs had exceedances for one or two compounds in the CCV or ending CCV. These compounds are listed in the case narrative.
- Some compounds for metals analysis failed either recovery limits. These compounds are listed in the case narrative.

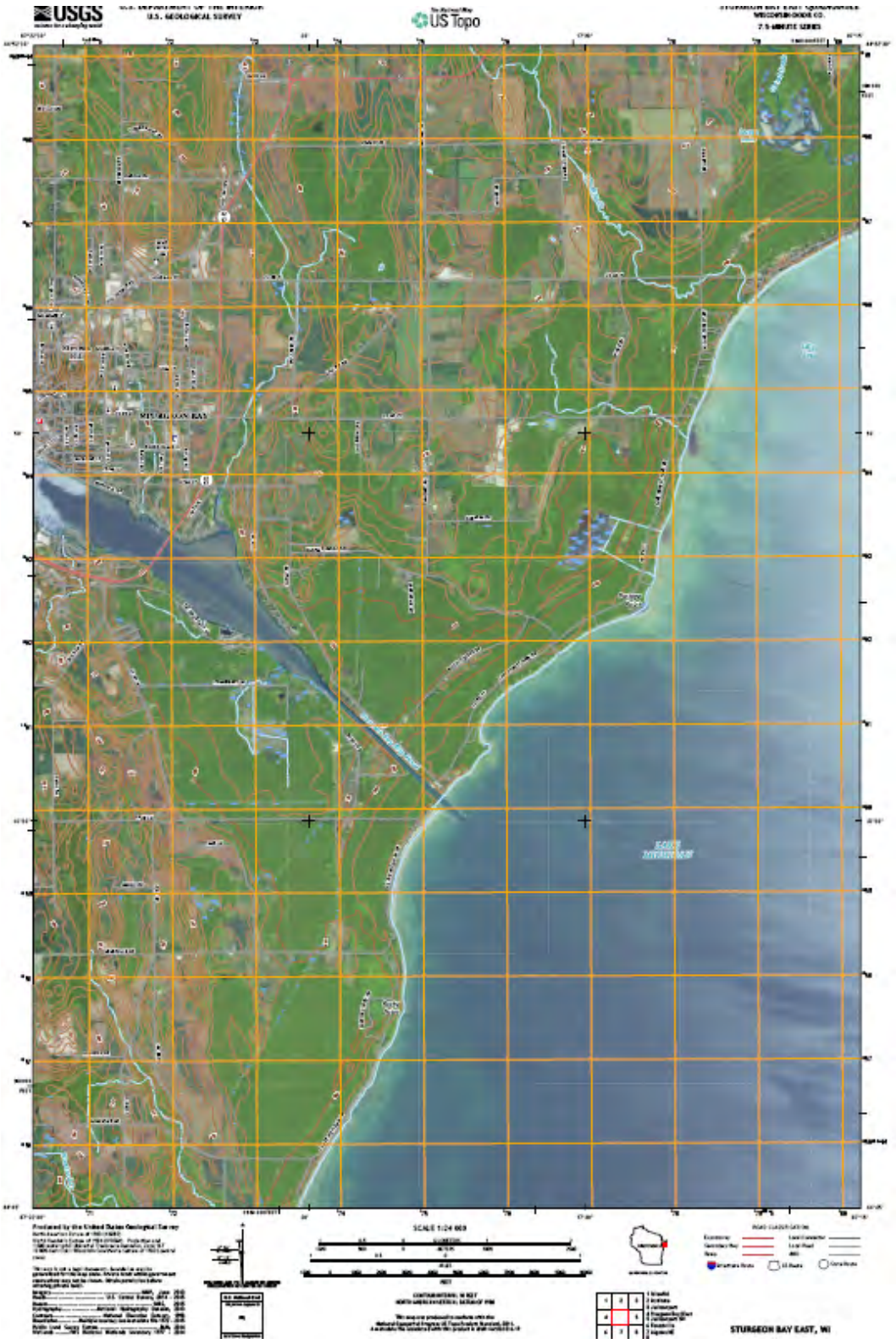
4.3 Quality Assurance/Quality Control Review

RTI performed a QA review regarding the laboratory QC data and the reports. These Case Narratives are documented in **Appendix F** and the QSM level 4 QA report.

In summary, the data and QC are all within acceptable criteria for this report and there are no potential indicators that negatively affected any of the data for this Delivery Order.

Appendix A

Figure 1, Sturgeon Bay, WI Topographical Map

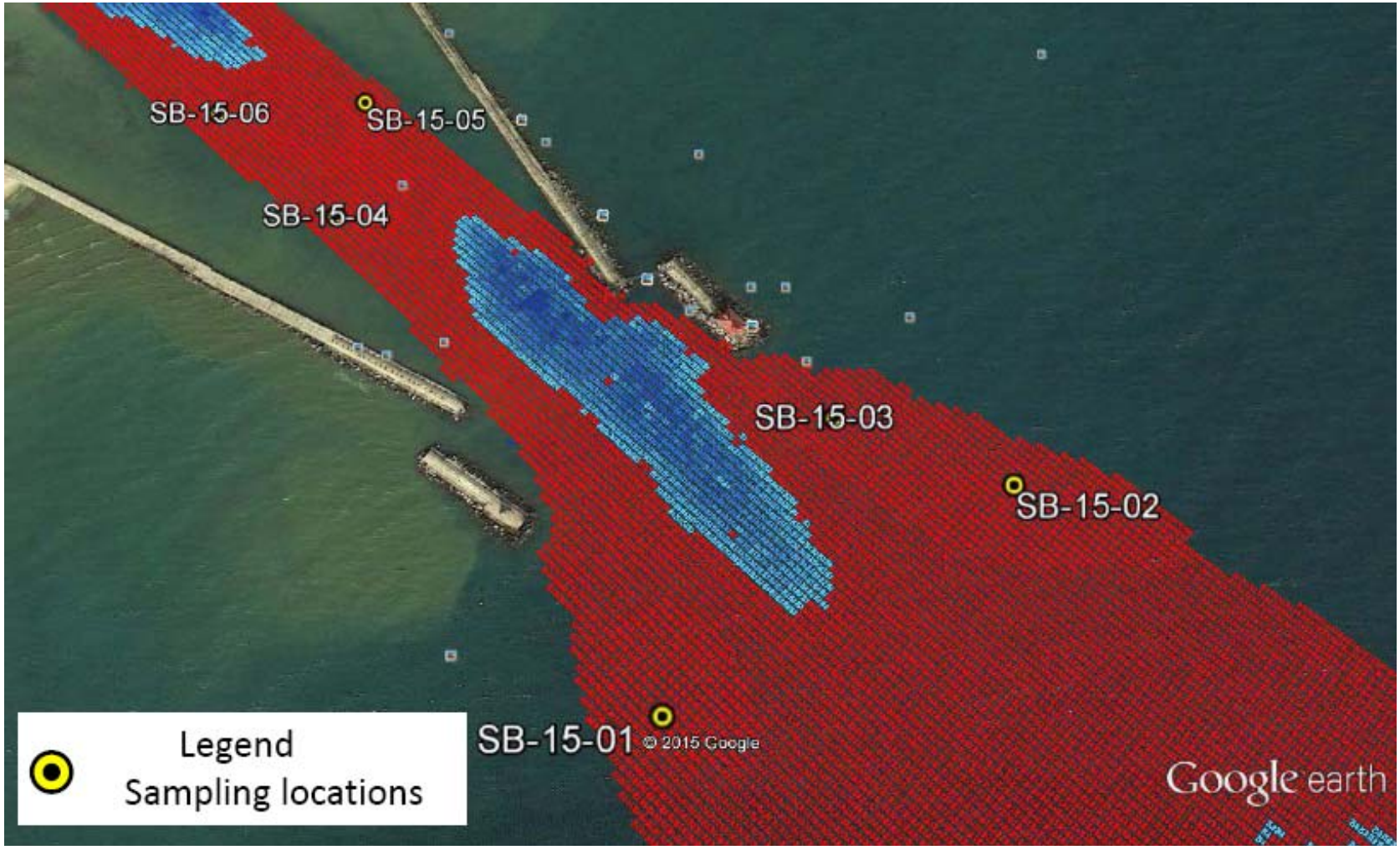


Appendix A

Figure 2 Aerial Photo Sturgeon Bay, Door County, WI

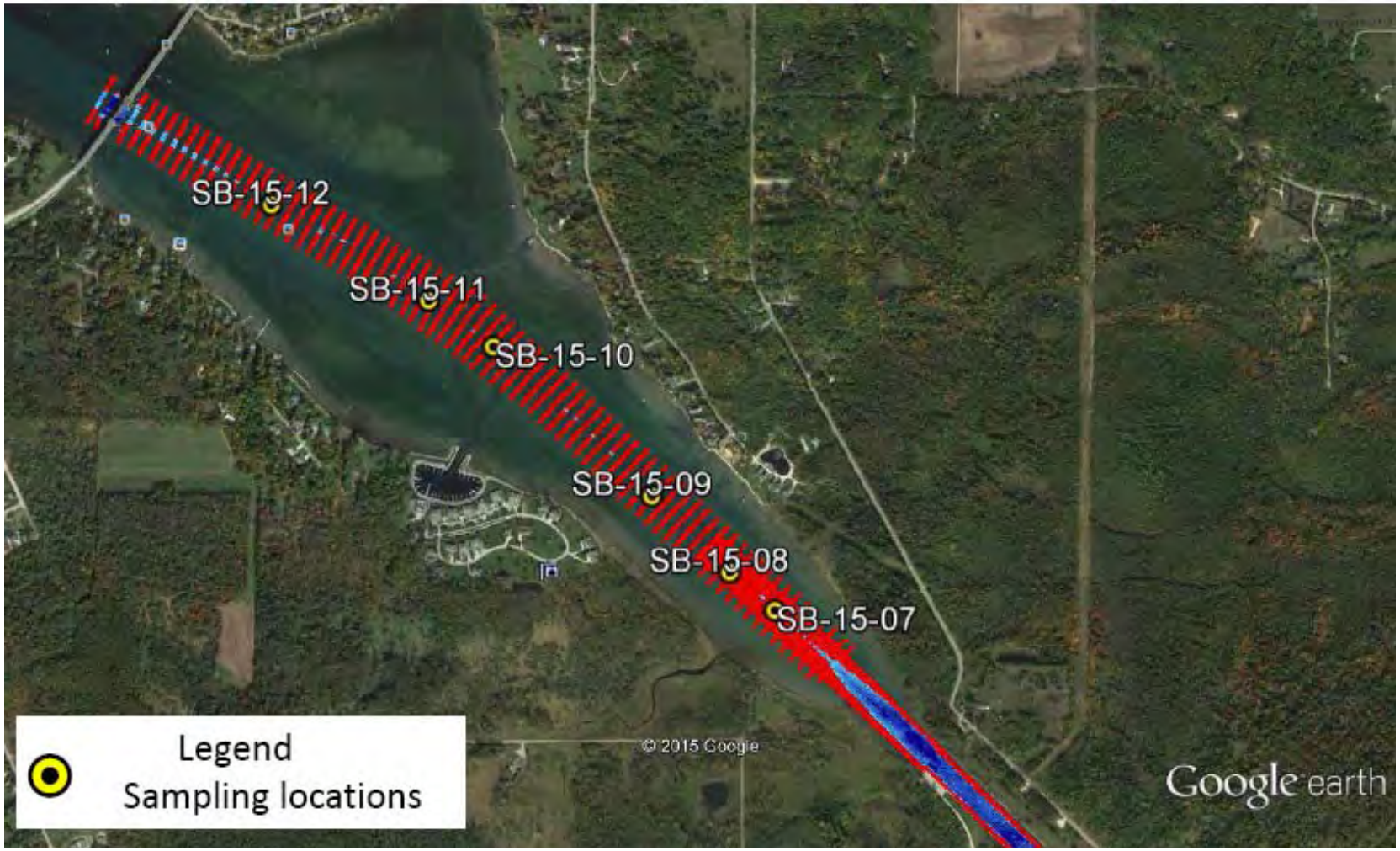
Appendix A

Figure 3a: Sturgeon Bay, Proposed Station Locations



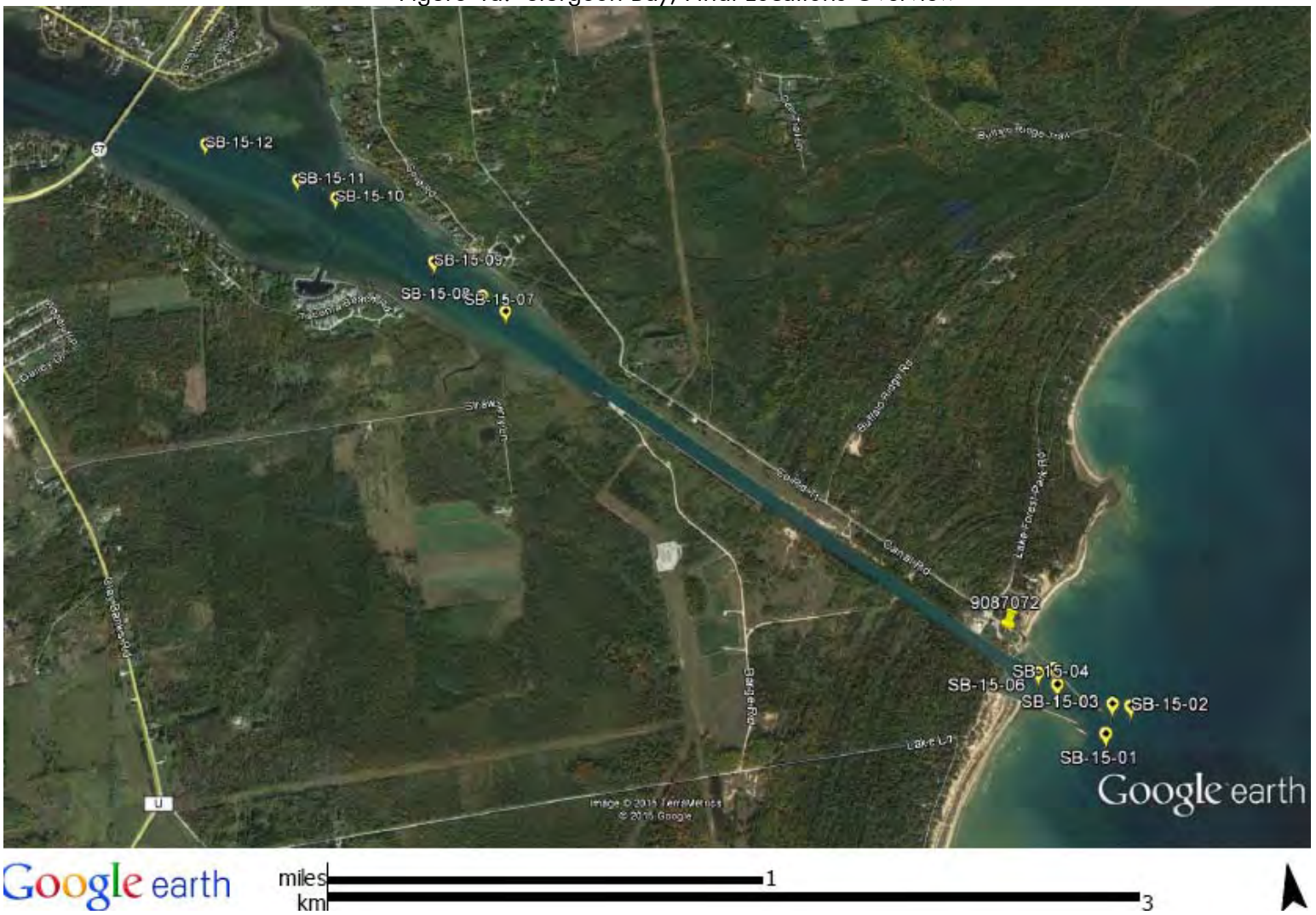
Appendix A

Figure 3b: Sturgeon Bay, Proposed Station Locations



Appendix A

Figure 4a: Sturgeon Bay, Final Locations Overview



Appendix A

Figure 4b: Sturgeon Bay, Final Locations SB-15-01 through 06

Appendix A

Figure 4c: Sturgeon Bay, Final Locations SB-15-07 through 12

TABLE 1: STURGEON BAY SEDIMENT ANALYTICAL RESULTS

Parameter	Sample ID		SB-15-01	SB-15-02	SB-15-03	SB-15-04	SB-15-05	SB-15-06
	Lab ID		1506418-001	1506418-002	1506418-003	1506418-004	1506418-005	1506418-006
	Date Collected		6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015
Physical Kit	**Method**	**Units**						
Density	ASTM D854	lbs/gal	**20.7**	**20.4**	**23.6**	**17.8**	**22.4**	**20.4**
Specific Density	ASTM D854	20°C	**2.48**	**2.45**	**2.84**	**2.14**	**2.69**	**2.45**
% Moisture	ASTM D2216	% by Wt.	**26**	**31**	**24**	**35**	**31**	**41**
% Solids	ASTM D2216	% by Wt.	**74**	**69**	**76**	**65**	**69**	**59**
Nutrients Kit	**Method**	**Units**						
Phosphorus, total	SM 4500 P-F	mg/Kg dry	**140**	**200**	**82**	**230**	**140**	**320**
Nitrogen, Ammonia	EPA 350.1	mg/Kg dry	**120**	**250**	**39**	**460**	**50**	**940**
Nitrogen, Kjeldahl, total	EPA 351.2	mg/Kg dry	**470**	**550**	**180**	**1,400**	**400**	**2,500**
Organic Indicators Kit	**Method**	**Units**						
Oil & Grease, total	SW 9071	mg/Kg dry	140	120	79	**400**	150	**370**
Cyanide, total	SW 9012	mg/Kg dry	<0.89	<0.96	<0.87	<1.0	<0.96	<1.1
Chemical Oxygen Demand	EPA 410.4	mg/Kg dry	**3,800**	**9,700**	**1,400**	**20,000**	**6,900**	**27,000**
Total Volatile Solids	SM 2540 G	% by Wt	**1.1**	**1.7**	**0.91**	**2.4**	**1.4**	**3.8**
Total Organic Carbon	SW 9060	mg/Kg dry	**24,000**	**36,000**	**23,000**	**19,000**	**30,000**	**33,000**
PCBs	**Method**	**Units**						
Aroclor-1016	SW 8082	µg/kg dry	<2.6	<2.8	<2.6	<3.1	<2.9	<3.3
Aroclor-1221	SW 8082	µg/kg dry	<2.6	<2.8	<2.6	<3.1	<2.9	<3.3
Aroclor-1232	SW 8082	µg/kg dry	<2.6	<2.8	<2.6	<3.1	<2.9	<3.3
Aroclor-1242	SW 8082	µg/kg dry	<2.6	<2.8	<2.6	<3.1	<2.9	<3.3
Aroclor-1248	SW 8082	µg/kg dry	<2.6	<2.8	<2.6	<3.1	<2.9	<3.3
Aroclor-1254	SW 8082	µg/kg dry	<2.6	<2.8	<2.6	<3.1	<2.9	<3.3
Aroclor-1260	SW 8082	µg/kg dry	<2.6	<2.8	<2.6	<3.1	<2.9	<3.3
Aroclor-1262	SW 8082	µg/kg dry	<2.6	<2.8	<2.6	<3.1	<2.9	<3.3
Total PCBs	SW 8082	µg/kg dry	<2.6	<2.8	<2.6	<3.1	<2.9	<3.3
Organochlorine Pesticides	**Method**	**Units**						
4,4'-DDD	SW8081	µg/kg dry	<2.4	<2.5	<2.3	<2.8	<2.6	<3.0
4,4'-DDE	SW8081	µg/kg dry	<1.5	<1.5	<1.4	<1.7	<1.6	<1.8
4,4'-DDT	SW8081	µg/kg dry	<1.6	<1.7	<1.6	<1.8	<1.7	<2.0
Aldrin	SW8081	µg/kg dry	<1.5	<1.5	<1.4	<1.7	<1.6	<1.8

Non-detected results = "<" Limit of Quantitation
results with "J" qualifier reported as estimated number
Bold type = results above LOQ

TABLE 1: STURGEON BAY SEDIMENT ANALYTICAL RESULTS

Parameter	Sample ID		SB-15-01	SB-15-02	SB-15-03	SB-15-04	SB-15-05	SB-15-06
	Lab ID		1506418-001	1506418-002	1506418-003	1506418-004	1506418-005	1506418-006
	Date Collected		6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015
alpha-BHC	SW8081	µg/kg dry	<1.3	<1.4	<1.3	<1.5	<1.4	<1.7
alpha-Chlordane	SW8081	µg/kg dry	<1.6	<1.7	<1.6	<1.8	<1.7	<2.0
beta-BHC	SW8081	µg/kg dry	<1.6	<1.7	<1.6	<1.8	<1.7	<2.0
Chlordane (Technical)	SW8081	µg/kg dry	<15	<16	<15	<18	<17	<19
delta-BHC	SW8081	µg/kg dry	<1.3	<1.4	<1.3	<1.5	<1.4	<1.7
Dieldrin	SW8081	µg/kg dry	<1.6	<1.7	<1.6	<1.8	<1.7	<2.0
Endosulfan I	SW8081	µg/kg dry	<1.7	<1.8	<1.7	<2.0	<1.9	<2.1
Endosulfan II	SW8081	µg/kg dry	<1.6	<1.7	<1.6	<1.8	<1.7	<2.0
Endosulfan sulfate	SW8081	µg/kg dry	<1.7	<1.8	<1.7	<2.0	<1.9	<2.1
Endrin	SW8081	µg/kg dry	<1.7	<1.8	<1.7	<2.0	<1.9	<2.1
Endrin aldehyde	SW8081	µg/kg dry	<1.7	<1.8	<1.7	<2.0	<1.9	<2.1
Endrin ketone	SW8081	µg/kg dry	<1.6	<1.7	<1.6	<1.8	<1.7	<2.0
gamma-BHC	SW8081	µg/kg dry	<1.3	<1.4	<1.3	<1.5	<1.4	<1.7
gamma-Chlordane	SW8081	µg/kg dry	<1.6	<1.7	<1.6	<1.8	<1.7	<2.0
Heptachlor	SW8081	µg/kg dry	<1.6	<1.7	<1.6	<1.8	<1.7	<2.0
Heptachlor epoxide	SW8081	µg/kg dry	<1.6	<1.7	<1.6	<1.8	<1.7	<2.0
Methoxychlor	SW8081	µg/kg dry	<1.7	<1.8	<1.7	<2.0	<1.9	<2.1
Toxaphene	SW8081	µg/kg dry	<22	<23	<22	<26	<24	<28
Metals Kit	Method	Units						
Arsenic	SW 6010	µg/kg dry	<2,100	950	1,200	1,600	1,300	2,100
Barium	SW 6010	µg/kg dry	**7,700**	**11,000**	5,200	**9,800**	**15,000**	**17,000**
Cadmium	SW 6010	µg/kg dry	68	**160**	66	150	**150**	**190**
Chromium	SW 6010	µg/kg dry	**4,200**	**5,500**	**3,700**	**3,600**	**4,400**	**5,800**
Copper	SW 6010	µg/kg dry	1,700	**2,900**	<2,600	1,800	**2,200**	**3,500**
Iron	SW 6010	µg/kg dry	**3,800,000**	**4,500,000**	**4,000,000**	**3,100,000**	**3,800,000**	**4,700,000**
Lead	SW 6010	µg/kg dry	1,700	2,800	<5,000	<4,400	2,200	2,100
Manganese	SW 6010	µg/kg dry	**86,000**	**130,000**	**91,000**	**89,000**	**91,000**	**150,000**
Mercury	SW 7471A	µg/kg dry	11	**15**	**9.9**	**13**	**27**	**15**
Nickel	SW 6010	µg/kg dry	**2,900**	**3,800**	2,300	2,700	**3,400**	**4,700**
Selenium	SW 6010	µg/kg dry	<1,900	<1,900	<1,700	<2,300	<2,000	<2,400
Silver	SW 6010	µg/kg dry	<620	610	<770	<680	<600	<660

Non-detected results = "<" Limit of Quantitation
results with "J" qualifier reported as estimated number
Bold type = results above LOQ

TABLE 1: STURGEON BAY SEDIMENT ANALYTICAL RESULTS

Parameter	Sample ID		SB-15-01	SB-15-02	SB-15-03	SB-15-04	SB-15-05	SB-15-06
	Lab ID		1506418-001	1506418-002	1506418-003	1506418-004	1506418-005	1506418-006
	Date Collected		6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015
Zinc	SW 6010	µg/kg dry	<1,800	**1,700**	<2,200	<1,900	<1,700	1,300
Semi-Volatile Organic Compounds/PAH	Method	Units						
2-Methylnaphthalene	SW 8270	µg/kg dry	<13	<14	<13	<15	<14	<16
Acenaphthene	SW 8270	µg/kg dry	<13	<14	<12	<15	<14	<16
Acenaphthylene	SW 8270	µg/kg dry	<16	<17	<16	<18	<17	<20
Anthracene	SW 8270	µg/kg dry	<11	<11	<10	<12	11	<13
Benzo(a)anthracene	SW 8270	µg/kg dry	7.5	7.7	<20	8.7	**23**	9.9
Benzo(a)pyrene	SW 8270	µg/kg dry	8.9	10	<24	11	21	12
Benzo(b)fluoranthene	SW 8270	µg/kg dry	<29	<32	<29	<34	21	<36
Benzo(g,h,i)perylene	SW 8270	µg/kg dry	<19	<20	<18	<22	<20	<23
Benzo(k)fluoranthene	SW 8270	µg/kg dry	<23	<24	<22	<26	8.6	<28
Chrysene	SW 8270	µg/kg dry	<13	<14	<13	<15	**18**	6.0
Dibenzo (a,h) anthracene	SW 8270	µg/kg dry	<29	<32	<29	<34	<31	<36
Fluoranthene	SW 8270	µg/kg dry	8.4	11	<18	10	**44**	14
Fluorene	SW 8270	µg/kg dry	<24	<26	<24	<28	<26	<30
Indeno(1,2,3-cd)pyrene	SW 8270	µg/kg dry	<25	<27	<25	<29	10	<31
Naphthalene	SW 8270	µg/kg dry	<15	<16	<14	<17	<16	<18
Phenanthrene	SW 8270	µg/kg dry	<31	<33	<30	<35	29	<38
Pyrene	SW 8270	µg/kg dry	<23	8.1	<22	<26	**30**	9.9

Non-detected results = "<" Limit of Quantitation
results with "J" qualifier reported as estimated number
Bold type = results above LOQ

TABLE 1: STURGEON BAY SEDIMENT ANALYTICAL RESULTS

Parameter	Sample ID		SB-15-07	SB-15-07 BPD	SB-15-08	SB-15-08 BPD	SB-15-09	SB-15-10
	Lab ID		1506418-007	1506418-013	1506418-008	1506418-014	1506418-009	1506418-010
	Date Collected		6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015
Physical Kit	**Method**	**Units**						
Density	ASTM D854	lbs/gal	**23.7**	**27.7**	**19.3**	**21.4**	**21.6**	**15.2**
Specific Density	ASTM D854	20°C	**2.85**	**3.32**	**2.31**	**2.57**	**2.59**	**1.83**
% Moisture	ASTM D2216	% by Wt.	**44**	**36**	**50**	**36**	**52**	**54**
% Solids	ASTM D2216	% by Wt.	**56**	**64**	**50**	**64**	**48**	**46**
Nutrients Kit	**Method**	**Units**						
Phosphorus, total	SM 4500 P-F	mg/Kg dry	**270**	**140**	**370**	**170**	**260**	**310**
Nitrogen, Ammonia	EPA 350.1	mg/Kg dry	**460**	**220**	**660**	**380**	**290**	**310**
Nitrogen, Kjeldahl, total	EPA 351.2	mg/Kg dry	**2,000**	**1,000**	**2,100**	**1,300**	**2,200**	**2,100**
Organic Indicators Kit	**Method**	**Units**						
Oil & Grease, total	SW 9071	mg/Kg dry	**330**	78	**360**	130	190	**260**
Cyanide, total	SW 9012	mg/Kg dry	<1.2	<1.0	<1.3	<1.0	<1.4	<1.4
Chemical Oxygen Demand	EPA 410.4	mg/Kg dry	**27,000**	**24,000**	**28,000**	**20,000**	**38,000**	**19,000**
Total Volatile Solids	SM 2540 G	% by Wt	**3.1**	**2.9**	**3.8**	**3.4**	**4.5**	**8.5**
Total Organic Carbon	SW 9060	mg/Kg dry	**39,000**	**47,000**	**46,000**	**46,000**	**53,000**	**60,000**
PCBs	**Method**	**Units**						
Aroclor-1016	SW 8082	µg/kg dry	<3.5	<3.1	<3.9	<3.1	<4.1	<4.2
Aroclor-1221	SW 8082	µg/kg dry	<3.5	<3.1	<3.9	<3.1	<4.1	<4.2
Aroclor-1232	SW 8082	µg/kg dry	<3.5	<3.1	<3.9	<3.1	<4.1	<4.2
Aroclor-1242	SW 8082	µg/kg dry	<3.5	<3.1	<3.9	<3.1	<4.1	<4.2
Aroclor-1248	SW 8082	µg/kg dry	<3.5	<3.1	<3.9	<3.1	<4.1	<4.2
Aroclor-1254	SW 8082	µg/kg dry	<3.5	<3.1	<3.9	<3.1	<4.1	<4.2
Aroclor-1260	SW 8082	µg/kg dry	<3.5	<3.1	<3.9	<3.1	<4.1	<4.2
Aroclor-1262	SW 8082	µg/kg dry	<3.5	<3.1	<3.9	<3.1	<4.1	<4.2
Total PCBs	SW 8082	µg/kg dry	<3.5	<3.1	<3.9	<3.1	<4.1	<4.2
Organochlorine Pesticides	**Method**	**Units**						
4,4'-DDD	SW8081	µg/kg dry	<3.2	<2.8	<3.5	<2.8	<3.7	<3.8
4,4'-DDE	SW8081	µg/kg dry	<1.9	<1.7	<2.1	<1.7	<2.2	<2.3
4,4'-DDT	SW8081	µg/kg dry	<2.1	<1.9	<2.3	<1.8	<2.4	<2.5
Aldrin	SW8081	µg/kg dry	<1.9	<1.7	<2.1	<1.7	<2.2	<2.3

Non-detected results = "<" Limit of Quantitation
results with "J" qualifier reported as estimated number
Bold type = results above LOQ

TABLE 1: STURGEON BAY SEDIMENT ANALYTICAL RESULTS

Parameter	Sample ID		SB-15-07	SB-15-07 BPD	SB-15-08	SB-15-08 BPD	SB-15-09	SB-15-10
	Lab ID		1506418-007	1506418-013	1506418-008	1506418-014	1506418-009	1506418-010
	Date Collected		6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015
alpha-BHC	SW8081	µg/kg dry	<1.8	<1.5	<1.9	<1.5	<2.0	<2.1
alpha-Chlordane	SW8081	µg/kg dry	<2.1	<1.9	<2.3	<1.8	<2.4	<2.5
beta-BHC	SW8081	µg/kg dry	<2.1	<1.9	<2.3	<1.8	<2.4	<2.5
Chlordane (Technical)	SW8081	µg/kg dry	<21	<18	<23	<18	<24	<24
delta-BHC	SW8081	µg/kg dry	<1.8	<1.5	<1.9	<1.5	<2.0	<2.1
Dieldrin	SW8081	µg/kg dry	<2.1	<1.9	<2.3	<1.8	<2.4	<2.5
Endosulfan I	SW8081	µg/kg dry	<2.3	<2.0	<2.5	<2.0	<2.7	<2.7
Endosulfan II	SW8081	µg/kg dry	<2.1	<1.9	<2.3	<1.8	<2.4	<2.5
Endosulfan sulfate	SW8081	µg/kg dry	<2.3	<2.0	<2.5	<2.0	<2.7	<2.7
Endrin	SW8081	µg/kg dry	<2.3	<2.0	<2.5	<2.0	<2.7	<2.7
Endrin aldehyde	SW8081	µg/kg dry	<2.3	<2.0	<2.5	<2.0	<2.7	<2.7
Endrin ketone	SW8081	µg/kg dry	<2.1	<1.9	<2.3	<1.8	<2.4	<2.5
gamma-BHC	SW8081	µg/kg dry	<1.8	<1.5	<1.9	<1.5	<2.0	<2.1
gamma-Chlordane	SW8081	µg/kg dry	<2.1	<1.9	<2.3	<1.8	<2.4	<2.5
Heptachlor	SW8081	µg/kg dry	<2.1	<1.9	<2.3	<1.8	<2.4	<2.5
Heptachlor epoxide	SW8081	µg/kg dry	<2.1	<1.9	<2.3	<1.8	<2.4	<2.5
Methoxychlor	SW8081	µg/kg dry	<2.3	<2.0	<2.5	<2.0	<2.7	<2.7
Toxaphene	SW8081	µg/kg dry	<30	<26	<32	<26	<34	<35
Metals Kit	Method	Units						
Arsenic	SW 6010	µg/kg dry	1,500	1,900	1,900	**2,200**	<3,700	2,900
Barium	SW 6010	µg/kg dry	**15,000**	**22,000**	**19,000**	**22,000**	**27,000**	**28,000**
Cadmium	SW 6010	µg/kg dry	**220**	**400**	**280**	**490**	**580**	**500**
Chromium	SW 6010	µg/kg dry	**7,200**	**8,300**	**8,200**	**8,700**	**11,000**	**12,000**
Copper	SW 6010	µg/kg dry	**4,000**	**6,500**	**4,400**	**7,100**	**8,000**	**9,200**
Iron	SW 6010	µg/kg dry	**4,800,000**	**6,200,000**	**5,600,000**	**6,200,000**	**6,800,000**	**7,300,000**
Lead	SW 6010	µg/kg dry	**5,000**	**7,300**	5,700	**9,400**	**10,000**	**11,000**
Manganese	SW 6010	µg/kg dry	**120,000**	**160,000**	**150,000**	**160,000**	**190,000**	**200,000**
Mercury	SW 7471A	µg/kg dry	**33**	**69**	**36**	**110**	**110**	**100**
Nickel	SW 6010	µg/kg dry	**5,200**	**6,800**	**6,100**	**7,500**	**8,300**	**8,800**
Selenium	SW 6010	µg/kg dry	<2,600	<2,000	<2,900	820	<3,000	<2,900
Silver	SW 6010	µg/kg dry	<730	<690	<1,200	<590	<1,100	<1,300

Non-detected results = "<" Limit of Quantitation
results with "J" qualifier reported as estimated number
Bold type = results above LOQ

TABLE 1: STURGEON BAY SEDIMENT ANALYTICAL RESULTS

Parameter	Sample ID		SB-15-07	SB-15-07 BPD	SB-15-08	SB-15-08 BPD	SB-15-09	SB-15-10
	Lab ID		1506418-007	1506418-013	1506418-008	1506418-014	1506418-009	1506418-010
	Date Collected		6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015
Zinc	SW 6010	µg/kg dry	**2,700**	**6,300**	**4,700**	**13,000**	**16,000**	**16,000**
Semi-Volatile Organic Compounds/PAH	Method	Units						
2-Methylnaphthalene	SW 8270	µg/kg dry	<17	4.6	<19	4.6	10	6.3
Acenaphthene	SW 8270	µg/kg dry	<17	6.7	<19	4.6	<19	<20
Acenaphthylene	SW 8270	µg/kg dry	<21	<19	<23	<18	<25	<25
Anthracene	SW 8270	µg/kg dry	6.5	**22**	<16	9.7	12	12
Benzo(a)anthracene	SW 8270	µg/kg dry	22	**38**	23	**37**	**36**	**42**
Benzo(a)pyrene	SW 8270	µg/kg dry	24	**40**	26	**40**	**42**	**49**
Benzo(b)fluoranthene	SW 8270	µg/kg dry	26	57	29	**63**	**55**	**83**
Benzo(g,h,i)perylene	SW 8270	µg/kg dry	8.9	13	8.4	14	15	18
Benzo(k)fluoranthene	SW 8270	µg/kg dry	<30	19	12	13	18	22
Chrysene	SW 8270	µg/kg dry	**22**	**41**	**23**	**42**	**40**	**54**
Dibenzo (a,h) anthracene	SW 8270	µg/kg dry	<39	<34	<43	<34	<45	<47
Fluoranthene	SW 8270	µg/kg dry	**46**	**130**	**69**	**75**	**100**	**110**
Fluorene	SW 8270	µg/kg dry	<32	10	<35	<28	<37	<38
Indeno(1,2,3-cd)pyrene	SW 8270	µg/kg dry	12	17	15	16	21	23
Naphthalene	SW 8270	µg/kg dry	<20	5.2	<21	<17	6.8	<23
Phenanthrene	SW 8270	µg/kg dry	27	**77**	24	**43**	**62**	**49**
Pyrene	SW 8270	µg/kg dry	**33**	**95**	**56**	**59**	**79**	**86**

Non-detected results = "<" Limit of Quantitation
results with "J" qualifier reported as estimated number
Bold type = results above LOQ

TABLE 1: STURGEON BAY SEDIMENT ANALYTICAL RESULTS

Parameter	Sample ID		SB-15-10 BPD	SB-15-11	SB-15-11 BPD	SB-15-12
	Lab ID		1506418-015	1506418-011	1506418-016	1506418-012
	Date Collected		6/9/2015	6/8/2015	6/8/2015	6/8/2015
Physical Kit	**Method**	**Units**				
Density	ASTM D854	lbs/gal	**24.5**	**15.2**	**17.5**	**18.6**
Specific Density	ASTM D854	20°C	**2.94**	**1.82**	**2.10**	**2.24**
% Moisture	ASTM D2216	% by Wt.	**22**	**56**	**43**	**58**
% Solids	ASTM D2216	% by Wt.	**78**	**44**	**57**	**42**
Nutrients Kit	**Method**	**Units**				
Phosphorus, total	SM 4500 P-F	mg/Kg dry	**130**	**210**	**34**	**270**
Nitrogen, Ammonia	EPA 350.1	mg/Kg dry	**51**	**150**	**61**	**200**
Nitrogen, Kjeldahl, total	EPA 351.2	mg/Kg dry	**290**	**2,100**	**1,400**	**2,200**
Organic Indicators Kit	**Method**	**Units**				
Oil & Grease, total	SW 9071	mg/Kg dry	<210	260	130	140
Cyanide, total	SW 9012	mg/Kg dry	<0.85	<1.5	<1.2	<1.6
Chemical Oxygen Demand	EPA 410.4	mg/Kg dry	**5,100**	**50,000**	**10,000**	**20,000**
Total Volatile Solids	SM 2540 G	% by Wt	**1.3**	**5.5**	**4.7**	**5.2**
Total Organic Carbon	SW 9060	mg/Kg dry	**43,000**	**59,000**	**34,000**	**51,000**
PCBs	**Method**	**Units**				
Aroclor-1016	SW 8082	µg/kg dry	<2.5	<4.5	<3.4	<4.7
Aroclor-1221	SW 8082	µg/kg dry	<2.5	<4.5	<3.4	<4.7
Aroclor-1232	SW 8082	µg/kg dry	<2.5	<4.5	<3.4	<4.7
Aroclor-1242	SW 8082	µg/kg dry	<2.5	<4.5	<3.4	<4.7
Aroclor-1248	SW 8082	µg/kg dry	<2.5	<4.5	<3.4	<4.7
Aroclor-1254	SW 8082	µg/kg dry	<2.5	<4.5	<3.4	<4.7
Aroclor-1260	SW 8082	µg/kg dry	<2.5	<4.5	<3.4	<4.7
Aroclor-1262	SW 8082	µg/kg dry	<2.5	<4.5	<3.4	<4.7
Total PCBs	SW 8082	µg/kg dry	<2.5	<4.5	<3.4	<4.7
Organochlorine Pesticides	**Method**	**Units**				
4,4'-DDD	SW8081	µg/kg dry	<2.3	<4.1	<3.1	<4.2
4,4'-DDE	SW8081	µg/kg dry	<1.4	<2.5	<1.9	<2.6
4,4'-DDT	SW8081	µg/kg dry	<1.5	<2.7	<2.0	<2.8
Aldrin	SW8081	µg/kg dry	<1.4	<2.5	<1.9	<2.6

Non-detected results = "<" Limit of Quantitation
results with "J" qualifier reported as estimated number
Bold type = results above LOQ

TABLE 1: STURGEON BAY SEDIMENT ANALYTICAL RESULTS

Parameter	Sample ID		SB-15-10 BPD	SB-15-11	SB-15-11 BPD	SB-15-12
	Lab ID		1506418-015	1506418-011	1506418-016	1506418-012
	Date Collected		6/9/2015	6/8/2015	6/8/2015	6/8/2015
alpha-BHC	SW8081	µg/kg dry	<1.3	<2.3	<1.7	<2.3
alpha-Chlordane	SW8081	µg/kg dry	<1.5	<2.7	<2.0	<2.8
beta-BHC	SW8081	µg/kg dry	<1.5	<2.7	<2.0	<2.8
Chlordane (Technical)	SW8081	µg/kg dry	<15	<26	<20	<27
delta-BHC	SW8081	µg/kg dry	<1.3	<2.3	<1.7	<2.3
Dieldrin	SW8081	µg/kg dry	<1.5	<2.7	<2.0	<2.8
Endosulfan I	SW8081	µg/kg dry	<1.6	<2.9	<2.2	<3.0
Endosulfan II	SW8081	µg/kg dry	<1.5	<2.7	<2.0	<2.8
Endosulfan sulfate	SW8081	µg/kg dry	<1.6	<2.9	<2.2	<3.0
Endrin	SW8081	µg/kg dry	<1.6	<2.9	<2.2	<3.0
Endrin aldehyde	SW8081	µg/kg dry	<1.6	<2.9	<2.2	<3.0
Endrin ketone	SW8081	µg/kg dry	<1.5	<2.7	<2.0	<2.8
gamma-BHC	SW8081	µg/kg dry	<1.3	<2.3	<1.7	<2.3
gamma-Chlordane	SW8081	µg/kg dry	<1.5	<2.7	<2.0	<2.8
Heptachlor	SW8081	µg/kg dry	<1.5	<2.7	<2.0	<2.8
Heptachlor epoxide	SW8081	µg/kg dry	<1.5	<2.7	<2.0	<2.8
Methoxychlor	SW8081	µg/kg dry	<1.6	<2.9	<2.2	<3.0
Toxaphene	SW8081	µg/kg dry	<21	<38	<28	<39
Metals Kit	Method	Units				
Arsenic	SW 6010	µg/kg dry	1,100	2,700	<14,000	<3,800
Barium	SW 6010	µg/kg dry	**18,000**	**30,000**	**60,000**	**33,000**
Cadmium	SW 6010	µg/kg dry	<85	**470**	<680	**600**
Chromium	SW 6010	µg/kg dry	**7,900**	**10,000**	**4,500**	**14,000**
Copper	SW 6010	µg/kg dry	**6,600**	**9,200**	<14,000	**12,000**
Iron	SW 6010	µg/kg dry	**8,600,000**	**7,300,000**	**3,600,000**	**8,600,000**
Lead	SW 6010	µg/kg dry	2,300	**8,300**	<27,000	**13,000**
Manganese	SW 6010	µg/kg dry	**170,000**	**170,000**	**180,000**	**200,000**
Mercury	SW 7471A	µg/kg dry	**35**	**120**	**30**	**140**
Nickel	SW 6010	µg/kg dry	**7,900**	**8,900**	5,400	**11,000**
Selenium	SW 6010	µg/kg dry	<1,900	<3,200	<2,600	<3,200
Silver	SW 6010	µg/kg dry	<510	<910	<4,100	<1,100

Non-detected results = "<" Limit of Quantitation
results with "J" qualifier reported as estimated number
Bold type = results above LOQ

TABLE 1: STURGEON BAY SEDIMENT ANALYTICAL RESULTS

Parameter	Sample ID		SB-15-10 BPD	SB-15-11	SB-15-11 BPD	SB-15-12
	Lab ID		1506418-015	1506418-011	1506418-016	1506418-012
	Date Collected		6/9/2015	6/8/2015	6/8/2015	6/8/2015
Zinc	SW 6010	µg/kg dry	<1,400	**12,000**	<12,000	**23,000**
Semi-Volatile Organic Compounds/PAH	Method	Units				
2-Methylnaphthalene	SW 8270	µg/kg dry	<12	<22	<17	<23
Acenaphthene	SW 8270	µg/kg dry	<12	<21	<16	<22
Acenaphthylene	SW 8270	µg/kg dry	<15	<27	<21	<28
Anthracene	SW 8270	µg/kg dry	<10	<13	<14	9.2
Benzo(a)anthracene	SW 8270	µg/kg dry	<19	**50**	<26	34
Benzo(a)pyrene	SW 8270	µg/kg dry	<23	**55**	<31	40
Benzo(b)fluoranthene	SW 8270	µg/kg dry	<28	**79**	<38	**57**
Benzo(g,h,i)perylene	SW 8270	µg/kg dry	<18	19	<24	15
Benzo(k)fluoranthene	SW 8270	µg/kg dry	<22	25	<29	18
Chrysene	SW 8270	µg/kg dry	<13	**56**	<17	**41**
Dibenzo (a,h) anthracene	SW 8270	µg/kg dry	<28	<49	<38	<51
Fluoranthene	SW 8270	µg/kg dry	<18	**120**	<24	**94**
Fluorene	SW 8270	µg/kg dry	<23	<40	<31	<41
Indeno(1,2,3-cd)pyrene	SW 8270	µg/kg dry	<24	24	<33	20
Naphthalene	SW 8270	µg/kg dry	<14	7.4	<19	<25
Phenanthrene	SW 8270	µg/kg dry	<29	**55**	<40	47
Pyrene	SW 8270	µg/kg dry	<22	**90**	<29	**74**

Non-detected results = "<" Limit of Quantitation
results with "J" qualifier reported as estimated number
Bold type = results above LOQ

TABLE 2: STURGEON BAY GSA ANALYTICAL RESULTS

Parameter	Sample ID		SB-15-01	SB-15-02	SB-15-03	SB-15-04	SB-15-05	SB-15-06	SB-15-07
	Lab ID		1506418-001	1506418-002	1506418-003	1506418-004	1506418-005	1506418-006	1506418-007
	Date Collected		6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015
	Latitude, ° ' N		44° 47.438′	44° 47.484′	44° 47.494′	44° 47.549′	44° 47.582′	44° 47.578′	44° 48.549′
	Longitude, ° ' W		087° 18.590′	087° 18.498′	087° 18.549′	087° 18.693′	087° 18.692′	087° 18.740′	087° 20.148′
	Method								
Percent Moisture, wt%	ASTM D2216		26	31	24	35	31	41	44
Grain Size Analysis	Method								
% Coarse Gravel	ASTM D422		0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Fine Gravel	ASTM D422		0.4	0.2	0.4	0.3	0.1	0.5	0.0
% Coarse Sand	ASTM D422		0.5	1.4	0.5	2.8	0.2	6.1	1.0
% Medium Sand	ASTM D422		2.3	5.1	1.5	5.1	1.7	9.7	5.1
% Fine Sand	ASTM D422		88.9	80.7	93.1	83.9	86.1	73.1	74.9
% Fines	ASTM D422		7.9	12.6	4.5	7.9	11.9	10.6	19.0
Total Percent	ASTM D422		100.0	100.0	100.0	100.0	100.0	100.0	100.0

Non-detected results = "<" Limit of Detection
Results with "J" qualifier reported as estimated number
Bold type = results above Limit Of Quantitation

TABLE 2: STURGEON BAY GSA ANALYTICAL RESULTS

Parameter	Sample ID		SB-15-07 BPD	SB-15-08	SB-15-08 BPD	SB-15-09	SB-15-10	SB-15-10 BPD	SB-15-11
	Lab ID		1506418-013	1506418-008	1506418-014	1506418-009	1506418-010	1506418-015	1506418-011
	Date Collected		6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/8/2015
	Latitude, ° ' N			44° 48.596′		44° 48.698′	44° 48.897′		44° 48.958′
	Longitude, ° ' W			087° 20.215′		087° 20.359′	087° 20.659′		087° 20.781′
	Method								
Percent Moisture, wt%	ASTM D2216		36	50	36	52	54	22	56
Grain Size Analysis	Method								
% Coarse Gravel	ASTM D422		0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Fine Gravel	ASTM D422		0.0	0.3	0.1	0.5	0.5	0.4	0.0
% Coarse Sand	ASTM D422		2.0	2.7	2.8	5.1	4.9	7.4	2.6
% Medium Sand	ASTM D422		9.5	7.6	12.0	13.6	11.1	14.9	14.1
% Fine Sand	ASTM D422		68.8	66.4	60.8	52.9	45.5	45.3	46.0
% Fines	ASTM D422		19.7	23.0	24.3	27.9	38.0	32.0	37.3
Total Percent	ASTM D422		100.0	100.0	100.0	100.0	100.0	100.0	100.0

Non-detected results = "<" Limit of Detection
Results with "J" qualifier reported as estimated number
Bold type = results above Limit Of Quantitation

Parameter	Sample ID		SB-15-11 BPD	SB-15-12
	Lab ID		1506418-016	1506418-012
	Date Collected		6/8/2015	6/8/2015
	Latitude, ° ' N			44° 49.087'
	Longitude, ° ' W			087° 21.078'
	Method			
Percent Moisture, wt%	ASTM D2216		43	58
Grain Size Analysis	Method			
% Coarse Gravel	ASTM D422		0.0	0.0
% Fine Gravel	ASTM D422		1.5	0.0
% Coarse Sand	ASTM D422		13.0	3.9
% Medium Sand	ASTM D422		26.5	14.9
% Fine Sand	ASTM D422		42.0	44.8
% Fines	ASTM D422		17.0	36.4
Total Percent	ASTM D422		100.0	100.0

Non-detected results = "<" Limit of Detection
Results with "J" qualifier reported as estimated number
Bold type = results above Limit Of Quantitation

Station #	SB-15-01	SB-15-02	SB-15-03	SB-15-04	SB-15-05	SB-15-06	SB-15-07
Latitude, N	44° 47.438'	44° 47.484'	44° 47.494'	44° 47.549'	44° 47.582'	44° 47.578'	44° 48.549'
Longitude, W	087° 18.590'	087° 18.498'	087° 18.549'	087° 18.693'	087° 18.692'	087° 18.740'	087° 20.148'
Collection Method	Macro Core	Macro Core	Macro Core	Macro Core	Macro Core	Macro Core	Macro Core
Date, Sample collected	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015	6/9/2015
Time, Sample collected	8:18	8:42	9:09	9:42	10:41	11:08	12:50
Core Tube diameter, in	4	4	4	4	4	4	4
Core Recovery length, in	30	39	30	42	33	42	42
Water Depth, ft.	23.0	22.5	23.2	19.8	21.5	19.8	24.6
Project depth, ft.	23.0	23.0	23.0	23.0	23.0	23.0	22.0
Water Depth adjusted to MLW Datum, ft.	20.88	20.38	21.06	17.73	19.35	17.54	22.43
Shoaling above Project Depth, ft.	2.12	2.62	1.94	5.27	3.65	5.46	-0.43
Elevation sediment, ft.	556.62	557.12	556.44	559.77	558.15	559.96	555.08
LWD Delta, ft	2.12	2.12	2.14	2.07	2.15	2.26	2.17
Current Water Datum, ft.	579.62	579.62	579.64	579.57	579.65	579.76	579.68

Mean Low Water Datum, ft. = 577.5 Reference Station - Sturgeon Bay Canal (9087072)

Station #	Classification of retrieved sediment
SB-14-01	0-2.5' (SP) medium to course dry sand with very few shell fragments
SB-14-02	0-0.33' (SP/ML) grey to brown medium to fine sand with silt inclusions; 0.33'-3.25' (ML) grey to brown medium to fine sand
SB-14-03	0-1.67' (MH) black dirt/silt, some small pieces of rock/coal 0.25" in size; 1.67'-2.5' (ML) good medium fine sand, some silt
SB-14-04	0-1' (MH) soupy dark sand to silt, musty odor; 1'-2.67' (SP) sand with some shell fragments *Note: lost part of the core on way up*
SB-14-05	0-0.33' (MH) soupy silt with small sand clay inclusions; 0.33'-2.75' (CL) clay sand mix, no native material
SB-14-06	0-0.5' (MH) soupy brown black silt with small sand clay inclusions, vegitation, strong sewage odor; 0.5'-3.5' (ML) medium to fine
	sand with some shells
SB-14-07	0-1.33' (MH/SP) soupy silt with small sand clay inclusions and wet sand; 1.33'-3.5' (SC) dry clay sand mix

Station #	SB-15-08	SB-15-09	SB-15-10	SB-15-11	SB-15-12
Latitude, N	44° 48.596′	44° 48.698′	44° 48.897′	44° 48.958′	44° 49.087′
Longitude, W	087° 20.215′	087° 20.359′	087° 20.659′	087° 20.781′	087° 21.078′
Collection Method	Macro Core	Macro Core	Macro Core	Macro Core	Macro Core
Date, Sample collected	6/9/2015	6/9/2015	6/9/2015	6/8/2015	6/8/2015
Time, Sample collected	13:22	14:22	15:20	18:43	17:50
Core Tube diameter, in	4	4	4	4	4
Core Recovery length, in	40	21	33	46	34
Water Depth, ft.	23	22	21.5	23.7	24.0
Project depth, ft.	22.0	22.0	22.0	22.0	22.0
Water Depth adjusted to MLW Datum, ft.	20.69	19.74	19.32	21.51	21.81
Shoaling above Project Depth, ft.	1.31	2.26	2.68	0.49	0.19
Elevation sediment, ft.	556.81	557.76	558.18	555.99	555.69
LWD Delta, ft	2.31	2.26	2.18	2.19	2.19
Current Water Datum, ft.	579.81	579.76	579.68	579.69	579.69

Mean Low Water Datum, ft. = 577.5 Reference Station - Sturgeon Bay Canal (9087072)

Station #	Classification of retrieved sediment
SB-14-08	0-1.83' (ML/MH) native fine wet sand, soft silt with small sand clay inclusions; 1.83'-3.33' (SC) brown grey sand clay
SB-14-09	0-1.25' (MH) black soupy silt, no visible vegitation; 1.25'-1.75' (MH) semi solid silt with small sand clay inclusions
SB-14-10	1.67' (ML/CL) fine sand, mostly clay tan in color, native material; 1.67'-2.75' (MH) black/brown soft silt with small clay sand
	inclusions
SB-14-11	0-1.67' (CL) white rock clay; 1.67'-2.17' (MH) black silt
SB-14-12	0-0.83' (SP) sand; 0.83'-2.5' (ML) silt and sand mix; 2.5'-2.83' *plug not used*

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name: Sturgeon Bay, WI
Project Location: Sturgeon Bay
Drilling Date: 6/9/2015

Drillers: Coleman / RTI Laboratories

Sampling Method: Macro Core

Boring Number: SB-15-01
NOAA Station: Sturgeon Bay Canal (9087072)
Water Elevation: 579.62
Sediment Elevation: 556.62
State Plane Coordinates: 2,666,762.576 ft E
NAD83 4802 - Wisconsin Central 360,561.340 ft N
US feet

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
1	SB-15-01			2.50	2.5' (SP) medium to course dry sand with very few shell fragments	554.12	
					Bottom of Harbor		
2							
3							
4							
5							

Macro Core

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name:	Sturgeon Bay, WI	Boring Number:	SB-15-02
Project Location:	Sturgeon Bay	NOAA Station:	Sturgeon Bay Canal (9087072)
Drilling Date:	6/9/2015	Water Elevation:	579.62
		Sediment Elevation:	557.12
Drillers:	Coleman / RTI Laboratories	State Plane Coordinates:	2,667,151.161 ft E
		NAD83 4802 - Wisconsin Central	360,853.878 ft N
Sampling Method:	Macro Core	US feet	

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
1	SB-15-02			0.33	(SP/ML) grey to brown medium to fine sand with silt inclusions	556.79	
2					(ML) grey to brown medium to fine sand		
3				3.25		553.87	
4					Bottom of Sample		
5							

Macro Core

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name:	Sturgeon Bay, WI	Boring Number:	SB-15-03
Project Location:	Sturgeon Bay	NOAA Station:	Sturgeon Bay Canal (9087072)
Drilling Date:	6/9/2015	Water Elevation:	579.64
		Sediment Elevation:	556.44
Drillers:	Coleman / RTI Laboratories	State Plane Coordinates:	2,666,928.604 ft E
		NAD83 4802 - Wisconsin Central	360,907.295 ft N
Sampling Method:	Macro Core	US feet	

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
1	SB-15-03				(MH) black dirt/silt, some small pieces of rock/coal 0.25" in size		
				1.67		554.77	
2					(ML) good medium fine sand, some silt		
3				2.50		553.94	
4					Bottom of Sample		
5							

Macro Core

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name:	Sturgeon Bay, WI	Boring Number:	SB-15-04
Project Location:	Sturgeon Bay	NOAA Station:	Sturgeon Bay Canal (9087072)
Drilling Date:	6/9/2015	Water Elevation:	579.57
		Sediment Elevation:	559.77
Drillers:	Coleman / RTI Laboratories	State Plane Coordinates:	2,666,294.833 ft E
		NAD83 4802 - Wisconsin Central	361,220.668 ft N
Sampling Method:	Macro Core	US feet	

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
1	SB-15-04			1.00	(MH) soupy dark sand to silt, musty odor	558.77	
2				2.67	(SP) sand with some shell fragments	557.10	
3					Bottom of Sample		
4					Note: lost part of the core on way up		
5							

Macro Core

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name:	Sturgeon Bay, WI	Boring Number:	SB-15-05
Project Location:	Sturgeon Bay	NOAA Station:	Sturgeon Bay Canal (9087072)
Drilling Date:	6/9/2015	Water Elevation:	579.65
		Sediment Elevation:	558.15
Drillers:	Coleman / RTI Laboratories	State Plane Coordinates:	2,666,292.520 ft E
		NAD83 4802 - Wisconsin Central	361,421.215 ft N
Sampling Method:	Macro Core	US feet	

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
1	SB-15-05			0.33	(MH) soupy silt with small sand clay inclusions	557.82	
2					(CL) clay sand mix, no native material		
3				2.75		555.40	
4					Bottom of Sample		
5							

Macro Core

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name:	Sturgeon Bay, WI	Boring Number:	SB-15-06
Project Location:	Sturgeon Bay	NOAA Station:	Sturgeon Bay Canal (9087072)
Drilling Date:	6/9/2015	Water Elevation:	579.76
		Sediment Elevation:	559.96
Drillers:	Coleman / RTI Laboratories	State Plane Coordinates:	2,666,085.760 ft E
		NAD83 4802 - Wisconsin Central	361,390.050 ft N
Sampling Method:	Macro Core	US feet	

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
1	SB-15-06			0.50	(MH) soupy brown black silt with small sand clay inclusions, vegitation, strong sewage odor	559.46	
2					(ML) medium to fine sand with some shells		
3				3.50		556.46	
4					Bottom of Sample		
5							

Macro Core

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name: Sturgeon Bay, WI
Project Location: Sturgeon Bay
Drilling Date: 6/9/2015

Drillers: Coleman / RTI Laboratories

Sampling Method: Macro Core

Boring Number: SB-15-07
NOAA Station: Sturgeon Bay Canal (9087072)
Water Elevation: 579.68
Sediment Elevation: 555.08
State Plane Coordinates: 2,659,803.630 ft E
NAD83 4802 - Wisconsin Central 367,086.135 ft N
US feet

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
1	SB-15-07				(MH/SP) soupy silt with small sand clay inclusions and wet sand		
				1.33		553.75	
2					(SC) dry clay sand mix		
3				3.50		551.58	
4					Bottom of Sample		
5							

Macro Core

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name:	Sturgeon Bay, WI	Boring Number:	SB-15-08
Project Location:	Sturgeon Bay	NOAA Station:	Sturgeon Bay Canal (9087072)
Drilling Date:	6/9/2015	Water Elevation:	579.81
		Sediment Elevation:	556.81
Drillers:	Coleman / RTI Laboratories	State Plane Coordinates:	2,659,504.619 ft E
		NAD83 4802 - Wisconsin Central	367,362.058 ft N
Sampling Method:	Macro Core	US feet	

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
1	SB-15-08				(ML/MH) native fine wet sand, soft silt with small sand clay inclusions		
				1.25		555.56	
					(SC) brown grey sand clay		
2				1.75		555.06	
					Bottom of Sample		
3							
4							
5							

Macro Core

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name: Sturgeon Bay, WI
Project Location: Sturgeon Bay
Drilling Date: 6/9/2015

Drillers: Coleman / RTI Laboratories

Sampling Method: Macro Core

Boring Number: SB-15-09
NOAA Station: Sturgeon Bay Canal (9087072)
Water Elevation: 579.76
Sediment Elevation: 557.76
State Plane Coordinates: 2,658,861.798 ft E
NAD83 4802 - Wisconsin Central 367,961.083 ft N
US feet

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
0.5	SB-15-09				(MH) black soupy silt, no visible vegetation		
1				1.25		556.51	
1.5					(MH) semi solid silt with small sand clay inclusions		
2				1.75		556.01	
2.5					Bottom of Sample		

Macro Core

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name:	Sturgeon Bay, WI	Boring Number:	SB-15-10
Project Location:	Sturgeon Bay	NOAA Station:	Sturgeon Bay Canal (9087072)
Drilling Date:	6/9/2015	Water Elevation:	579.68
		Sediment Elevation:	558.18
Drillers:	Coleman / RTI Laboratories	State Plane Coordinates:	2,657,525.384 ft E
		NAD83 4802 - Wisconsin Central	369,127.130 ft N
Sampling Method:	Macro Core	US feet	

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
1	SB-15-10				(ML/CL) fine sand, mostly clay tan in color, native material		
				1.67		556.51	
2					(MH) black/brown soft silt with small clay sand		
3				2.75		555.43	
					Bottom of Sample		
4							
5							

Macro Core

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name:	Sturgeon Bay, WI	Boring Number:	SB-15-11
Project Location:	Sturgeon Bay	NOAA Station:	Sturgeon Bay Canal (9087072)
Drilling Date:	6/8/2015	Water Elevation:	579.69
		Sediment Elevation:	555.99
Drillers:	Coleman / RTI Laboratories	State Plane Coordinates:	2,656,985.907 ft E
		NAD83 4802 - Wisconsin Central	369,480.334 ft N
Sampling Method:	Macro Core	US feet	

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
0.5	SB-15-11				(CL) white rock cla		
1							
1.5				1.67		554.32	
2					(MH) black silt		
2.5				2.17		553.82	
					Bottom of Sample		

Macro Core

Sediment Boring Log

Client: U.S. Army Corps of Engineers - Detroit District

Project Name:	Sturgeon Bay, WI	Boring Number:	SB-15-12
Project Location:	Sturgeon Bay	NOAA Station:	Sturgeon Bay Canal (9087072)
Drilling Date:	6/8/2015	Water Elevation:	579.69
		Sediment Elevation:	555.69
Drillers:	Coleman / RTI Laboratories	State Plane Coordinates:	2,655,676.530 ft E
		NAD83 4802 - Wisconsin Central	370,221.817 ft N
Sampling Method:	Macro Core	US feet	

Depth (ft)	Sample Type Number	Environmental Data	Graphic Log	Depth (ft)	Material Description	Elev. (ft)	Picture
1	SB-15-12			0.83	(SP) sand	554.86	
2				2.50	(ML) silt and sand mix	553.19	
3				2.83	plug not used	552.86	
4					Bottom of Sample		
5							

Macro Core

Appendix E

Appendix E presents photos of samples collected using a drive core device and mixed samples collected from the Sturgeon Bay during the event in June 2015.

SB-15-01pic 1

SB-15-01 pic 2

SB-15-02 pic 1

SB-15-02 pic 2

SB-15-03 pic 1

SB-15-03 pic 2

Appendix D

SB-15-04 pic 1

SB-15-04 pic 2

SB-15-05 pic 1

SB-15-05 pic 2

SB-15-05 pic 3

SB-15-06 pic 1

Appendix D

SB-15-06 pic 2

SB-15-06 pic 3

SB-15 Core

SB-15-07 pic 1

SB-15-07 pic 2

SB-15-07 BPD pic 1

Appendix D

SB-15-07 BPD pic 2

SB-15-08 pic 1

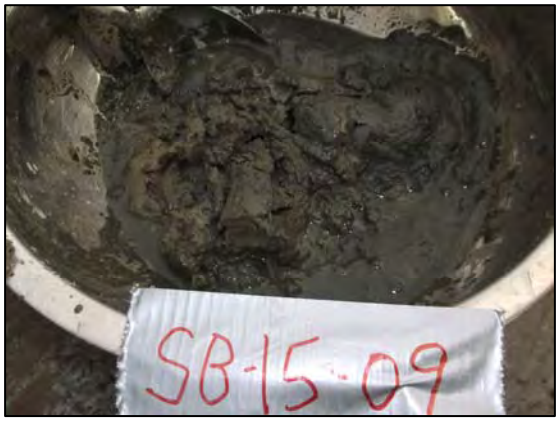
SB-15-08 pic 2

SB-15-08 BPD pic 1

SB-15-08 BPD pic 2

SB-15-09 pic 1

Appendix D



SB-15-09 pic 2

SB-15-10 pic 1

SB-15-10 pic 2

SB-15-10 pic 3

SB-15-10 BPD pic 1

SB-15-10 BPD pic 2

Appendix D

SB-15-11 pic 1

SB-15-11 pic 2

SB-15-11 BPD pic 1

SB-15-11 BPD pic 2

SB-15-12 pic 1

SB-15-12 pic 2

The following pages represent the completed Level 2 Data/Quality Control laboratory report(s) from RTI Laboratories and any subcontract laboratory. The laboratory work order number(s) are:

1506418 - RTI

RTI Laboratories
31628 Glendale St.
Livonia, MI 48150
TEL: (734) 422-8000
Website: www.rtilab.com

Thursday, September 10, 2015

Pam Horner
USACE- Detroit District
Environmental Analysis Branch
477 Michigan Ave.
Detroit, MI 48226
TEL:
FAX:

RE: Sturgeon Bay

Work Order #: 1506418

Dear Pam Horner:

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

This report may only be reproduced in its entirety. Individual pages, reproduced without supporting documentation, do not contain related information and may be misinterpreted by other data reviewers.

Quality control data is within laboratory defined or method specified acceptance limits except if noted.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Fred Hoitash

Director, Sales and Field Services

RTI Laboratories - Workorder Sample Summary

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay

Lab Sample ID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
1506418-001A	SB-15-01		6/9/2015 8:18 AM	6/11/2015 9:00 AM	Sediment
1506418-001B	SB-15-01		6/9/2015 8:18 AM	6/11/2015 9:00 AM	Sediment
1506418-001C	SB-15-01		6/9/2015 8:18 AM	6/11/2015 9:00 AM	Sediment
1506418-002A	SB-15-02		6/9/2015 8:42 AM	6/11/2015 9:00 AM	Sediment
1506418-002B	SB-15-02		6/9/2015 8:42 AM	6/11/2015 9:00 AM	Sediment
1506418-002C	SB-15-02		6/9/2015 8:42 AM	6/11/2015 9:00 AM	Sediment
1506418-003A	SB-15-03		6/9/2015 9:09 AM	6/11/2015 9:00 AM	Sediment
1506418-003B	SB-15-03		6/9/2015 9:09 AM	6/11/2015 9:00 AM	Sediment
1506418-003C	SB-15-03		6/9/2015 9:09 AM	6/11/2015 9:00 AM	Sediment
1506418-004A	SB-15-04		6/9/2015 9:42 AM	6/11/2015 9:00 AM	Sediment
1506418-004B	SB-15-04		6/9/2015 9:42 AM	6/11/2015 9:00 AM	Sediment
1506418-004C	SB-15-04		6/9/2015 9:42 AM	6/11/2015 9:00 AM	Sediment
1506418-005A	SB-15-05		6/9/2015 10:41 AM	6/11/2015 9:00 AM	Sediment
1506418-005B	SB-15-05		6/9/2015 10:41 AM	6/11/2015 9:00 AM	Sediment
1506418-005C	SB-15-05		6/9/2015 10:41 AM	6/11/2015 9:00 AM	Sediment
1506418-006A	SB-15-06		6/9/2015 11:08 AM	6/11/2015 9:00 AM	Sediment
1506418-006B	SB-15-06		6/9/2015 11:08 AM	6/11/2015 9:00 AM	Sediment
1506418-006C	SB-15-06		6/9/2015 11:08 AM	6/11/2015 9:00 AM	Sediment
1506418-007A	SB-15-07		6/9/2015 12:50 PM	6/11/2015 9:00 AM	Sediment
1506418-007B	SB-15-07		6/9/2015 12:50 PM	6/11/2015 9:00 AM	Sediment
1506418-007C	SB-15-07		6/9/2015 12:50 PM	6/11/2015 9:00 AM	Sediment
1506418-008A	SB-15-08		6/9/2015 1:35 PM	6/11/2015 9:00 AM	Sediment
1506418-008B	SB-15-08		6/9/2015 1:35 PM	6/11/2015 9:00 AM	Sediment
1506418-008C	SB-15-08		6/9/2015 1:35 PM	6/11/2015 9:00 AM	Sediment
1506418-009A	SB-15-09		6/9/2015 3:32 PM	6/11/2015 9:00 AM	Sediment
1506418-009B	SB-15-09		6/9/2015 3:32 PM	6/11/2015 9:00 AM	Sediment
1506418-009C	SB-15-09		6/9/2015 3:32 PM	6/11/2015 9:00 AM	Sediment
1506418-010A	SB-15-10		6/9/2015 2:39 PM	6/11/2015 9:00 AM	Sediment
1506418-010B	SB-15-10		6/9/2015 2:39 PM	6/11/2015 9:00 AM	Sediment
1506418-010C	SB-15-10		6/9/2015 2:39 PM	6/11/2015 9:00 AM	Sediment
1506418-011A	SB-15-11		6/8/2015 6:43 PM	6/11/2015 9:00 AM	Sediment
1506418-011B	SB-15-11		6/8/2015 6:43 PM	6/11/2015 9:00 AM	Sediment
1506418-011C	SB-15-11		6/8/2015 6:43 PM	6/11/2015 9:00 AM	Sediment
1506418-012A	SB-15-12		6/8/2015 5:50 PM	6/11/2015 9:00 AM	Sediment
1506418-012B	SB-15-12		6/8/2015 5:50 PM	6/11/2015 9:00 AM	Sediment
1506418-012C	SB-15-12		6/8/2015 5:50 PM	6/11/2015 9:00 AM	Sediment
1506418-013A	SB-15-07 BPD		6/9/2015 12:50 PM	6/11/2015 9:00 AM	Sediment
1506418-013B	SB-15-07 BPD		6/9/2015 12:50 PM	6/11/2015 9:00 AM	Sediment
1506418-013C	SB-15-07 BPD		6/9/2015 12:50 PM	6/11/2015 9:00 AM	Sediment
1506418-014A	SB-15-08 BPD		6/9/2015 1:35 PM	6/11/2015 9:00 AM	Sediment
1506418-014B	SB-15-08 BPD		6/9/2015 1:35 PM	6/11/2015 9:00 AM	Sediment
1506418-014C	SB-15-08 BPD		6/9/2015 1:35 PM	6/11/2015 9:00 AM	Sediment
1506418-015A	SB-15-10 BPD		6/9/2015 2:39 PM	6/11/2015 9:00 AM	Sediment
1506418-015B	SB-15-10 BPD		6/9/2015 2:39 PM	6/11/2015 9:00 AM	Sediment
1506418-015C	SB-15-10 BPD		6/9/2015 2:39 PM	6/11/2015 9:00 AM	Sediment

RTI Laboratories - Workorder Sample Summary

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay

Lab Sample ID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
1506418-016A	SB-15-11 BPD		6/8/2015 6:43 PM	6/11/2015 9:00 AM	Sediment
1506418-016B	SB-15-11 BPD		6/8/2015 6:43 PM	6/11/2015 9:00 AM	Sediment
1506418-016C	SB-15-11 BPD		6/8/2015 6:43 PM	6/11/2015 9:00 AM	Sediment

RTI Laboratories - Case Narrative

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay

Concentrations reported with a J flag in the Qual field are values below the reporting limit (RL) but greater than the established method detection limit (MDL). There is greater uncertainty associated with these results and data should be considered as estimated. These analytes are not routinely reviewed nor narrated below as to their potential for being laboratory artifacts.

Concentrations reported with an E flag in the Qual field are values that exceed the upper quantification range. There is greater uncertainty associated with these results and data should be considered as estimated.

Any comments or problems with the analytical events associated with this report are noted below.

Sample Analysis:
Samples were analyzed at the RTI Laboratories
1506418: Particle Size Analysis - ASTM-D422
Soil Density/Specific Gravity - ASTM D854
Percent Moisture - ASTM-D2216
Total, Fixed and Volatile Solids in Solids - SM2540G
Chemical Oxygen Demand, COD - EPA410.4M
Ammonia - SM4500-NH3-D
Total Phosphorus - A4500-P-F
Metals, ICP/OES - SW6010C
Mercury - SW7471B
Organochlorine Pesticides - SW8081B
Polychlorinated Biphenyls - SW8082A
Semi-Volatile Organic Compounds - SW8270D
Cyanide - SW9012B
Total Organic Carbon - SW9060A
Hexane Extractable Materials (HEM) - SW9071B

Analytical Comments for Test ASTM-D422, Analytical RunNo 78804, Batch ID R78804:
Sample 1506418-001ADUP, RPD results for Fine Gravel, Coarse Sand and Medium Sand exceeded control limits.

Analytical Comments for Test WI_4500-NH3-DS, Analytical RunNo 78749, Batch ID 36993:
Sample 1506418-001BMSD, Batch ID 36993 : Recovery for Ammonia-Nitrogen exceeded control limits.

Analytical Comments for Test WI_6010S, Analytical RunNo 78378, Batch ID 36885:
Sample 1506418-001C, matrix interference suspected for Zn
Sample 1506418-001CMS, Recoveries for Iron, Nickel and Zinc exceeded control limits. Suspected matrix interference for Zinc.
Sample 1506418-001CMSD, Recoveries for Iron and Zinc exceeded control limits. Suspected matrix interference for Zinc.

Analytical Comments for Test WI_8081S, Analytical RunNo 78850, Batch ID R78850:
Sample CCV1 070615E5, Batch ID R78850 : 4,4´-DDT, Methoxychlor exceeded control limit.

Analytical Comments for Test WI_8270S, Analytical RunNo 78679, Batch ID R78679:
Sample CCVE S7 062815, Batch ID R78679 : Closing CCV results for Benzo(g,h,i)perylene exceeded QC limits.

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 8:18:00 AM
Project:	Sturgeon Bay		
Lab ID:	1506418-001	**Matrix:**	Sediment
Client Sample ID:	SB-15-01		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 47.438					deg min		
Longitude	-087 18.590					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	140	J	64	230	230	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	2.4	U	0.72	2.4	2.4	µg/Kg-dry	1	7/6/2015 9:04 PM
4,4'-DDE	1.5	U	0.42	1.5	1.5	µg/Kg-dry	1	7/6/2015 9:04 PM
4,4'-DDT	1.6	U	0.46	1.6	1.6	µg/Kg-dry	1	7/6/2015 9:04 PM
Aldrin	1.5	U	0.45	1.5	1.5	µg/Kg-dry	1	7/6/2015 9:04 PM
alpha-BHC	1.3	U	0.39	1.3	1.3	µg/Kg-dry	1	7/6/2015 9:04 PM
alpha-Chlordane	1.6	U	0.49	1.6	1.6	µg/Kg-dry	1	7/6/2015 9:04 PM
beta-BHC	1.6	U	0.47	1.6	1.6	µg/Kg-dry	1	7/6/2015 9:04 PM
Chlordane (Technical)	15	U	4.6	15	15	µg/Kg-dry	1	7/6/2015 9:04 PM
delta-BHC	1.3	U	0.39	1.3	1.3	µg/Kg-dry	1	7/6/2015 9:04 PM
Dieldrin	1.6	U	0.48	1.6	1.6	µg/Kg-dry	1	7/6/2015 9:04 PM
Endosulfan I	1.7	U	0.50	1.7	1.7	µg/Kg-dry	1	7/6/2015 9:04 PM
Endosulfan II	1.6	U	0.49	1.6	1.6	µg/Kg-dry	1	7/6/2015 9:04 PM
Endosulfan sulfate	1.7	U	0.50	1.7	1.7	µg/Kg-dry	1	7/6/2015 9:04 PM
Endrin	1.7	U	0.51	1.7	1.7	µg/Kg-dry	1	7/6/2015 9:04 PM
Endrin aldehyde	1.7	U	0.52	1.7	1.7	µg/Kg-dry	1	7/6/2015 9:04 PM
Endrin ketone	1.6	U	0.48	1.6	1.6	µg/Kg-dry	1	7/6/2015 9:04 PM
gamma-BHC	1.3	U	0.40	1.3	1.3	µg/Kg-dry	1	7/6/2015 9:04 PM
gamma-Chlordane	1.6	U	0.49	1.6	1.6	µg/Kg-dry	1	7/6/2015 9:04 PM
Heptachlor	1.6	U	0.48	1.6	1.6	µg/Kg-dry	1	7/6/2015 9:04 PM
Heptachlor epoxide	1.6	U	0.49	1.6	1.6	µg/Kg-dry	1	7/6/2015 9:04 PM
Methoxychlor	1.7	U	0.50	1.7	1.7	µg/Kg-dry	1	7/6/2015 9:04 PM
Toxaphene	22	U	6.6	22	22	µg/Kg-dry	1	7/6/2015 9:04 PM
Surr: Decachlorobiphenyl	93.2			55-130		%Rec	1	7/6/2015 9:04 PM
Surr: Tetrachloro-m-xylene	90.6			42-129		%Rec	1	7/6/2015 9:04 PM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	2.6	U	0.79	2.6	2.6	µg/Kg-dry	1	6/23/2015 2:55 PM
Aroclor 1221	2.6	U	0.79	2.6	2.6	µg/Kg-dry	1	6/23/2015 2:55 PM
Aroclor 1232	2.6	U	0.79	2.6	2.6	µg/Kg-dry	1	6/23/2015 2:55 PM
Aroclor 1242	2.6	U	0.79	2.6	2.6	µg/Kg-dry	1	6/23/2015 2:55 PM
Aroclor 1248	2.6	U	0.79	2.6	2.6	µg/Kg-dry	1	6/23/2015 2:55 PM
Aroclor 1254	2.6	U	0.79	2.6	2.6	µg/Kg-dry	1	6/23/2015 2:55 PM
Aroclor 1260	2.6	U	0.66	2.6	2.6	µg/Kg-dry	1	6/23/2015 2:55 PM
Aroclor 1262	2.6	U	0.79	2.6	2.6	µg/Kg-dry	1	6/23/2015 2:55 PM
Aroclor 1268	2.6	U	0.79	2.6	2.6	µg/Kg-dry	1	6/23/2015 2:55 PM
Total PCBs	2.6	U	0.79	2.6	2.6	µg/Kg-dry	1	6/23/2015 2:55 PM
Surr: Tetrachloro-m-xylene	84.4			44-130		%Rec	1	6/23/2015 2:55 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-001
Client Sample ID: SB-15-01

Collection Date: 6/9/2015 8:18:00 AM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	70.5			60-125		%Rec	1	6/23/2015 2:55 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	140		0.94	3.4	3.4	mg/Kg-dry	10	7/2/2015 2:27 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	0.89	U	0.44	0.89	0.89	mg/Kg-dry	1	6/18/2015 12:54 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	2,100	U	630	2,100	2,100	µg/Kg-dry	1	6/15/2015 10:14 AM
Barium	7,700		2,100	6,900	6,900	µg/Kg-dry	1	6/15/2015 10:14 AM
Cadmium	68	J	41	100	100	µg/Kg-dry	1	6/15/2015 10:14 AM
Chromium	4,200		93	310	310	µg/Kg-dry	1	6/15/2015 10:14 AM
Copper	1,700	J	620	2,100	2,100	µg/Kg-dry	1	6/15/2015 10:14 AM
Iron	3,800,000		53,000	180,000	180,000	µg/Kg-dry	10	6/15/2015 11:15 AM
Lead	1,700	J	1,200	4,000	4,000	µg/Kg-dry	1	6/15/2015 10:14 AM
Manganese	86,000		220	720	720	µg/Kg-dry	1	6/15/2015 10:14 AM
Nickel	2,900		750	2,500	2,500	µg/Kg-dry	1	6/15/2015 10:14 AM
Selenium	1,900	U	570	1,900	1,900	µg/Kg-dry	1	7/10/2015 12:19 PM
Silver	620	U	200	620	620	µg/Kg-dry	1	6/15/2015 10:14 AM
Zinc	1,800	U	540	1,800	1,800	µg/Kg-dry	1	6/15/2015 10:14 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	11		2.0	6.8	6.8	µg/Kg-dry	1	6/15/2015 4:39 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	13	U	3.9	13	13	µg/Kg-dry	1	6/28/2015 11:20 PM
Acenaphthene	13	U	3.7	13	13	µg/Kg-dry	1	6/28/2015 11:20 PM
Acenaphthylene	16	U	4.9	16	16	µg/Kg-dry	1	6/28/2015 11:20 PM
Anthracene	11	U	3.2	11	11	µg/Kg-dry	1	6/28/2015 11:20 PM
Benzo(a)anthracene	7.5	J	5.8	20	20	µg/Kg-dry	1	6/28/2015 11:20 PM
Benzo(a)pyrene	8.9	J	7.3	24	24	µg/Kg-dry	1	6/28/2015 11:20 PM
Benzo(b)fluoranthene	29	U	8.9	29	29	µg/Kg-dry	1	6/28/2015 11:20 PM
Benzo(g,h,i)perylene	19	U	5.7	19	19	µg/Kg-dry	1	6/28/2015 11:20 PM
Benzo(k)fluoranthene	23	U	6.6	23	23	µg/Kg-dry	1	6/28/2015 11:20 PM
Chrysene	13	U	4.1	13	13	µg/Kg-dry	1	6/28/2015 11:20 PM
Dibenzo(a,h)anthracene	29	U	8.8	29	29	µg/Kg-dry	1	6/28/2015 11:20 PM
Fluoranthene	8.4	J	5.4	19	19	µg/Kg-dry	1	6/28/2015 11:20 PM
Fluorene	24	U	7.3	24	24	µg/Kg-dry	1	6/28/2015 11:20 PM
Indeno(1,2,3-cd)pyrene	25	U	7.6	25	25	µg/Kg-dry	1	6/28/2015 11:20 PM
Naphthalene	15	U	4.4	15	15	µg/Kg-dry	1	6/28/2015 11:20 PM
Phenanthrene	31	U	9.0	31	31	µg/Kg-dry	1	6/28/2015 11:20 PM
Pyrene	23	U	6.9	23	23	µg/Kg-dry	1	6/28/2015 11:20 PM
Surr: 2-Fluorobiphenyl	85.8			44-115		%Rec	1	6/28/2015 11:20 PM
Surr: Nitrobenzene-d5	86.2			37-122		%Rec	1	6/28/2015 11:20 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-001
Client Sample ID: SB-15-01

Collection Date: 6/9/2015 8:18:00 AM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	88.2			54-127		%Rec	1	6/28/2015 11:20 PM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	99		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	98		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	97		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	61		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	7.9		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	4.6		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	4.6		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.40		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	0.50		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	2.3		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	89		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	7.9		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	20.7					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.48						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	470		0.75	2.5	2.5	mg/Kg-dry	1	7/1/2015 2:09 PM
Nitrogen, Ammonia	120		0.87	2.9	2.9	mg/Kg-dry	1	6/26/2015 4:06 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	26		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	74		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	1.1		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	3,800		210	290	580	mg/Kg-dry	21.459 22747	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	24,000		760	2,500	2,500	mg/Kg-dry	1	6/29/2015 11:53 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 8:42:00 AM
Project:	Sturgeon Bay		
Lab ID:	1506418-002	**Matrix:**	Sediment
Client Sample ID:	SB-15-02		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 47.484					deg min		
Longitude	-087 18.498					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	120	J	68	240	240	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	7/6/2015 10:19 PM
4,4'-DDE	1.5	U	0.44	1.5	1.5	µg/Kg-dry	1	7/6/2015 10:19 PM
4,4'-DDT	1.7	U	0.49	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:19 PM
Aldrin	1.5	U	0.47	1.5	1.5	µg/Kg-dry	1	7/6/2015 10:19 PM
alpha-BHC	1.4	U	0.41	1.4	1.4	µg/Kg-dry	1	7/6/2015 10:19 PM
alpha-Chlordane	1.7	U	0.53	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:19 PM
beta-BHC	1.7	U	0.50	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:19 PM
Chlordane (Technical)	16	U	4.9	16	16	µg/Kg-dry	1	7/6/2015 10:19 PM
delta-BHC	1.4	U	0.41	1.4	1.4	µg/Kg-dry	1	7/6/2015 10:19 PM
Dieldrin	1.7	U	0.51	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:19 PM
Endosulfan I	1.8	U	0.53	1.8	1.8	µg/Kg-dry	1	7/6/2015 10:19 PM
Endosulfan II	1.7	U	0.52	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:19 PM
Endosulfan sulfate	1.8	U	0.53	1.8	1.8	µg/Kg-dry	1	7/6/2015 10:19 PM
Endrin	1.8	U	0.54	1.8	1.8	µg/Kg-dry	1	7/6/2015 10:19 PM
Endrin aldehyde	1.8	U	0.55	1.8	1.8	µg/Kg-dry	1	7/6/2015 10:19 PM
Endrin ketone	1.7	U	0.51	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:19 PM
gamma-BHC	1.4	U	0.43	1.4	1.4	µg/Kg-dry	1	7/6/2015 10:19 PM
gamma-Chlordane	1.7	U	0.53	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:19 PM
Heptachlor	1.7	U	0.51	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:19 PM
Heptachlor epoxide	1.7	U	0.52	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:19 PM
Methoxychlor	1.8	U	0.54	1.8	1.8	µg/Kg-dry	1	7/6/2015 10:19 PM
Toxaphene	23	U	7.0	23	23	µg/Kg-dry	1	7/6/2015 10:19 PM
Surr: Decachlorobiphenyl	88.7			55-130		%Rec	1	7/6/2015 10:19 PM
Surr: Tetrachloro-m-xylene	70.3			42-129		%Rec	1	7/6/2015 10:19 PM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	2.8	U	0.84	2.8	2.8	µg/Kg-dry	1	6/23/2015 3:19 PM
Aroclor 1221	2.8	U	0.84	2.8	2.8	µg/Kg-dry	1	6/23/2015 3:19 PM
Aroclor 1232	2.8	U	0.84	2.8	2.8	µg/Kg-dry	1	6/23/2015 3:19 PM
Aroclor 1242	2.8	U	0.84	2.8	2.8	µg/Kg-dry	1	6/23/2015 3:19 PM
Aroclor 1248	2.8	U	0.84	2.8	2.8	µg/Kg-dry	1	6/23/2015 3:19 PM
Aroclor 1254	2.8	U	0.84	2.8	2.8	µg/Kg-dry	1	6/23/2015 3:19 PM
Aroclor 1260	2.8	U	0.70	2.8	2.8	µg/Kg-dry	1	6/23/2015 3:19 PM
Aroclor 1262	2.8	U	0.84	2.8	2.8	µg/Kg-dry	1	6/23/2015 3:19 PM
Aroclor 1268	2.8	U	0.84	2.8	2.8	µg/Kg-dry	1	6/23/2015 3:19 PM
Total PCBs	2.8	U	0.84	2.8	2.8	µg/Kg-dry	1	6/23/2015 3:19 PM
Surr: Tetrachloro-m-xylene	87.7			44-130		%Rec	1	6/23/2015 3:19 PM

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 8:42:00 AM
Project:	Sturgeon Bay		
Lab ID:	1506418-002	**Matrix:**	Sediment
Client Sample ID:	SB-15-02		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	70.2			60-125		%Rec	1	6/23/2015 3:19 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	200		0.98	3.5	3.5	mg/Kg-dry	10	7/2/2015 2:27 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	0.96	U	0.47	0.96	0.96	mg/Kg-dry	1	6/18/2015 12:18 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	950	J	620	2,000	2,000	µg/Kg-dry	1	6/15/2015 10:26 AM
Barium	11,000		2,000	6,800	6,800	µg/Kg-dry	1	6/15/2015 10:26 AM
Cadmium	160		41	100	100	µg/Kg-dry	1	6/15/2015 10:26 AM
Chromium	5,500		92	310	310	µg/Kg-dry	1	6/15/2015 10:26 AM
Copper	2,900		610	2,000	2,000	µg/Kg-dry	1	6/15/2015 10:26 AM
Iron	4,500,000		52,000	170,000	170,000	µg/Kg-dry	10	6/15/2015 11:16 AM
Lead	2,800	J	1,200	4,000	4,000	µg/Kg-dry	1	6/15/2015 10:26 AM
Manganese	130,000		210	710	710	µg/Kg-dry	1	6/15/2015 10:26 AM
Nickel	3,800		740	2,400	2,400	µg/Kg-dry	1	6/15/2015 10:26 AM
Selenium	1,900	U	570	1,900	1,900	µg/Kg-dry	1	7/10/2015 12:28 PM
Silver	610	U	190	610	610	µg/Kg-dry	1	6/15/2015 10:26 AM
Zinc	1,700	U	530	1,700	1,700	µg/Kg-dry	1	6/15/2015 10:26 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	15		2.1	7.1	7.1	µg/Kg-dry	1	6/15/2015 4:40 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	14	U	4.2	14	14	µg/Kg-dry	1	6/29/2015 12:37 AM
Acenaphthene	14	U	4.0	14	14	µg/Kg-dry	1	6/29/2015 12:37 AM
Acenaphthylene	17	U	5.3	17	17	µg/Kg-dry	1	6/29/2015 12:37 AM
Anthracene	11	U	3.4	11	11	µg/Kg-dry	1	6/29/2015 12:37 AM
Benzo(a)anthracene	7.7	J	6.3	22	22	µg/Kg-dry	1	6/29/2015 12:37 AM
Benzo(a)pyrene	10	J	7.9	26	26	µg/Kg-dry	1	6/29/2015 12:37 AM
Benzo(b)fluoranthene	32	U	9.6	32	32	µg/Kg-dry	1	6/29/2015 12:37 AM
Benzo(g,h,i)perylene	20	U	6.2	20	20	µg/Kg-dry	1	6/29/2015 12:37 AM
Benzo(k)fluoranthene	24	U	7.2	24	24	µg/Kg-dry	1	6/29/2015 12:37 AM
Chrysene	14	U	4.5	14	14	µg/Kg-dry	1	6/29/2015 12:37 AM
Dibenzo(a,h)anthracene	32	U	9.5	32	32	µg/Kg-dry	1	6/29/2015 12:37 AM
Fluoranthene	11	J	5.9	20	20	µg/Kg-dry	1	6/29/2015 12:37 AM
Fluorene	26	U	7.9	26	26	µg/Kg-dry	1	6/29/2015 12:37 AM
Indeno(1,2,3-cd)pyrene	27	U	8.2	27	27	µg/Kg-dry	1	6/29/2015 12:37 AM
Naphthalene	16	U	4.7	16	16	µg/Kg-dry	1	6/29/2015 12:37 AM
Phenanthrene	33	U	9.8	33	33	µg/Kg-dry	1	6/29/2015 12:37 AM
Pyrene	8.1	J	7.5	24	24	µg/Kg-dry	1	6/29/2015 12:37 AM
Surr: 2-Fluorobiphenyl	89.6			44-115		%Rec	1	6/29/2015 12:37 AM
Surr: Nitrobenzene-d5	91.5			37-122		%Rec	1	6/29/2015 12:37 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-002
Client Sample ID: SB-15-02

Collection Date: 6/9/2015 8:42:00 AM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	91.9			54-127		%Rec	1	6/29/2015 12:37 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	98		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	96		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	93		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	78		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	13		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	6.8		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	6.8		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.20		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	1.4		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	5.1		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	81		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	13		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	20.4					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.45						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	550		0.80	2.7	2.7	mg/Kg-dry	1	7/1/2015 2:20 PM
Nitrogen, Ammonia	250		0.89	3.0	3.0	mg/Kg-dry	1	6/26/2015 4:17 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	31		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	69		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	1.7		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	9,700		230	310	630	mg/Kg-dry	21.645 02165	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	36,000		800	2,600	2,600	mg/Kg-dry	1	6/29/2015 1:14 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-003
Client Sample ID: SB-15-03

Collection Date: 6/9/2015 9:09:00 AM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 47.494					deg min		
Longitude	-087 18.549					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	79	J	62	220	220	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	2.3	U	0.71	2.3	2.3	µg/Kg-dry	1	7/6/2015 10:44 PM
4,4'-DDE	1.4	U	0.41	1.4	1.4	µg/Kg-dry	1	7/6/2015 10:44 PM
4,4'-DDT	1.6	U	0.46	1.6	1.6	µg/Kg-dry	1	7/6/2015 10:44 PM
Aldrin	1.4	U	0.44	1.4	1.4	µg/Kg-dry	1	7/6/2015 10:44 PM
alpha-BHC	1.3	U	0.38	1.3	1.3	µg/Kg-dry	1	7/6/2015 10:44 PM
alpha-Chlordane	1.6	U	0.49	1.6	1.6	µg/Kg-dry	1	7/6/2015 10:44 PM
beta-BHC	1.6	U	0.47	1.6	1.6	µg/Kg-dry	1	7/6/2015 10:44 PM
Chlordane (Technical)	15	U	4.5	15	15	µg/Kg-dry	1	7/6/2015 10:44 PM
delta-BHC	1.3	U	0.38	1.3	1.3	µg/Kg-dry	1	7/6/2015 10:44 PM
Dieldrin	1.6	U	0.47	1.6	1.6	µg/Kg-dry	1	7/6/2015 10:44 PM
Endosulfan I	1.7	U	0.49	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:44 PM
Endosulfan II	1.6	U	0.49	1.6	1.6	µg/Kg-dry	1	7/6/2015 10:44 PM
Endosulfan sulfate	1.7	U	0.49	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:44 PM
Endrin	1.7	U	0.50	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:44 PM
Endrin aldehyde	1.7	U	0.51	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:44 PM
Endrin ketone	1.6	U	0.48	1.6	1.6	µg/Kg-dry	1	7/6/2015 10:44 PM
gamma-BHC	1.3	U	0.40	1.3	1.3	µg/Kg-dry	1	7/6/2015 10:44 PM
gamma-Chlordane	1.6	U	0.49	1.6	1.6	µg/Kg-dry	1	7/6/2015 10:44 PM
Heptachlor	1.6	U	0.48	1.6	1.6	µg/Kg-dry	1	7/6/2015 10:44 PM
Heptachlor epoxide	1.6	U	0.48	1.6	1.6	µg/Kg-dry	1	7/6/2015 10:44 PM
Methoxychlor	1.7	U	0.50	1.7	1.7	µg/Kg-dry	1	7/6/2015 10:44 PM
Toxaphene	22	U	6.5	22	22	µg/Kg-dry	1	7/6/2015 10:44 PM
Surr: Decachlorobiphenyl	85.8			55-130		%Rec	1	7/6/2015 10:44 PM
Surr: Tetrachloro-m-xylene	105			42-129		%Rec	1	7/6/2015 10:44 PM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	2.6	U	0.78	2.6	2.6	µg/Kg-dry	1	6/23/2015 3:43 PM
Aroclor 1221	2.6	U	0.78	2.6	2.6	µg/Kg-dry	1	6/23/2015 3:43 PM
Aroclor 1232	2.6	U	0.78	2.6	2.6	µg/Kg-dry	1	6/23/2015 3:43 PM
Aroclor 1242	2.6	U	0.78	2.6	2.6	µg/Kg-dry	1	6/23/2015 3:43 PM
Aroclor 1248	2.6	U	0.78	2.6	2.6	µg/Kg-dry	1	6/23/2015 3:43 PM
Aroclor 1254	2.6	U	0.78	2.6	2.6	µg/Kg-dry	1	6/23/2015 3:43 PM
Aroclor 1260	2.6	U	0.65	2.6	2.6	µg/Kg-dry	1	6/23/2015 3:43 PM
Aroclor 1262	2.6	U	0.78	2.6	2.6	µg/Kg-dry	1	6/23/2015 3:43 PM
Aroclor 1268	2.6	U	0.78	2.6	2.6	µg/Kg-dry	1	6/23/2015 3:43 PM
Total PCBs	2.6	U	0.78	2.6	2.6	µg/Kg-dry	1	6/23/2015 3:43 PM
Surr: Tetrachloro-m-xylene	83.7			44-130		%Rec	1	6/23/2015 3:43 PM

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 9:09:00 AM
Project:	Sturgeon Bay		
Lab ID:	1506418-003	**Matrix:**	Sediment
Client Sample ID:	SB-15-03		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	70.1			60-125		%Rec	1	6/23/2015 3:43 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	82		0.89	3.2	3.2	mg/Kg-dry	10	7/2/2015 2:27 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	0.87	U	0.43	0.87	0.87	mg/Kg-dry	1	6/18/2015 12:18 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	1,200	J	790	2,600	2,600	µg/Kg-dry	1	6/15/2015 10:27 AM
Barium	5,200	J	2,600	8,700	8,700	µg/Kg-dry	1	6/15/2015 10:27 AM
Cadmium	66	J	52	130	130	µg/Kg-dry	1	6/15/2015 10:27 AM
Chromium	3,700		120	390	390	µg/Kg-dry	1	6/15/2015 10:27 AM
Copper	2,600	U	770	2,600	2,600	µg/Kg-dry	1	6/15/2015 10:27 AM
Iron	4,000,000		66,000	220,000	220,000	µg/Kg-dry	10	6/15/2015 11:17 AM
Lead	5,000	U	1,500	5,000	5,000	µg/Kg-dry	1	6/15/2015 10:27 AM
Manganese	91,000		270	900	900	µg/Kg-dry	1	6/15/2015 10:27 AM
Nickel	2,300	J	940	3,100	3,100	µg/Kg-dry	1	6/15/2015 10:27 AM
Selenium	1,700	U	500	1,700	1,700	µg/Kg-dry	1	7/10/2015 12:30 PM
Silver	770	U	250	770	770	µg/Kg-dry	1	6/15/2015 10:27 AM
Zinc	2,200	U	670	2,200	2,200	µg/Kg-dry	1	6/15/2015 10:27 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	9.9		2.5	8.4	8.4	µg/Kg-dry	1	6/15/2015 4:42 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	13	U	3.8	13	13	µg/Kg-dry	1	6/29/2015 1:02 AM
Acenaphthene	12	U	3.7	12	12	µg/Kg-dry	1	6/29/2015 1:02 AM
Acenaphthylene	16	U	4.8	16	16	µg/Kg-dry	1	6/29/2015 1:02 AM
Anthracene	10	U	3.1	10	10	µg/Kg-dry	1	6/29/2015 1:02 AM
Benzo(a)anthracene	20	U	5.8	20	20	µg/Kg-dry	1	6/29/2015 1:02 AM
Benzo(a)pyrene	24	U	7.2	24	24	µg/Kg-dry	1	6/29/2015 1:02 AM
Benzo(b)fluoranthene	29	U	8.8	29	29	µg/Kg-dry	1	6/29/2015 1:02 AM
Benzo(g,h,i)perylene	18	U	5.6	18	18	µg/Kg-dry	1	6/29/2015 1:02 AM
Benzo(k)fluoranthene	22	U	6.5	22	22	µg/Kg-dry	1	6/29/2015 1:02 AM
Chrysene	13	U	4.1	13	13	µg/Kg-dry	1	6/29/2015 1:02 AM
Dibenzo(a,h)anthracene	29	U	8.6	29	29	µg/Kg-dry	1	6/29/2015 1:02 AM
Fluoranthene	18	U	5.4	18	18	µg/Kg-dry	1	6/29/2015 1:02 AM
Fluorene	24	U	7.2	24	24	µg/Kg-dry	1	6/29/2015 1:02 AM
Indeno(1,2,3-cd)pyrene	25	U	7.5	25	25	µg/Kg-dry	1	6/29/2015 1:02 AM
Naphthalene	14	U	4.3	14	14	µg/Kg-dry	1	6/29/2015 1:02 AM
Phenanthrene	30	U	8.9	30	30	µg/Kg-dry	1	6/29/2015 1:02 AM
Pyrene	22	U	6.8	22	22	µg/Kg-dry	1	6/29/2015 1:02 AM
Surr: 2-Fluorobiphenyl	82.8			44-115		%Rec	1	6/29/2015 1:02 AM
Surr: Nitrobenzene-d5	82.1			37-122		%Rec	1	6/29/2015 1:02 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-003
Client Sample ID: SB-15-03

Collection Date: 6/9/2015 9:09:00 AM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	86.3			54-127		%Rec	1	6/29/2015 1:02 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	99		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	98		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	98		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	79		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	4.5		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	2.2		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	2.2		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.40		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	0.50		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	1.5		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	93		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	4.5		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	23.6					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.84						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	180		0.68	2.3	2.3	mg/Kg-dry	1	7/1/2015 2:22 PM
Nitrogen, Ammonia	39		0.80	2.7	2.7	mg/Kg-dry	1	6/26/2015 4:22 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	24		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	76		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	0.91		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	1,400		230	330	650	mg/Kg-dry	24.752 47525	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	23,000		780	2,600	2,600	mg/Kg-dry	1	6/29/2015 1:36 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 9:42:00 AM
Project:	Sturgeon Bay		
Lab ID:	1506418-004	**Matrix:**	Sediment
Client Sample ID:	SB-15-04		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 47.549					deg min		
Longitude	-087 18.693					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	400		73	260	260	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	2.8	U	0.83	2.8	2.8	µg/Kg-dry	1	7/6/2015 11:09 PM
4,4'-DDE	1.7	U	0.49	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:09 PM
4,4'-DDT	1.8	U	0.54	1.8	1.8	µg/Kg-dry	1	7/6/2015 11:09 PM
Aldrin	1.7	U	0.52	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:09 PM
alpha-BHC	1.5	U	0.45	1.5	1.5	µg/Kg-dry	1	7/6/2015 11:09 PM
alpha-Chlordane	1.8	U	0.57	1.8	1.8	µg/Kg-dry	1	7/6/2015 11:09 PM
beta-BHC	1.8	U	0.55	1.8	1.8	µg/Kg-dry	1	7/6/2015 11:09 PM
Chlordane (Technical)	18	U	5.4	18	18	µg/Kg-dry	1	7/6/2015 11:09 PM
delta-BHC	1.5	U	0.45	1.5	1.5	µg/Kg-dry	1	7/6/2015 11:09 PM
Dieldrin	1.8	U	0.55	1.8	1.8	µg/Kg-dry	1	7/6/2015 11:09 PM
Endosulfan I	2.0	U	0.58	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:09 PM
Endosulfan II	1.8	U	0.57	1.8	1.8	µg/Kg-dry	1	7/6/2015 11:09 PM
Endosulfan sulfate	2.0	U	0.58	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:09 PM
Endrin	2.0	U	0.59	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:09 PM
Endrin aldehyde	2.0	U	0.60	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:09 PM
Endrin ketone	1.8	U	0.56	1.8	1.8	µg/Kg-dry	1	7/6/2015 11:09 PM
gamma-BHC	1.5	U	0.47	1.5	1.5	µg/Kg-dry	1	7/6/2015 11:09 PM
gamma-Chlordane	1.8	U	0.57	1.8	1.8	µg/Kg-dry	1	7/6/2015 11:09 PM
Heptachlor	1.8	U	0.56	1.8	1.8	µg/Kg-dry	1	7/6/2015 11:09 PM
Heptachlor epoxide	1.8	U	0.57	1.8	1.8	µg/Kg-dry	1	7/6/2015 11:09 PM
Methoxychlor	2.0	U	0.59	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:09 PM
Toxaphene	26	U	7.7	26	26	µg/Kg-dry	1	7/6/2015 11:09 PM
Surr: Decachlorobiphenyl	107			55-130		%Rec	1	7/6/2015 11:09 PM
Surr: Tetrachloro-m-xylene	83.6			42-129		%Rec	1	7/6/2015 11:09 PM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 4:56 PM
Aroclor 1221	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 4:56 PM
Aroclor 1232	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 4:56 PM
Aroclor 1242	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 4:56 PM
Aroclor 1248	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 4:56 PM
Aroclor 1254	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 4:56 PM
Aroclor 1260	3.1	U	0.77	3.1	3.1	µg/Kg-dry	1	6/23/2015 4:56 PM
Aroclor 1262	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 4:56 PM
Aroclor 1268	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 4:56 PM
Total PCBs	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 4:56 PM
Surr: Tetrachloro-m-xylene	96.6			44-130		%Rec	1	6/23/2015 4:56 PM

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 9:42:00 AM
Project:	Sturgeon Bay		
Lab ID:	1506418-004	**Matrix:**	Sediment
Client Sample ID:	SB-15-04		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	84.2			60-125		%Rec	1	6/23/2015 4:56 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	230		1.0	3.7	3.7	mg/Kg-dry	10	7/2/2015 2:27 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	1.0	U	0.51	1.0	1.0	mg/Kg-dry	1	6/18/2015 12:18 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	1,600	J	690	2,300	2,300	µg/Kg-dry	1	6/15/2015 10:28 AM
Barium	9,800		2,300	7,600	7,600	µg/Kg-dry	1	6/15/2015 10:28 AM
Cadmium	150		45	110	110	µg/Kg-dry	1	6/15/2015 10:28 AM
Chromium	3,600		100	340	340	µg/Kg-dry	1	6/15/2015 10:28 AM
Copper	1,800	J	680	2,300	2,300	µg/Kg-dry	1	6/15/2015 10:28 AM
Iron	3,100,000		58,000	190,000	190,000	µg/Kg-dry	10	6/15/2015 11:19 AM
Lead	4,400	U	1,400	4,400	4,400	µg/Kg-dry	1	6/15/2015 10:28 AM
Manganese	89,000		240	790	790	µg/Kg-dry	1	6/15/2015 10:28 AM
Nickel	2,700	J	830	2,700	2,700	µg/Kg-dry	1	6/15/2015 10:28 AM
Selenium	2,300	U	680	2,300	2,300	µg/Kg-dry	1	7/10/2015 12:31 PM
Silver	680	U	220	680	680	µg/Kg-dry	1	6/15/2015 10:28 AM
Zinc	1,900	U	590	1,900	1,900	µg/Kg-dry	1	6/15/2015 10:28 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	13		2.1	7.4	7.4	µg/Kg-dry	1	6/15/2015 4:54 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	15	U	4.5	15	15	µg/Kg-dry	1	6/29/2015 1:27 AM
Acenaphthene	15	U	4.3	15	15	µg/Kg-dry	1	6/29/2015 1:27 AM
Acenaphthylene	18	U	5.7	18	18	µg/Kg-dry	1	6/29/2015 1:27 AM
Anthracene	12	U	3.7	12	12	µg/Kg-dry	1	6/29/2015 1:27 AM
Benzo(a)anthracene	8.7	J	6.8	23	23	µg/Kg-dry	1	6/29/2015 1:27 AM
Benzo(a)pyrene	11	J	8.5	28	28	µg/Kg-dry	1	6/29/2015 1:27 AM
Benzo(b)fluoranthene	34	U	10	34	34	µg/Kg-dry	1	6/29/2015 1:27 AM
Benzo(g,h,i)perylene	22	U	6.6	22	22	µg/Kg-dry	1	6/29/2015 1:27 AM
Benzo(k)fluoranthene	26	U	7.7	26	26	µg/Kg-dry	1	6/29/2015 1:27 AM
Chrysene	15	U	4.8	15	15	µg/Kg-dry	1	6/29/2015 1:27 AM
Dibenzo(a,h)anthracene	34	U	10	34	34	µg/Kg-dry	1	6/29/2015 1:27 AM
Fluoranthene	10	J	6.3	22	22	µg/Kg-dry	1	6/29/2015 1:27 AM
Fluorene	28	U	8.5	28	28	µg/Kg-dry	1	6/29/2015 1:27 AM
Indeno(1,2,3-cd)pyrene	29	U	8.8	29	29	µg/Kg-dry	1	6/29/2015 1:27 AM
Naphthalene	17	U	5.1	17	17	µg/Kg-dry	1	6/29/2015 1:27 AM
Phenanthrene	35	U	10	35	35	µg/Kg-dry	1	6/29/2015 1:27 AM
Pyrene	26	U	8.0	26	26	µg/Kg-dry	1	6/29/2015 1:27 AM
Surr: 2-Fluorobiphenyl	84.8			44-115		%Rec	1	6/29/2015 1:27 AM
Surr: Nitrobenzene-d5	86.3			37-122		%Rec	1	6/29/2015 1:27 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-004
Client Sample ID: SB-15-04

Collection Date: 6/9/2015 9:42:00 AM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	88.0			54-127		%Rec	1	6/29/2015 1:27 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	97		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	94		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	92		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	72		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	7.9		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	4.2		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	4.2		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.30		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	2.8		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	5.1		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	84		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	7.9		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	17.8					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.14						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	1,400		0.86	2.9	2.9	mg/Kg-dry	1	7/1/2015 2:25 PM
Nitrogen, Ammonia	460		0.93	3.1	3.1	mg/Kg-dry	1	6/26/2015 4:24 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	35		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	65		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	2.4		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	20,000		270	370	740	mg/Kg-dry	23.923 44498	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	19,000		770	2,500	2,500	mg/Kg-dry	1	6/29/2015 2:19 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-005
Client Sample ID: SB-15-05

Collection Date: 6/9/2015 10:41:00 AM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 47.582					deg min		
Longitude	-087 18.692					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	150	J	68	240	240	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	2.6	U	0.78	2.6	2.6	µg/Kg-dry	1	7/6/2015 11:34 PM
4,4'-DDE	1.6	U	0.45	1.6	1.6	µg/Kg-dry	1	7/6/2015 11:34 PM
4,4'-DDT	1.7	U	0.50	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:34 PM
Aldrin	1.6	U	0.48	1.6	1.6	µg/Kg-dry	1	7/6/2015 11:34 PM
alpha-BHC	1.4	U	0.42	1.4	1.4	µg/Kg-dry	1	7/6/2015 11:34 PM
alpha-Chlordane	1.7	U	0.54	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:34 PM
beta-BHC	1.7	U	0.51	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:34 PM
Chlordane (Technical)	17	U	5.0	17	17	µg/Kg-dry	1	7/6/2015 11:34 PM
delta-BHC	1.4	U	0.42	1.4	1.4	µg/Kg-dry	1	7/6/2015 11:34 PM
Dieldrin	1.7	U	0.52	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:34 PM
Endosulfan I	1.9	U	0.54	1.9	1.9	µg/Kg-dry	1	7/6/2015 11:34 PM
Endosulfan II	1.7	U	0.54	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:34 PM
Endosulfan sulfate	1.9	U	0.54	1.9	1.9	µg/Kg-dry	1	7/6/2015 11:34 PM
Endrin	1.9	U	0.55	1.9	1.9	µg/Kg-dry	1	7/6/2015 11:34 PM
Endrin aldehyde	1.9	U	0.56	1.9	1.9	µg/Kg-dry	1	7/6/2015 11:34 PM
Endrin ketone	1.7	U	0.53	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:34 PM
gamma-BHC	1.4	U	0.44	1.4	1.4	µg/Kg-dry	1	7/6/2015 11:34 PM
gamma-Chlordane	1.7	U	0.54	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:34 PM
Heptachlor	1.7	U	0.53	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:34 PM
Heptachlor epoxide	1.7	U	0.53	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:34 PM
Methoxychlor	1.9	U	0.55	1.9	1.9	µg/Kg-dry	1	7/6/2015 11:34 PM
Toxaphene	24	U	7.2	24	24	µg/Kg-dry	1	7/6/2015 11:34 PM
Surr: Decachlorobiphenyl	96.2			55-130		%Rec	1	7/6/2015 11:34 PM
Surr: Tetrachloro-m-xylene	76.2			42-129		%Rec	1	7/6/2015 11:34 PM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	2.9	U	0.86	2.9	2.9	µg/Kg-dry	1	6/23/2015 5:20 PM
Aroclor 1221	2.9	U	0.86	2.9	2.9	µg/Kg-dry	1	6/23/2015 5:20 PM
Aroclor 1232	2.9	U	0.86	2.9	2.9	µg/Kg-dry	1	6/23/2015 5:20 PM
Aroclor 1242	2.9	U	0.86	2.9	2.9	µg/Kg-dry	1	6/23/2015 5:20 PM
Aroclor 1248	2.9	U	0.86	2.9	2.9	µg/Kg-dry	1	6/23/2015 5:20 PM
Aroclor 1254	2.9	U	0.86	2.9	2.9	µg/Kg-dry	1	6/23/2015 5:20 PM
Aroclor 1260	2.9	U	0.72	2.9	2.9	µg/Kg-dry	1	6/23/2015 5:20 PM
Aroclor 1262	2.9	U	0.86	2.9	2.9	µg/Kg-dry	1	6/23/2015 5:20 PM
Aroclor 1268	2.9	U	0.86	2.9	2.9	µg/Kg-dry	1	6/23/2015 5:20 PM
Total PCBs	2.9	U	0.86	2.9	2.9	µg/Kg-dry	1	6/23/2015 5:20 PM
Surr: Tetrachloro-m-xylene	89.6			44-130		%Rec	1	6/23/2015 5:20 PM

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 10:41:00 AM
Project:	Sturgeon Bay		
Lab ID:	1506418-005	**Matrix:**	Sediment
Client Sample ID:	SB-15-05		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	81.5			60-125		%Rec	1	6/23/2015 5:20 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	140		1.0	3.7	3.7	mg/Kg-dry	10	7/2/2015 2:27 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	0.96	U	0.48	0.96	0.96	mg/Kg-dry	1	6/18/2015 12:18 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	1,300	J	610	2,000	2,000	µg/Kg-dry	1	6/15/2015 10:30 AM
Barium	15,000		2,000	6,800	6,800	µg/Kg-dry	1	6/15/2015 10:30 AM
Cadmium	150		40	100	100	µg/Kg-dry	1	6/15/2015 10:30 AM
Chromium	4,400		91	300	300	µg/Kg-dry	1	6/15/2015 10:30 AM
Copper	2,200		600	2,000	2,000	µg/Kg-dry	1	6/15/2015 10:30 AM
Iron	3,800,000		51,000	170,000	170,000	µg/Kg-dry	10	6/15/2015 11:20 AM
Lead	2,200	J	1,200	3,900	3,900	µg/Kg-dry	1	6/15/2015 10:30 AM
Manganese	91,000		210	710	710	µg/Kg-dry	1	6/15/2015 10:30 AM
Nickel	3,400		740	2,400	2,400	µg/Kg-dry	1	6/15/2015 10:30 AM
Selenium	2,000	U	600	2,000	2,000	µg/Kg-dry	1	7/10/2015 12:33 PM
Silver	600	U	190	600	600	µg/Kg-dry	1	6/15/2015 10:30 AM
Zinc	1,700	U	520	1,700	1,700	µg/Kg-dry	1	6/15/2015 10:30 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	27		2.6	9.0	9.0	µg/Kg-dry	1	6/15/2015 4:56 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	14	U	4.1	14	14	µg/Kg-dry	1	6/29/2015 1:53 AM
Acenaphthene	14	U	4.0	14	14	µg/Kg-dry	1	6/29/2015 1:53 AM
Acenaphthylene	17	U	5.3	17	17	µg/Kg-dry	1	6/29/2015 1:53 AM
Anthracene	11	J	3.4	11	11	µg/Kg-dry	1	6/29/2015 1:53 AM
Benzo(a)anthracene	23		6.3	21	21	µg/Kg-dry	1	6/29/2015 1:53 AM
Benzo(a)pyrene	21	J	7.9	26	26	µg/Kg-dry	1	6/29/2015 1:53 AM
Benzo(b)fluoranthene	21	J	9.6	31	31	µg/Kg-dry	1	6/29/2015 1:53 AM
Benzo(g,h,i)perylene	20	U	6.2	20	20	µg/Kg-dry	1	6/29/2015 1:53 AM
Benzo(k)fluoranthene	8.6	J	7.2	24	24	µg/Kg-dry	1	6/29/2015 1:53 AM
Chrysene	18		4.4	14	14	µg/Kg-dry	1	6/29/2015 1:53 AM
Dibenzo(a,h)anthracene	31	U	9.4	31	31	µg/Kg-dry	1	6/29/2015 1:53 AM
Fluoranthene	44		5.9	20	20	µg/Kg-dry	1	6/29/2015 1:53 AM
Fluorene	26	U	7.9	26	26	µg/Kg-dry	1	6/29/2015 1:53 AM
Indeno(1,2,3-cd)pyrene	10	J	8.2	27	27	µg/Kg-dry	1	6/29/2015 1:53 AM
Naphthalene	16	U	4.7	16	16	µg/Kg-dry	1	6/29/2015 1:53 AM
Phenanthrene	29	J	9.7	33	33	µg/Kg-dry	1	6/29/2015 1:53 AM
Pyrene	30		7.4	24	24	µg/Kg-dry	1	6/29/2015 1:53 AM
Surr: 2-Fluorobiphenyl	80.2			44-115		%Rec	1	6/29/2015 1:53 AM
Surr: Nitrobenzene-d5	80.7			37-122		%Rec	1	6/29/2015 1:53 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-005
Client Sample ID: SB-15-05

Collection Date: 6/9/2015 10:41:00 AM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	84.2			54-127		%Rec	1	6/29/2015 1:53 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	99		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	98		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	68		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	12		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	7.0		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	7.0		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.10		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	0.20		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	1.7		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	86		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	12		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	22.4					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.69						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	400		0.80	2.7	2.7	mg/Kg-dry	1	7/1/2015 2:27 PM
Nitrogen, Ammonia	50		0.88	3.0	3.0	mg/Kg-dry	1	6/26/2015 4:29 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	31		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	69		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	1.4		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	6,900		240	330	650	mg/Kg-dry	22.522 52252	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	30,000		750	2,500	2,500	mg/Kg-dry	1	6/29/2015 2:59 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-006
Client Sample ID: SB-15-06

Collection Date: 6/9/2015 11:08:00 AM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 47.578					deg min		
Longitude	-087 18.740					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	370		79	280	280	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	3.0	U	0.90	3.0	3.0	µg/Kg-dry	1	7/6/2015 11:59 PM
4,4'-DDE	1.8	U	0.52	1.8	1.8	µg/Kg-dry	1	7/6/2015 11:59 PM
4,4'-DDT	2.0	U	0.58	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:59 PM
Aldrin	1.8	U	0.56	1.8	1.8	µg/Kg-dry	1	7/6/2015 11:59 PM
alpha-BHC	1.7	U	0.48	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:59 PM
alpha-Chlordane	2.0	U	0.62	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:59 PM
beta-BHC	2.0	U	0.59	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:59 PM
Chlordane (Technical)	19	U	5.8	19	19	µg/Kg-dry	1	7/6/2015 11:59 PM
delta-BHC	1.7	U	0.48	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:59 PM
Dieldrin	2.0	U	0.60	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:59 PM
Endosulfan I	2.1	U	0.62	2.1	2.1	µg/Kg-dry	1	7/6/2015 11:59 PM
Endosulfan II	2.0	U	0.62	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:59 PM
Endosulfan sulfate	2.1	U	0.62	2.1	2.1	µg/Kg-dry	1	7/6/2015 11:59 PM
Endrin	2.1	U	0.63	2.1	2.1	µg/Kg-dry	1	7/6/2015 11:59 PM
Endrin aldehyde	2.1	U	0.65	2.1	2.1	µg/Kg-dry	1	7/6/2015 11:59 PM
Endrin ketone	2.0	U	0.60	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:59 PM
gamma-BHC	1.7	U	0.50	1.7	1.7	µg/Kg-dry	1	7/6/2015 11:59 PM
gamma-Chlordane	2.0	U	0.62	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:59 PM
Heptachlor	2.0	U	0.60	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:59 PM
Heptachlor epoxide	2.0	U	0.61	2.0	2.0	µg/Kg-dry	1	7/6/2015 11:59 PM
Methoxychlor	2.1	U	0.63	2.1	2.1	µg/Kg-dry	1	7/6/2015 11:59 PM
Toxaphene	28	U	8.3	28	28	µg/Kg-dry	1	7/6/2015 11:59 PM
Surr: Decachlorobiphenyl	92.3			55-130		%Rec	1	7/6/2015 11:59 PM
Surr: Tetrachloro-m-xylene	76.8			42-129		%Rec	1	7/6/2015 11:59 PM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	3.3	U	0.99	3.3	3.3	µg/Kg-dry	1	6/23/2015 5:44 PM
Aroclor 1221	3.3	U	0.99	3.3	3.3	µg/Kg-dry	1	6/23/2015 5:44 PM
Aroclor 1232	3.3	U	0.99	3.3	3.3	µg/Kg-dry	1	6/23/2015 5:44 PM
Aroclor 1242	3.3	U	0.99	3.3	3.3	µg/Kg-dry	1	6/23/2015 5:44 PM
Aroclor 1248	3.3	U	0.99	3.3	3.3	µg/Kg-dry	1	6/23/2015 5:44 PM
Aroclor 1254	3.3	U	0.99	3.3	3.3	µg/Kg-dry	1	6/23/2015 5:44 PM
Aroclor 1260	3.3	U	0.83	3.3	3.3	µg/Kg-dry	1	6/23/2015 5:44 PM
Aroclor 1262	3.3	U	0.99	3.3	3.3	µg/Kg-dry	1	6/23/2015 5:44 PM
Aroclor 1268	3.3	U	0.99	3.3	3.3	µg/Kg-dry	1	6/23/2015 5:44 PM
Total PCBs	3.3	U	0.99	3.3	3.3	µg/Kg-dry	1	6/23/2015 5:44 PM
Surr: Tetrachloro-m-xylene	95.7			44-130		%Rec	1	6/23/2015 5:44 PM

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-006
Client Sample ID: SB-15-06

Collection Date: 6/9/2015 11:08:00 AM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	79.5			60-125		%Rec	1	6/23/2015 5:44 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	320		1.1	4.1	4.1	mg/Kg-dry	10	7/2/2015 2:27 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	1.1	U	0.55	1.1	1.1	mg/Kg-dry	1	6/18/2015 12:18 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	2,100	J	670	2,200	2,200	µg/Kg-dry	1	6/15/2015 10:31 AM
Barium	17,000		2,200	7,400	7,400	µg/Kg-dry	1	6/15/2015 10:31 AM
Cadmium	190		44	110	110	µg/Kg-dry	1	6/15/2015 10:31 AM
Chromium	5,800		99	330	330	µg/Kg-dry	1	6/15/2015 10:31 AM
Copper	3,500		660	2,200	2,200	µg/Kg-dry	1	6/15/2015 10:31 AM
Iron	4,700,000		56,000	190,000	190,000	µg/Kg-dry	10	6/15/2015 11:21 AM
Lead	2,100	J	1,300	4,300	4,300	µg/Kg-dry	1	6/15/2015 10:31 AM
Manganese	150,000		230	770	770	µg/Kg-dry	1	6/15/2015 10:31 AM
Nickel	4,700		800	2,600	2,600	µg/Kg-dry	1	6/15/2015 10:31 AM
Selenium	2,400	U	710	2,400	2,400	µg/Kg-dry	1	7/10/2015 12:34 PM
Silver	660	U	210	660	660	µg/Kg-dry	1	6/15/2015 10:31 AM
Zinc	1,300	J	570	1,900	1,900	µg/Kg-dry	1	6/15/2015 10:31 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	15		2.3	7.8	7.8	µg/Kg-dry	1	6/15/2015 4:58 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	16	U	4.8	16	16	µg/Kg-dry	1	6/29/2015 2:18 AM
Acenaphthene	16	U	4.6	16	16	µg/Kg-dry	1	6/29/2015 2:18 AM
Acenaphthylene	20	U	6.1	20	20	µg/Kg-dry	1	6/29/2015 2:18 AM
Anthracene	13	U	4.0	13	13	µg/Kg-dry	1	6/29/2015 2:18 AM
Benzo(a)anthracene	9.9	J	7.2	25	25	µg/Kg-dry	1	6/29/2015 2:18 AM
Benzo(a)pyrene	12	J	9.1	30	30	µg/Kg-dry	1	6/29/2015 2:18 AM
Benzo(b)fluoranthene	36	U	11	36	36	µg/Kg-dry	1	6/29/2015 2:18 AM
Benzo(g,h,i)perylene	23	U	7.1	23	23	µg/Kg-dry	1	6/29/2015 2:18 AM
Benzo(k)fluoranthene	28	U	8.2	28	28	µg/Kg-dry	1	6/29/2015 2:18 AM
Chrysene	6.0	J	5.1	16	16	µg/Kg-dry	1	6/29/2015 2:18 AM
Dibenzo(a,h)anthracene	36	U	11	36	36	µg/Kg-dry	1	6/29/2015 2:18 AM
Fluoranthene	14	J	6.8	23	23	µg/Kg-dry	1	6/29/2015 2:18 AM
Fluorene	30	U	9.1	30	30	µg/Kg-dry	1	6/29/2015 2:18 AM
Indeno(1,2,3-cd)pyrene	31	U	9.4	31	31	µg/Kg-dry	1	6/29/2015 2:18 AM
Naphthalene	18	U	5.4	18	18	µg/Kg-dry	1	6/29/2015 2:18 AM
Phenanthrene	38	U	11	38	38	µg/Kg-dry	1	6/29/2015 2:18 AM
Pyrene	9.9	J	8.6	28	28	µg/Kg-dry	1	6/29/2015 2:18 AM
Surr: 2-Fluorobiphenyl	82.0			44-115		%Rec	1	6/29/2015 2:18 AM
Surr: Nitrobenzene-d5	83.0			37-122		%Rec	1	6/29/2015 2:18 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-006
Client Sample ID: SB-15-06

Collection Date: 6/9/2015 11:08:00 AM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	88.3			54-127		%Rec	1	6/29/2015 2:18 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	93		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	88		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	84		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	62		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	11		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	5.6		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	5.6		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.50		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	6.1		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	9.7		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	73		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	11		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	20.4					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.45						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	2,500		0.94	3.2	3.2	mg/Kg-dry	1	7/1/2015 2:30 PM
Nitrogen, Ammonia	940		0.98	3.3	3.3	mg/Kg-dry	1	6/26/2015 4:33 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	41		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	59		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	3.8		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	27,000		280	390	790	mg/Kg-dry	23.364 48598	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	33,000		800	2,600	2,600	mg/Kg-dry	1	6/29/2015 3:32 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-007
Client Sample ID: SB-15-07

Collection Date: 6/9/2015 12:50:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 48.549					deg min		
Longitude	-087 20.148					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	330		84	300	300	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	3.2	U	0.96	3.2	3.2	µg/Kg-dry	1	7/7/2015 12:24 AM
4,4'-DDE	1.9	U	0.56	1.9	1.9	µg/Kg-dry	1	7/7/2015 12:24 AM
4,4'-DDT	2.1	U	0.62	2.1	2.1	µg/Kg-dry	1	7/7/2015 12:24 AM
Aldrin	1.9	U	0.60	1.9	1.9	µg/Kg-dry	1	7/7/2015 12:24 AM
alpha-BHC	1.8	U	0.52	1.8	1.8	µg/Kg-dry	1	7/7/2015 12:24 AM
alpha-Chlordane	2.1	U	0.66	2.1	2.1	µg/Kg-dry	1	7/7/2015 12:24 AM
beta-BHC	2.1	U	0.63	2.1	2.1	µg/Kg-dry	1	7/7/2015 12:24 AM
Chlordane (Technical)	21	U	6.2	21	21	µg/Kg-dry	1	7/7/2015 12:24 AM
delta-BHC	1.8	U	0.52	1.8	1.8	µg/Kg-dry	1	7/7/2015 12:24 AM
Dieldrin	2.1	U	0.64	2.1	2.1	µg/Kg-dry	1	7/7/2015 12:24 AM
Endosulfan I	2.3	U	0.66	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:24 AM
Endosulfan II	2.1	U	0.66	2.1	2.1	µg/Kg-dry	1	7/7/2015 12:24 AM
Endosulfan sulfate	2.3	U	0.66	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:24 AM
Endrin	2.3	U	0.68	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:24 AM
Endrin aldehyde	2.3	U	0.69	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:24 AM
Endrin ketone	2.1	U	0.65	2.1	2.1	µg/Kg-dry	1	7/7/2015 12:24 AM
gamma-BHC	1.8	U	0.54	1.8	1.8	µg/Kg-dry	1	7/7/2015 12:24 AM
gamma-Chlordane	2.1	U	0.66	2.1	2.1	µg/Kg-dry	1	7/7/2015 12:24 AM
Heptachlor	2.1	U	0.65	2.1	2.1	µg/Kg-dry	1	7/7/2015 12:24 AM
Heptachlor epoxide	2.1	U	0.65	2.1	2.1	µg/Kg-dry	1	7/7/2015 12:24 AM
Methoxychlor	2.3	U	0.68	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:24 AM
Toxaphene	30	U	8.9	30	30	µg/Kg-dry	1	7/7/2015 12:24 AM
Surr: Decachlorobiphenyl	99.1			55-130		%Rec	1	7/7/2015 12:24 AM
Surr: Tetrachloro-m-xylene	78.3			42-129		%Rec	1	7/7/2015 12:24 AM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	3.5	U	1.1	3.5	3.5	µg/Kg-dry	1	6/23/2015 6:08 PM
Aroclor 1221	3.5	U	1.1	3.5	3.5	µg/Kg-dry	1	6/23/2015 6:08 PM
Aroclor 1232	3.5	U	1.1	3.5	3.5	µg/Kg-dry	1	6/23/2015 6:08 PM
Aroclor 1242	3.5	U	1.1	3.5	3.5	µg/Kg-dry	1	6/23/2015 6:08 PM
Aroclor 1248	3.5	U	1.1	3.5	3.5	µg/Kg-dry	1	6/23/2015 6:08 PM
Aroclor 1254	3.5	U	1.1	3.5	3.5	µg/Kg-dry	1	6/23/2015 6:08 PM
Aroclor 1260	3.5	U	0.88	3.5	3.5	µg/Kg-dry	1	6/23/2015 6:08 PM
Aroclor 1262	3.5	U	1.1	3.5	3.5	µg/Kg-dry	1	6/23/2015 6:08 PM
Aroclor 1268	3.5	U	1.1	3.5	3.5	µg/Kg-dry	1	6/23/2015 6:08 PM
Total PCBs	3.5	U	1.1	3.5	3.5	µg/Kg-dry	1	6/23/2015 6:08 PM
Surr: Tetrachloro-m-xylene	94.7			44-130		%Rec	1	6/23/2015 6:08 PM

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-007
Client Sample ID: SB-15-07

Collection Date: 6/9/2015 12:50:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	84.7			60-125		%Rec	1	6/23/2015 6:08 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	270		1.2	4.4	4.4	mg/Kg-dry	10	7/2/2015 2:28 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	1.2	U	0.58	1.2	1.2	mg/Kg-dry	1	6/18/2015 12:18 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	1,500	J	740	2,400	2,400	µg/Kg-dry	1	6/15/2015 10:33 AM
Barium	15,000		2,400	8,200	8,200	µg/Kg-dry	1	6/15/2015 10:33 AM
Cadmium	220		49	120	120	µg/Kg-dry	1	6/15/2015 10:33 AM
Chromium	7,200		110	370	370	µg/Kg-dry	1	6/15/2015 10:33 AM
Copper	4,000		730	2,400	2,400	µg/Kg-dry	1	6/15/2015 10:33 AM
Iron	4,800,000		62,000	210,000	210,000	µg/Kg-dry	10	6/15/2015 11:23 AM
Lead	5,000		1,500	4,800	4,800	µg/Kg-dry	1	6/15/2015 10:33 AM
Manganese	120,000		260	850	850	µg/Kg-dry	1	6/15/2015 10:33 AM
Nickel	5,200		890	2,900	2,900	µg/Kg-dry	1	6/15/2015 10:33 AM
Selenium	2,600	U	780	2,600	2,600	µg/Kg-dry	1	7/10/2015 12:35 PM
Silver	730	U	230	730	730	µg/Kg-dry	1	6/15/2015 10:33 AM
Zinc	2,700		630	2,100	2,100	µg/Kg-dry	1	6/15/2015 10:33 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	33		3.3	11	11	µg/Kg-dry	1	6/15/2015 4:59 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	17	U	5.2	17	17	µg/Kg-dry	1	6/29/2015 2:44 AM
Acenaphthene	17	U	5.0	17	17	µg/Kg-dry	1	6/29/2015 2:44 AM
Acenaphthylene	21	U	6.6	21	21	µg/Kg-dry	1	6/29/2015 2:44 AM
Anthracene	6.5	J	4.3	14	14	µg/Kg-dry	1	6/29/2015 2:44 AM
Benzo(a)anthracene	22	J	7.8	27	27	µg/Kg-dry	1	6/29/2015 2:44 AM
Benzo(a)pyrene	24	J	9.8	32	32	µg/Kg-dry	1	6/29/2015 2:44 AM
Benzo(b)fluoranthene	26	J	12	39	39	µg/Kg-dry	1	6/29/2015 2:44 AM
Benzo(g,h,i)perylene	8.9	J	7.6	25	25	µg/Kg-dry	1	6/29/2015 2:44 AM
Benzo(k)fluoranthene	30	U	8.9	30	30	µg/Kg-dry	1	6/29/2015 2:44 AM
Chrysene	22		5.5	18	18	µg/Kg-dry	1	6/29/2015 2:44 AM
Dibenzo(a,h)anthracene	39	U	12	39	39	µg/Kg-dry	1	6/29/2015 2:44 AM
Fluoranthene	46		7.3	25	25	µg/Kg-dry	1	6/29/2015 2:44 AM
Fluorene	32	U	9.8	32	32	µg/Kg-dry	1	6/29/2015 2:44 AM
Indeno(1,2,3-cd)pyrene	12	J	10	34	34	µg/Kg-dry	1	6/29/2015 2:44 AM
Naphthalene	20	U	5.9	20	20	µg/Kg-dry	1	6/29/2015 2:44 AM
Phenanthrene	27	J	12	41	41	µg/Kg-dry	1	6/29/2015 2:44 AM
Pyrene	33		9.2	30	30	µg/Kg-dry	1	6/29/2015 2:44 AM
Surr: 2-Fluorobiphenyl	98.3			44-115		%Rec	1	6/29/2015 2:44 AM
Surr: Nitrobenzene-d5	98.7			37-122		%Rec	1	6/29/2015 2:44 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-007
Client Sample ID: SB-15-07

Collection Date: 6/9/2015 12:50:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	105			54-127		%Rec	1	6/29/2015 2:44 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	99		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	97		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	94		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	66		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	19		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	12		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	12		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	1.0		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	5.1		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	75		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	19		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	23.7					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.85						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	2,000		1.0	3.5	3.5	mg/Kg-dry	1	7/1/2015 2:34 PM
Nitrogen, Ammonia	460		1.0	3.5	3.5	mg/Kg-dry	1	6/26/2015 4:34 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	44		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	56		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	3.1		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	27,000		290	410	820	mg/Kg-dry	22.935 77982	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	39,000		800	2,600	2,600	mg/Kg-dry	1	6/29/2015 3:48 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 1:35:00 PM
Project:	Sturgeon Bay		
Lab ID:	1506418-008	**Matrix:**	Sediment
Client Sample ID:	SB-15-08		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 48.596					deg min		
Longitude	-087 20.215					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	360		93	330	330	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	3.5	U	1.1	3.5	3.5	µg/Kg-dry	1	7/7/2015 12:49 AM
4,4'-DDE	2.1	U	0.61	2.1	2.1	µg/Kg-dry	1	7/7/2015 12:49 AM
4,4'-DDT	2.3	U	0.68	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:49 AM
Aldrin	2.1	U	0.65	2.1	2.1	µg/Kg-dry	1	7/7/2015 12:49 AM
alpha-BHC	1.9	U	0.57	1.9	1.9	µg/Kg-dry	1	7/7/2015 12:49 AM
alpha-Chlordane	2.3	U	0.72	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:49 AM
beta-BHC	2.3	U	0.69	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:49 AM
Chlordane (Technical)	23	U	6.8	23	23	µg/Kg-dry	1	7/7/2015 12:49 AM
delta-BHC	1.9	U	0.57	1.9	1.9	µg/Kg-dry	1	7/7/2015 12:49 AM
Dieldrin	2.3	U	0.70	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:49 AM
Endosulfan I	2.5	U	0.73	2.5	2.5	µg/Kg-dry	1	7/7/2015 12:49 AM
Endosulfan II	2.3	U	0.72	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:49 AM
Endosulfan sulfate	2.5	U	0.73	2.5	2.5	µg/Kg-dry	1	7/7/2015 12:49 AM
Endrin	2.5	U	0.74	2.5	2.5	µg/Kg-dry	1	7/7/2015 12:49 AM
Endrin aldehyde	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	7/7/2015 12:49 AM
Endrin ketone	2.3	U	0.71	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:49 AM
gamma-BHC	1.9	U	0.59	1.9	1.9	µg/Kg-dry	1	7/7/2015 12:49 AM
gamma-Chlordane	2.3	U	0.73	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:49 AM
Heptachlor	2.3	U	0.71	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:49 AM
Heptachlor epoxide	2.3	U	0.72	2.3	2.3	µg/Kg-dry	1	7/7/2015 12:49 AM
Methoxychlor	2.5	U	0.74	2.5	2.5	µg/Kg-dry	1	7/7/2015 12:49 AM
Toxaphene	32	U	9.7	32	32	µg/Kg-dry	1	7/7/2015 12:49 AM
Surr: Decachlorobiphenyl	96.2			55-130		%Rec	1	7/7/2015 12:49 AM
Surr: Tetrachloro-m-xylene	72.9			42-129		%Rec	1	7/7/2015 12:49 AM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	3.9	U	1.2	3.9	3.9	µg/Kg-dry	1	6/23/2015 6:33 PM
Aroclor 1221	3.9	U	1.2	3.9	3.9	µg/Kg-dry	1	6/23/2015 6:33 PM
Aroclor 1232	3.9	U	1.2	3.9	3.9	µg/Kg-dry	1	6/23/2015 6:33 PM
Aroclor 1242	3.9	U	1.2	3.9	3.9	µg/Kg-dry	1	6/23/2015 6:33 PM
Aroclor 1248	3.9	U	1.2	3.9	3.9	µg/Kg-dry	1	6/23/2015 6:33 PM
Aroclor 1254	3.9	U	1.2	3.9	3.9	µg/Kg-dry	1	6/23/2015 6:33 PM
Aroclor 1260	3.9	U	0.97	3.9	3.9	µg/Kg-dry	1	6/23/2015 6:33 PM
Aroclor 1262	3.9	U	1.2	3.9	3.9	µg/Kg-dry	1	6/23/2015 6:33 PM
Aroclor 1268	3.9	U	1.2	3.9	3.9	µg/Kg-dry	1	6/23/2015 6:33 PM
Total PCBs	3.9	U	1.2	3.9	3.9	µg/Kg-dry	1	6/23/2015 6:33 PM
Surr: Tetrachloro-m-xylene	90.6			44-130		%Rec	1	6/23/2015 6:33 PM

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-008
Client Sample ID: SB-15-08

Collection Date: 6/9/2015 1:35:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	85.0			60-125		%Rec	1	6/23/2015 6:33 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	370		1.4	5.0	5.0	mg/Kg-dry	10	7/2/2015 2:28 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	1.3	U	0.65	1.3	1.3	mg/Kg-dry	1	6/18/2015 12:18 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	1,900	J	1,200	3,900	3,900	µg/Kg-dry	1	6/15/2015 10:34 AM
Barium	19,000		3,900	13,000	13,000	µg/Kg-dry	1	6/15/2015 10:34 AM
Cadmium	280		79	200	200	µg/Kg-dry	1	6/15/2015 10:34 AM
Chromium	8,200		180	590	590	µg/Kg-dry	1	6/15/2015 10:34 AM
Copper	4,400		1,200	3,900	3,900	µg/Kg-dry	1	6/15/2015 10:34 AM
Iron	5,600,000		100,000	330,000	330,000	µg/Kg-dry	10	6/15/2015 11:24 AM
Lead	5,700	J	2,400	7,700	7,700	µg/Kg-dry	1	6/15/2015 10:34 AM
Manganese	150,000		410	1,400	1,400	µg/Kg-dry	1	6/15/2015 10:34 AM
Nickel	6,100		1,400	4,700	4,700	µg/Kg-dry	1	6/15/2015 10:34 AM
Selenium	2,900	U	860	2,900	2,900	µg/Kg-dry	1	7/10/2015 12:37 PM
Silver	1,200	U	370	1,200	1,200	µg/Kg-dry	1	6/15/2015 10:34 AM
Zinc	4,700		1,000	3,300	3,300	µg/Kg-dry	1	6/15/2015 10:34 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	36		2.9	10	10	µg/Kg-dry	1	6/15/2015 5:01 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	19	U	5.7	19	19	µg/Kg-dry	1	6/29/2015 3:09 AM
Acenaphthene	19	U	5.5	19	19	µg/Kg-dry	1	6/29/2015 3:09 AM
Acenaphthylene	23	U	7.2	23	23	µg/Kg-dry	1	6/29/2015 3:09 AM
Anthracene	16	U	4.7	16	16	µg/Kg-dry	1	6/29/2015 3:09 AM
Benzo(a)anthracene	23	J	8.6	29	29	µg/Kg-dry	1	6/29/2015 3:09 AM
Benzo(a)pyrene	26	J	11	35	35	µg/Kg-dry	1	6/29/2015 3:09 AM
Benzo(b)fluoranthene	29	J	13	43	43	µg/Kg-dry	1	6/29/2015 3:09 AM
Benzo(g,h,i)perylene	8.4	J	8.4	27	27	µg/Kg-dry	1	6/29/2015 3:09 AM
Benzo(k)fluoranthene	12	J	9.7	33	33	µg/Kg-dry	1	6/29/2015 3:09 AM
Chrysene	23		6.0	19	19	µg/Kg-dry	1	6/29/2015 3:09 AM
Dibenzo(a,h)anthracene	43	U	13	43	43	µg/Kg-dry	1	6/29/2015 3:09 AM
Fluoranthene	69		8.0	27	27	µg/Kg-dry	1	6/29/2015 3:09 AM
Fluorene	35	U	11	35	35	µg/Kg-dry	1	6/29/2015 3:09 AM
Indeno(1,2,3-cd)pyrene	15	J	11	37	37	µg/Kg-dry	1	6/29/2015 3:09 AM
Naphthalene	21	U	6.4	21	21	µg/Kg-dry	1	6/29/2015 3:09 AM
Phenanthrene	24	J	13	45	45	µg/Kg-dry	1	6/29/2015 3:09 AM
Pyrene	56		10	33	33	µg/Kg-dry	1	6/29/2015 3:09 AM
Surr: 2-Fluorobiphenyl	83.8			44-115		%Rec	1	6/29/2015 3:09 AM
Surr: Nitrobenzene-d5	83.7			37-122		%Rec	1	6/29/2015 3:09 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-008
Client Sample ID: SB-15-08

Collection Date: 6/9/2015 1:35:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	92.4			54-127		%Rec	1	6/29/2015 3:09 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	97		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	93		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	89		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	67		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	23		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	14		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	14		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.30		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	2.7		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	7.6		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	66		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	23		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	19.3					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.31						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	2,100		0.98	3.3	3.3	mg/Kg-dry	1	7/1/2015 2:36 PM
Nitrogen, Ammonia	660		1.2	4.2	4.2	mg/Kg-dry	1	6/26/2015 4:36 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	50		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	50		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	3.8		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	28,000		330	450	910	mg/Kg-dry	22.935 77982	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	46,000		730	2,400	2,400	mg/Kg-dry	1	6/29/2015 4:14 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 3:32:00 PM
Project:	Sturgeon Bay		
Lab ID:	1506418-009	**Matrix:**	Sediment
Client Sample ID:	SB-15-09		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 48.698					deg min		
Longitude	-087 20.359					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	190	J	98	350	350	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	3.7	U	1.1	3.7	3.7	µg/Kg-dry	1	7/7/2015 1:14 AM
4,4'-DDE	2.2	U	0.64	2.2	2.2	µg/Kg-dry	1	7/7/2015 1:14 AM
4,4'-DDT	2.4	U	0.72	2.4	2.4	µg/Kg-dry	1	7/7/2015 1:14 AM
Aldrin	2.2	U	0.69	2.2	2.2	µg/Kg-dry	1	7/7/2015 1:14 AM
alpha-BHC	2.0	U	0.60	2.0	2.0	µg/Kg-dry	1	7/7/2015 1:14 AM
alpha-Chlordane	2.4	U	0.76	2.4	2.4	µg/Kg-dry	1	7/7/2015 1:14 AM
beta-BHC	2.4	U	0.73	2.4	2.4	µg/Kg-dry	1	7/7/2015 1:14 AM
Chlordane (Technical)	24	U	7.1	24	24	µg/Kg-dry	1	7/7/2015 1:14 AM
delta-BHC	2.0	U	0.60	2.0	2.0	µg/Kg-dry	1	7/7/2015 1:14 AM
Dieldrin	2.4	U	0.74	2.4	2.4	µg/Kg-dry	1	7/7/2015 1:14 AM
Endosulfan I	2.7	U	0.77	2.7	2.7	µg/Kg-dry	1	7/7/2015 1:14 AM
Endosulfan II	2.4	U	0.76	2.4	2.4	µg/Kg-dry	1	7/7/2015 1:14 AM
Endosulfan sulfate	2.7	U	0.77	2.7	2.7	µg/Kg-dry	1	7/7/2015 1:14 AM
Endrin	2.7	U	0.78	2.7	2.7	µg/Kg-dry	1	7/7/2015 1:14 AM
Endrin aldehyde	2.7	U	0.80	2.7	2.7	µg/Kg-dry	1	7/7/2015 1:14 AM
Endrin ketone	2.4	U	0.75	2.4	2.4	µg/Kg-dry	1	7/7/2015 1:14 AM
gamma-BHC	2.0	U	0.62	2.0	2.0	µg/Kg-dry	1	7/7/2015 1:14 AM
gamma-Chlordane	2.4	U	0.76	2.4	2.4	µg/Kg-dry	1	7/7/2015 1:14 AM
Heptachlor	2.4	U	0.75	2.4	2.4	µg/Kg-dry	1	7/7/2015 1:14 AM
Heptachlor epoxide	2.4	U	0.76	2.4	2.4	µg/Kg-dry	1	7/7/2015 1:14 AM
Methoxychlor	2.7	U	0.78	2.7	2.7	µg/Kg-dry	1	7/7/2015 1:14 AM
Toxaphene	34	U	10	34	34	µg/Kg-dry	1	7/7/2015 1:14 AM
Surr: Decachlorobiphenyl	114			55-130		%Rec	1	7/7/2015 1:14 AM
Surr: Tetrachloro-m-xylene	88.3			42-129		%Rec	1	7/7/2015 1:14 AM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	4.1	U	1.2	4.1	4.1	µg/Kg-dry	1	6/23/2015 7:46 PM
Aroclor 1221	4.1	U	1.2	4.1	4.1	µg/Kg-dry	1	6/23/2015 7:46 PM
Aroclor 1232	4.1	U	1.2	4.1	4.1	µg/Kg-dry	1	6/23/2015 7:46 PM
Aroclor 1242	4.1	U	1.2	4.1	4.1	µg/Kg-dry	1	6/23/2015 7:46 PM
Aroclor 1248	4.1	U	1.2	4.1	4.1	µg/Kg-dry	1	6/23/2015 7:46 PM
Aroclor 1254	4.1	U	1.2	4.1	4.1	µg/Kg-dry	1	6/23/2015 7:46 PM
Aroclor 1260	4.1	U	1.0	4.1	4.1	µg/Kg-dry	1	6/23/2015 7:46 PM
Aroclor 1262	4.1	U	1.2	4.1	4.1	µg/Kg-dry	1	6/23/2015 7:46 PM
Aroclor 1268	4.1	U	1.2	4.1	4.1	µg/Kg-dry	1	6/23/2015 7:46 PM
Total PCBs	4.1	U	1.2	4.1	4.1	µg/Kg-dry	1	6/23/2015 7:46 PM
Surr: Tetrachloro-m-xylene	97.2			44-130		%Rec	1	6/23/2015 7:46 PM

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-009
Client Sample ID: SB-15-09

Collection Date: 6/9/2015 3:32:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	92.1			60-125		%Rec	1	6/23/2015 7:46 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	260		1.4	5.1	5.1	mg/Kg-dry	10	7/2/2015 2:28 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	1.4	U	0.68	1.4	1.4	mg/Kg-dry	1	6/18/2015 12:18 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	3,700	U	1,100	3,700	3,700	µg/Kg-dry	1	6/15/2015 10:35 AM
Barium	27,000		3,700	12,000	12,000	µg/Kg-dry	1	6/15/2015 10:35 AM
Cadmium	580		74	180	180	µg/Kg-dry	1	6/15/2015 10:35 AM
Chromium	11,000		170	550	550	µg/Kg-dry	1	6/15/2015 10:35 AM
Copper	8,000		1,100	3,700	3,700	µg/Kg-dry	1	6/15/2015 10:35 AM
Iron	6,800,000		94,000	310,000	310,000	µg/Kg-dry	10	6/15/2015 11:26 AM
Lead	10,000		2,200	7,200	7,200	µg/Kg-dry	1	6/15/2015 10:35 AM
Manganese	190,000		390	1,300	1,300	µg/Kg-dry	1	6/15/2015 10:35 AM
Nickel	8,300		1,300	4,400	4,400	µg/Kg-dry	1	6/15/2015 10:35 AM
Selenium	3,000	U	890	3,000	3,000	µg/Kg-dry	1	7/10/2015 12:38 PM
Silver	1,100	U	350	1,100	1,100	µg/Kg-dry	1	6/15/2015 10:35 AM
Zinc	16,000		960	3,100	3,100	µg/Kg-dry	1	6/15/2015 10:35 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	110		4.1	14	14	µg/Kg-dry	1	6/15/2015 5:03 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	10	J	5.9	20	20	µg/Kg-dry	1	6/29/2015 3:35 AM
Acenaphthene	19	U	5.7	19	19	µg/Kg-dry	1	6/29/2015 3:35 AM
Acenaphthylene	25	U	7.6	25	25	µg/Kg-dry	1	6/29/2015 3:35 AM
Anthracene	12	J	4.9	16	16	µg/Kg-dry	1	6/29/2015 3:35 AM
Benzo(a)anthracene	36		9.0	31	31	µg/Kg-dry	1	6/29/2015 3:35 AM
Benzo(a)pyrene	42		11	37	37	µg/Kg-dry	1	6/29/2015 3:35 AM
Benzo(b)fluoranthene	55		14	45	45	µg/Kg-dry	1	6/29/2015 3:35 AM
Benzo(g,h,i)perylene	15	J	8.8	29	29	µg/Kg-dry	1	6/29/2015 3:35 AM
Benzo(k)fluoranthene	18	J	10	35	35	µg/Kg-dry	1	6/29/2015 3:35 AM
Chrysene	40		6.4	21	21	µg/Kg-dry	1	6/29/2015 3:35 AM
Dibenzo(a,h)anthracene	45	U	14	45	45	µg/Kg-dry	1	6/29/2015 3:35 AM
Fluoranthene	100		8.4	29	29	µg/Kg-dry	1	6/29/2015 3:35 AM
Fluorene	37	U	11	37	37	µg/Kg-dry	1	6/29/2015 3:35 AM
Indeno(1,2,3-cd)pyrene	21	J	12	39	39	µg/Kg-dry	1	6/29/2015 3:35 AM
Naphthalene	6.8	J	6.8	23	23	µg/Kg-dry	1	6/29/2015 3:35 AM
Phenanthrene	62		14	47	47	µg/Kg-dry	1	6/29/2015 3:35 AM
Pyrene	79		11	35	35	µg/Kg-dry	1	6/29/2015 3:35 AM
Surr: 2-Fluorobiphenyl	83.5			44-115		%Rec	1	6/29/2015 3:35 AM
Surr: Nitrobenzene-d5	84.2			37-122		%Rec	1	6/29/2015 3:35 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-009
Client Sample ID: SB-15-09

Collection Date: 6/9/2015 3:32:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	90.4			54-127		%Rec	1	6/29/2015 3:35 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	94		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	86		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	81		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	67		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	28		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	7.3		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	7.3		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.50		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	5.1		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	14		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	53		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	28		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	21.6					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.59						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	2,200		1.1	3.6	3.6	mg/Kg-dry	1	7/1/2015 2:38 PM
Nitrogen, Ammonia	290		1.3	4.3	4.3	mg/Kg-dry	1	6/26/2015 4:38 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	52		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	48		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	4.5		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	38,000		340	470	940	mg/Kg-dry	22.522 52252	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	53,000		870	2,900	2,900	mg/Kg-dry	1	6/29/2015 4:30 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-010
Client Sample ID: SB-15-10

Collection Date: 6/9/2015 2:39:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 48.897					deg min		
Longitude	-087 20.659					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	260	J	100	360	360	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	3.8	U	1.1	3.8	3.8	µg/Kg-dry	1	7/7/2015 1:39 AM
4,4'-DDE	2.3	U	0.67	2.3	2.3	µg/Kg-dry	1	7/7/2015 1:39 AM
4,4'-DDT	2.5	U	0.74	2.5	2.5	µg/Kg-dry	1	7/7/2015 1:39 AM
Aldrin	2.3	U	0.71	2.3	2.3	µg/Kg-dry	1	7/7/2015 1:39 AM
alpha-BHC	2.1	U	0.62	2.1	2.1	µg/Kg-dry	1	7/7/2015 1:39 AM
alpha-Chlordane	2.5	U	0.79	2.5	2.5	µg/Kg-dry	1	7/7/2015 1:39 AM
beta-BHC	2.5	U	0.75	2.5	2.5	µg/Kg-dry	1	7/7/2015 1:39 AM
Chlordane (Technical)	24	U	7.3	24	24	µg/Kg-dry	1	7/7/2015 1:39 AM
delta-BHC	2.1	U	0.62	2.1	2.1	µg/Kg-dry	1	7/7/2015 1:39 AM
Dieldrin	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	7/7/2015 1:39 AM
Endosulfan I	2.7	U	0.79	2.7	2.7	µg/Kg-dry	1	7/7/2015 1:39 AM
Endosulfan II	2.5	U	0.78	2.5	2.5	µg/Kg-dry	1	7/7/2015 1:39 AM
Endosulfan sulfate	2.7	U	0.79	2.7	2.7	µg/Kg-dry	1	7/7/2015 1:39 AM
Endrin	2.7	U	0.81	2.7	2.7	µg/Kg-dry	1	7/7/2015 1:39 AM
Endrin aldehyde	2.7	U	0.82	2.7	2.7	µg/Kg-dry	1	7/7/2015 1:39 AM
Endrin ketone	2.5	U	0.77	2.5	2.5	µg/Kg-dry	1	7/7/2015 1:39 AM
gamma-BHC	2.1	U	0.64	2.1	2.1	µg/Kg-dry	1	7/7/2015 1:39 AM
gamma-Chlordane	2.5	U	0.79	2.5	2.5	µg/Kg-dry	1	7/7/2015 1:39 AM
Heptachlor	2.5	U	0.77	2.5	2.5	µg/Kg-dry	1	7/7/2015 1:39 AM
Heptachlor epoxide	2.5	U	0.78	2.5	2.5	µg/Kg-dry	1	7/7/2015 1:39 AM
Methoxychlor	2.7	U	0.81	2.7	2.7	µg/Kg-dry	1	7/7/2015 1:39 AM
Toxaphene	35	U	11	35	35	µg/Kg-dry	1	7/7/2015 1:39 AM
Surr: Decachlorobiphenyl	110			55-130		%Rec	1	7/7/2015 1:39 AM
Surr: Tetrachloro-m-xylene	92.8			42-129		%Rec	1	7/7/2015 1:39 AM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	4.2	U	1.3	4.2	4.2	µg/Kg-dry	1	6/23/2015 8:10 PM
Aroclor 1221	4.2	U	1.3	4.2	4.2	µg/Kg-dry	1	6/23/2015 8:10 PM
Aroclor 1232	4.2	U	1.3	4.2	4.2	µg/Kg-dry	1	6/23/2015 8:10 PM
Aroclor 1242	4.2	U	1.3	4.2	4.2	µg/Kg-dry	1	6/23/2015 8:10 PM
Aroclor 1248	4.2	U	1.3	4.2	4.2	µg/Kg-dry	1	6/23/2015 8:10 PM
Aroclor 1254	4.2	U	1.3	4.2	4.2	µg/Kg-dry	1	6/23/2015 8:10 PM
Aroclor 1260	4.2	U	1.1	4.2	4.2	µg/Kg-dry	1	6/23/2015 8:10 PM
Aroclor 1262	4.2	U	1.3	4.2	4.2	µg/Kg-dry	1	6/23/2015 8:10 PM
Aroclor 1268	4.2	U	1.3	4.2	4.2	µg/Kg-dry	1	6/23/2015 8:10 PM
Total PCBs	4.2	U	1.3	4.2	4.2	µg/Kg-dry	1	6/23/2015 8:10 PM
Surr: Tetrachloro-m-xylene	101			44-130		%Rec	1	6/23/2015 8:10 PM

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-010
Client Sample ID: SB-15-10

Collection Date: 6/9/2015 2:39:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	91.2			60-125		%Rec	1	6/23/2015 8:10 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	310		1.5	5.4	5.4	mg/Kg-dry	10	7/2/2015 2:28 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	1.4	U	0.71	1.4	1.4	mg/Kg-dry	1	6/18/2015 12:24 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	2,900	J	1,300	4,200	4,200	µg/Kg-dry	1	6/15/2015 10:37 AM
Barium	28,000		4,200	14,000	14,000	µg/Kg-dry	1	6/15/2015 10:37 AM
Cadmium	500		84	210	210	µg/Kg-dry	1	6/15/2015 10:37 AM
Chromium	12,000		190	630	630	µg/Kg-dry	1	6/15/2015 10:37 AM
Copper	9,200		1,300	4,200	4,200	µg/Kg-dry	1	6/15/2015 10:37 AM
Iron	7,300,000		110,000	360,000	360,000	µg/Kg-dry	10	6/15/2015 11:27 AM
Lead	11,000		2,500	8,200	8,200	µg/Kg-dry	1	6/15/2015 10:37 AM
Manganese	200,000		440	1,500	1,500	µg/Kg-dry	1	6/15/2015 10:37 AM
Nickel	8,800		1,500	5,100	5,100	µg/Kg-dry	1	6/15/2015 10:37 AM
Selenium	2,900	U	860	2,900	2,900	µg/Kg-dry	1	7/10/2015 12:40 PM
Silver	1,300	U	400	1,300	1,300	µg/Kg-dry	1	6/15/2015 10:37 AM
Zinc	16,000		1,100	3,600	3,600	µg/Kg-dry	1	6/15/2015 10:37 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	100		3.6	12	12	µg/Kg-dry	1	6/15/2015 5:04 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	6.3	J	6.1	21	21	µg/Kg-dry	1	6/29/2015 4:00 AM
Acenaphthene	20	U	5.9	20	20	µg/Kg-dry	1	6/29/2015 4:00 AM
Acenaphthylene	25	U	7.8	25	25	µg/Kg-dry	1	6/29/2015 4:00 AM
Anthracene	12	J	5.1	17	17	µg/Kg-dry	1	6/29/2015 4:00 AM
Benzo(a)anthracene	42		9.3	32	32	µg/Kg-dry	1	6/29/2015 4:00 AM
Benzo(a)pyrene	49		12	38	38	µg/Kg-dry	1	6/29/2015 4:00 AM
Benzo(b)fluoranthene	83		14	47	47	µg/Kg-dry	1	6/29/2015 4:00 AM
Benzo(g,h,i)perylene	18	J	9.1	30	30	µg/Kg-dry	1	6/29/2015 4:00 AM
Benzo(k)fluoranthene	22	J	11	36	36	µg/Kg-dry	1	6/29/2015 4:00 AM
Chrysene	54		6.6	21	21	µg/Kg-dry	1	6/29/2015 4:00 AM
Dibenzo(a,h)anthracene	47	U	14	47	47	µg/Kg-dry	1	6/29/2015 4:00 AM
Fluoranthene	110		8.7	30	30	µg/Kg-dry	1	6/29/2015 4:00 AM
Fluorene	38	U	12	38	38	µg/Kg-dry	1	6/29/2015 4:00 AM
Indeno(1,2,3-cd)pyrene	23	J	12	40	40	µg/Kg-dry	1	6/29/2015 4:00 AM
Naphthalene	23	U	7.0	23	23	µg/Kg-dry	1	6/29/2015 4:00 AM
Phenanthrene	49		14	49	49	µg/Kg-dry	1	6/29/2015 4:00 AM
Pyrene	86		11	36	36	µg/Kg-dry	1	6/29/2015 4:00 AM
Surr: 2-Fluorobiphenyl	76.8			44-115		%Rec	1	6/29/2015 4:00 AM
Surr: Nitrobenzene-d5	77.4			37-122		%Rec	1	6/29/2015 4:00 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-010
Client Sample ID: SB-15-10

Collection Date: 6/9/2015 2:39:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	85.0			54-127		%Rec	1	6/29/2015 4:00 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	95		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	89		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	84		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	74		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	38		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	22		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	22		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.50		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	4.9		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	11		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	46		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	38		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	15.2					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	1.83						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	2,100		1.1	3.7	3.7	mg/Kg-dry	1	7/1/2015 2:43 PM
Nitrogen, Ammonia	310		1.4	4.6	4.6	mg/Kg-dry	1	6/26/2015 4:41 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	54		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	46		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	8.5		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	19,000		390	540	1,100	mg/Kg-dry	24.875 62189	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	60,000		1,100	3,700	3,700	mg/Kg-dry	1	6/29/2015 4:45 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-011
Client Sample ID: SB-15-11

Collection Date: 6/8/2015 6:43:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 48.958					deg min		
Longitude	-087 20.781					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	260	J	110	380	380	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	4.1	U	1.2	4.1	4.1	µg/Kg-dry	1	7/7/2015 2:54 AM
4,4'-DDE	2.5	U	0.71	2.5	2.5	µg/Kg-dry	1	7/7/2015 2:54 AM
4,4'-DDT	2.7	U	0.79	2.7	2.7	µg/Kg-dry	1	7/7/2015 2:54 AM
Aldrin	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	7/7/2015 2:54 AM
alpha-BHC	2.3	U	0.66	2.3	2.3	µg/Kg-dry	1	7/7/2015 2:54 AM
alpha-Chlordane	2.7	U	0.84	2.7	2.7	µg/Kg-dry	1	7/7/2015 2:54 AM
beta-BHC	2.7	U	0.81	2.7	2.7	µg/Kg-dry	1	7/7/2015 2:54 AM
Chlordane (Technical)	26	U	7.9	26	26	µg/Kg-dry	1	7/7/2015 2:54 AM
delta-BHC	2.3	U	0.66	2.3	2.3	µg/Kg-dry	1	7/7/2015 2:54 AM
Dieldrin	2.7	U	0.81	2.7	2.7	µg/Kg-dry	1	7/7/2015 2:54 AM
Endosulfan I	2.9	U	0.85	2.9	2.9	µg/Kg-dry	1	7/7/2015 2:54 AM
Endosulfan II	2.7	U	0.84	2.7	2.7	µg/Kg-dry	1	7/7/2015 2:54 AM
Endosulfan sulfate	2.9	U	0.85	2.9	2.9	µg/Kg-dry	1	7/7/2015 2:54 AM
Endrin	2.9	U	0.87	2.9	2.9	µg/Kg-dry	1	7/7/2015 2:54 AM
Endrin aldehyde	2.9	U	0.88	2.9	2.9	µg/Kg-dry	1	7/7/2015 2:54 AM
Endrin ketone	2.7	U	0.82	2.7	2.7	µg/Kg-dry	1	7/7/2015 2:54 AM
gamma-BHC	2.3	U	0.69	2.3	2.3	µg/Kg-dry	1	7/7/2015 2:54 AM
gamma-Chlordane	2.7	U	0.84	2.7	2.7	µg/Kg-dry	1	7/7/2015 2:54 AM
Heptachlor	2.7	U	0.83	2.7	2.7	µg/Kg-dry	1	7/7/2015 2:54 AM
Heptachlor epoxide	2.7	U	0.83	2.7	2.7	µg/Kg-dry	1	7/7/2015 2:54 AM
Methoxychlor	2.9	U	0.86	2.9	2.9	µg/Kg-dry	1	7/7/2015 2:54 AM
Toxaphene	38	U	11	38	38	µg/Kg-dry	1	7/7/2015 2:54 AM
Surr: Decachlorobiphenyl	104			55-130		%Rec	1	7/7/2015 2:54 AM
Surr: Tetrachloro-m-xylene	102			42-129		%Rec	1	7/7/2015 2:54 AM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	4.5	U	1.4	4.5	4.5	µg/Kg-dry	1	6/23/2015 8:34 PM
Aroclor 1221	4.5	U	1.4	4.5	4.5	µg/Kg-dry	1	6/23/2015 8:34 PM
Aroclor 1232	4.5	U	1.4	4.5	4.5	µg/Kg-dry	1	6/23/2015 8:34 PM
Aroclor 1242	4.5	U	1.4	4.5	4.5	µg/Kg-dry	1	6/23/2015 8:34 PM
Aroclor 1248	4.5	U	1.4	4.5	4.5	µg/Kg-dry	1	6/23/2015 8:34 PM
Aroclor 1254	4.5	U	1.4	4.5	4.5	µg/Kg-dry	1	6/23/2015 8:34 PM
Aroclor 1260	4.5	U	1.1	4.5	4.5	µg/Kg-dry	1	6/23/2015 8:34 PM
Aroclor 1262	4.5	U	1.4	4.5	4.5	µg/Kg-dry	1	6/23/2015 8:34 PM
Aroclor 1268	4.5	U	1.4	4.5	4.5	µg/Kg-dry	1	6/23/2015 8:34 PM
Total PCBs	4.5	U	1.4	4.5	4.5	µg/Kg-dry	1	6/23/2015 8:34 PM
Surr: Tetrachloro-m-xylene	99.1			44-130		%Rec	1	6/23/2015 8:34 PM

Client:	USACE- Detroit District	**Collection Date:**	6/8/2015 6:43:00 PM
Project:	Sturgeon Bay		
Lab ID:	1506418-011	**Matrix:**	Sediment
Client Sample ID:	SB-15-11		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	92.4			60-125		%Rec	1	6/23/2015 8:34 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	210		1.6	5.6	5.6	mg/Kg-dry	10	7/2/2015 2:28 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	1.5	U	0.75	1.5	1.5	mg/Kg-dry	1	6/18/2015 12:24 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	2,700	J	930	3,000	3,000	µg/Kg-dry	1	6/15/2015 10:45 AM
Barium	30,000		3,000	10,000	10,000	µg/Kg-dry	1	6/15/2015 10:45 AM
Cadmium	470		61	150	150	µg/Kg-dry	1	6/15/2015 10:45 AM
Chromium	10,000		140	460	460	µg/Kg-dry	1	6/15/2015 10:45 AM
Copper	9,200		910	3,000	3,000	µg/Kg-dry	1	6/15/2015 10:45 AM
Iron	7,300,000		77,000	260,000	260,000	µg/Kg-dry	10	6/15/2015 11:37 AM
Lead	8,300		1,800	5,900	5,900	µg/Kg-dry	1	6/15/2015 10:45 AM
Manganese	170,000		320	1,100	1,100	µg/Kg-dry	1	6/15/2015 10:45 AM
Nickel	8,900		1,100	3,600	3,600	µg/Kg-dry	1	6/15/2015 10:45 AM
Selenium	3,200	U	950	3,200	3,200	µg/Kg-dry	1	7/10/2015 12:48 PM
Silver	910	U	290	910	910	µg/Kg-dry	1	6/15/2015 10:45 AM
Zinc	12,000		790	2,600	2,600	µg/Kg-dry	1	6/15/2015 10:45 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	120		3.8	13	13	µg/Kg-dry	1	6/15/2015 5:06 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	22	U	6.4	22	22	µg/Kg-dry	1	6/29/2015 4:26 AM
Acenaphthene	21	U	6.2	21	21	µg/Kg-dry	1	6/29/2015 4:26 AM
Acenaphthylene	27	U	8.2	27	27	µg/Kg-dry	1	6/29/2015 4:26 AM
Anthracene	13	J	5.3	18	18	µg/Kg-dry	1	6/29/2015 4:26 AM
Benzo(a)anthracene	50		9.8	33	33	µg/Kg-dry	1	6/29/2015 4:26 AM
Benzo(a)pyrene	55		12	40	40	µg/Kg-dry	1	6/29/2015 4:26 AM
Benzo(b)fluoranthene	79		15	49	49	µg/Kg-dry	1	6/29/2015 4:26 AM
Benzo(g,h,i)perylene	19	J	9.5	31	31	µg/Kg-dry	1	6/29/2015 4:26 AM
Benzo(k)fluoranthene	25	J	11	38	38	µg/Kg-dry	1	6/29/2015 4:26 AM
Chrysene	56		6.9	22	22	µg/Kg-dry	1	6/29/2015 4:26 AM
Dibenzo(a,h)anthracene	49	U	15	49	49	µg/Kg-dry	1	6/29/2015 4:26 AM
Fluoranthene	120		9.1	31	31	µg/Kg-dry	1	6/29/2015 4:26 AM
Fluorene	40	U	12	40	40	µg/Kg-dry	1	6/29/2015 4:26 AM
Indeno(1,2,3-cd)pyrene	24	J	13	42	42	µg/Kg-dry	1	6/29/2015 4:26 AM
Naphthalene	7.4	J	7.3	24	24	µg/Kg-dry	1	6/29/2015 4:26 AM
Phenanthrene	55		15	51	51	µg/Kg-dry	1	6/29/2015 4:26 AM
Pyrene	90		12	38	38	µg/Kg-dry	1	6/29/2015 4:26 AM
Surr: 2-Fluorobiphenyl	81.0			44-115		%Rec	1	6/29/2015 4:26 AM
Surr: Nitrobenzene-d5	79.9			37-122		%Rec	1	6/29/2015 4:26 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-011
Client Sample ID: SB-15-11

Collection Date: 6/8/2015 6:43:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	88.1			54-127		%Rec	1	6/29/2015 4:26 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	97		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	90		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	83		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	72		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	37		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	13		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	13		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	2.6		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	14		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	46		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	37		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	15.2					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	1.82						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	2,100		1.3	4.5	4.5	mg/Kg-dry	1	7/1/2015 2:54 PM
Nitrogen, Ammonia	150		1.4	4.7	4.7	mg/Kg-dry	1	6/26/2015 4:49 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	56		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	44		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	5.5		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	50,000		400	560	1,100	mg/Kg-dry	24.390 2439	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	59,000		1,100	3,700	3,700	mg/Kg-dry	1	6/30/2015 11:19 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client:	USACE- Detroit District	**Collection Date:**	6/8/2015 5:50:00 PM
Project:	Sturgeon Bay		
Lab ID:	1506418-012	**Matrix:**	Sediment
Client Sample ID:	SB-15-12		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 49.087					deg min		
Longitude	-087 21.078					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	140	J	110	390	390	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	4.2	U	1.3	4.2	4.2	µg/Kg-dry	1	7/7/2015 3:19 AM
4,4'-DDE	2.6	U	0.74	2.6	2.6	µg/Kg-dry	1	7/7/2015 3:19 AM
4,4'-DDT	2.8	U	0.82	2.8	2.8	µg/Kg-dry	1	7/7/2015 3:19 AM
Aldrin	2.6	U	0.79	2.6	2.6	µg/Kg-dry	1	7/7/2015 3:19 AM
alpha-BHC	2.3	U	0.69	2.3	2.3	µg/Kg-dry	1	7/7/2015 3:19 AM
alpha-Chlordane	2.8	U	0.88	2.8	2.8	µg/Kg-dry	1	7/7/2015 3:19 AM
beta-BHC	2.8	U	0.84	2.8	2.8	µg/Kg-dry	1	7/7/2015 3:19 AM
Chlordane (Technical)	27	U	8.2	27	27	µg/Kg-dry	1	7/7/2015 3:19 AM
delta-BHC	2.3	U	0.69	2.3	2.3	µg/Kg-dry	1	7/7/2015 3:19 AM
Dieldrin	2.8	U	0.85	2.8	2.8	µg/Kg-dry	1	7/7/2015 3:19 AM
Endosulfan I	3.0	U	0.88	3.0	3.0	µg/Kg-dry	1	7/7/2015 3:19 AM
Endosulfan II	2.8	U	0.87	2.8	2.8	µg/Kg-dry	1	7/7/2015 3:19 AM
Endosulfan sulfate	3.0	U	0.88	3.0	3.0	µg/Kg-dry	1	7/7/2015 3:19 AM
Endrin	3.0	U	0.90	3.0	3.0	µg/Kg-dry	1	7/7/2015 3:19 AM
Endrin aldehyde	3.0	U	0.92	3.0	3.0	µg/Kg-dry	1	7/7/2015 3:19 AM
Endrin ketone	2.8	U	0.86	2.8	2.8	µg/Kg-dry	1	7/7/2015 3:19 AM
gamma-BHC	2.3	U	0.71	2.3	2.3	µg/Kg-dry	1	7/7/2015 3:19 AM
gamma-Chlordane	2.8	U	0.88	2.8	2.8	µg/Kg-dry	1	7/7/2015 3:19 AM
Heptachlor	2.8	U	0.86	2.8	2.8	µg/Kg-dry	1	7/7/2015 3:19 AM
Heptachlor epoxide	2.8	U	0.87	2.8	2.8	µg/Kg-dry	1	7/7/2015 3:19 AM
Methoxychlor	3.0	U	0.90	3.0	3.0	µg/Kg-dry	1	7/7/2015 3:19 AM
Toxaphene	39	U	12	39	39	µg/Kg-dry	1	7/7/2015 3:19 AM
Surr: Decachlorobiphenyl	116			55-130		%Rec	1	7/7/2015 3:19 AM
Surr: Tetrachloro-m-xylene	93.8			42-129		%Rec	1	7/7/2015 3:19 AM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	4.7	U	1.4	4.7	4.7	µg/Kg-dry	1	6/23/2015 8:58 PM
Aroclor 1221	4.7	U	1.4	4.7	4.7	µg/Kg-dry	1	6/23/2015 8:58 PM
Aroclor 1232	4.7	U	1.4	4.7	4.7	µg/Kg-dry	1	6/23/2015 8:58 PM
Aroclor 1242	4.7	U	1.4	4.7	4.7	µg/Kg-dry	1	6/23/2015 8:58 PM
Aroclor 1248	4.7	U	1.4	4.7	4.7	µg/Kg-dry	1	6/23/2015 8:58 PM
Aroclor 1254	4.7	U	1.4	4.7	4.7	µg/Kg-dry	1	6/23/2015 8:58 PM
Aroclor 1260	4.7	U	1.2	4.7	4.7	µg/Kg-dry	1	6/23/2015 8:58 PM
Aroclor 1262	4.7	U	1.4	4.7	4.7	µg/Kg-dry	1	6/23/2015 8:58 PM
Aroclor 1268	4.7	U	1.4	4.7	4.7	µg/Kg-dry	1	6/23/2015 8:58 PM
Total PCBs	4.7	U	1.4	4.7	4.7	µg/Kg-dry	1	6/23/2015 8:58 PM
Surr: Tetrachloro-m-xylene	96.4			44-130		%Rec	1	6/23/2015 8:58 PM

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-012
Client Sample ID: SB-15-12

Collection Date: 6/8/2015 5:50:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	90.3			60-125		%Rec	1	6/23/2015 8:58 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	270		1.6	5.8	5.8	mg/Kg-dry	10	7/2/2015 2:28 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	1.6	U	0.77	1.6	1.6	mg/Kg-dry	1	6/18/2015 12:25 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	3,800	U	1,200	3,800	3,800	µg/Kg-dry	1	6/15/2015 10:47 AM
Barium	33,000		3,800	13,000	13,000	µg/Kg-dry	1	6/15/2015 10:47 AM
Cadmium	600		77	190	190	µg/Kg-dry	1	6/15/2015 10:47 AM
Chromium	14,000		170	570	570	µg/Kg-dry	1	6/15/2015 10:47 AM
Copper	12,000		1,100	3,800	3,800	µg/Kg-dry	1	6/15/2015 10:47 AM
Iron	8,600,000		98,000	330,000	330,000	µg/Kg-dry	10	6/15/2015 11:38 AM
Lead	13,000		2,300	7,500	7,500	µg/Kg-dry	1	6/15/2015 10:47 AM
Manganese	200,000		400	1,300	1,300	µg/Kg-dry	1	6/15/2015 10:47 AM
Nickel	11,000		1,400	4,600	4,600	µg/Kg-dry	1	6/15/2015 10:47 AM
Selenium	3,200	U	960	3,200	3,200	µg/Kg-dry	1	7/10/2015 12:49 PM
Silver	1,100	U	360	1,100	1,100	µg/Kg-dry	1	6/15/2015 10:47 AM
Zinc	23,000		1,000	3,300	3,300	µg/Kg-dry	1	6/15/2015 10:47 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	140		4.3	15	15	µg/Kg-dry	1	6/15/2015 5:07 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	23	U	6.7	23	23	µg/Kg-dry	1	6/29/2015 4:51 AM
Acenaphthene	22	U	6.4	22	22	µg/Kg-dry	1	6/29/2015 4:51 AM
Acenaphthylene	28	U	8.5	28	28	µg/Kg-dry	1	6/29/2015 4:51 AM
Anthracene	9.2	J	5.5	18	18	µg/Kg-dry	1	6/29/2015 4:51 AM
Benzo(a)anthracene	34	J	10	35	35	µg/Kg-dry	1	6/29/2015 4:51 AM
Benzo(a)pyrene	40	J	13	41	41	µg/Kg-dry	1	6/29/2015 4:51 AM
Benzo(b)fluoranthene	57		15	51	51	µg/Kg-dry	1	6/29/2015 4:51 AM
Benzo(g,h,i)perylene	15	J	9.9	32	32	µg/Kg-dry	1	6/29/2015 4:51 AM
Benzo(k)fluoranthene	18	J	12	39	39	µg/Kg-dry	1	6/29/2015 4:51 AM
Chrysene	41		7.1	23	23	µg/Kg-dry	1	6/29/2015 4:51 AM
Dibenzo(a,h)anthracene	51	U	15	51	51	µg/Kg-dry	1	6/29/2015 4:51 AM
Fluoranthene	94		9.4	32	32	µg/Kg-dry	1	6/29/2015 4:51 AM
Fluorene	41	U	13	41	41	µg/Kg-dry	1	6/29/2015 4:51 AM
Indeno(1,2,3-cd)pyrene	20	J	13	44	44	µg/Kg-dry	1	6/29/2015 4:51 AM
Naphthalene	25	U	7.6	25	25	µg/Kg-dry	1	6/29/2015 4:51 AM
Phenanthrene	47	J	16	53	53	µg/Kg-dry	1	6/29/2015 4:51 AM
Pyrene	74		12	39	39	µg/Kg-dry	1	6/29/2015 4:51 AM
Surr: 2-Fluorobiphenyl	79.5			44-115		%Rec	1	6/29/2015 4:51 AM
Surr: Nitrobenzene-d5	80.9			37-122		%Rec	1	6/29/2015 4:51 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-012
Client Sample ID: SB-15-12

Collection Date: 6/8/2015 5:50:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	90.0			54-127		%Rec	1	6/29/2015 4:51 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	96		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	91		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	81		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	53		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	36		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	26		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	26		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	3.9		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	15		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	45		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	36		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	18.6					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.24						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	2,200		1.3	4.5	4.5	mg/Kg-dry	1	7/1/2015 2:59 PM
Nitrogen, Ammonia	200		1.5	5.1	5.1	mg/Kg-dry	1	6/26/2015 4:51 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	58		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	42		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	5.2		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	20,000		400	550	1,100	mg/Kg-dry	23.364 48598	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	51,000		1,100	3,800	3,800	mg/Kg-dry	1	6/30/2015 12:08 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-013
Client Sample ID: SB-15-07 BPD

Collection Date: 6/9/2015 12:50:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 48.549					deg min		
Longitude	-087 20.148					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	78	J	73	260	260	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	2.8	U	0.84	2.8	2.8	µg/Kg-dry	1	7/7/2015 3:44 AM
4,4'-DDE	1.7	U	0.49	1.7	1.7	µg/Kg-dry	1	7/7/2015 3:44 AM
4,4'-DDT	1.9	U	0.54	1.9	1.9	µg/Kg-dry	1	7/7/2015 3:44 AM
Aldrin	1.7	U	0.52	1.7	1.7	µg/Kg-dry	1	7/7/2015 3:44 AM
alpha-BHC	1.5	U	0.45	1.5	1.5	µg/Kg-dry	1	7/7/2015 3:44 AM
alpha-Chlordane	1.9	U	0.58	1.9	1.9	µg/Kg-dry	1	7/7/2015 3:44 AM
beta-BHC	1.9	U	0.55	1.9	1.9	µg/Kg-dry	1	7/7/2015 3:44 AM
Chlordane (Technical)	18	U	5.4	18	18	µg/Kg-dry	1	7/7/2015 3:44 AM
delta-BHC	1.5	U	0.45	1.5	1.5	µg/Kg-dry	1	7/7/2015 3:44 AM
Dieldrin	1.9	U	0.56	1.9	1.9	µg/Kg-dry	1	7/7/2015 3:44 AM
Endosulfan I	2.0	U	0.58	2.0	2.0	µg/Kg-dry	1	7/7/2015 3:44 AM
Endosulfan II	1.9	U	0.58	1.9	1.9	µg/Kg-dry	1	7/7/2015 3:44 AM
Endosulfan sulfate	2.0	U	0.58	2.0	2.0	µg/Kg-dry	1	7/7/2015 3:44 AM
Endrin	2.0	U	0.59	2.0	2.0	µg/Kg-dry	1	7/7/2015 3:44 AM
Endrin aldehyde	2.0	U	0.60	2.0	2.0	µg/Kg-dry	1	7/7/2015 3:44 AM
Endrin ketone	1.9	U	0.57	1.9	1.9	µg/Kg-dry	1	7/7/2015 3:44 AM
gamma-BHC	1.5	U	0.47	1.5	1.5	µg/Kg-dry	1	7/7/2015 3:44 AM
gamma-Chlordane	1.9	U	0.58	1.9	1.9	µg/Kg-dry	1	7/7/2015 3:44 AM
Heptachlor	1.9	U	0.57	1.9	1.9	µg/Kg-dry	1	7/7/2015 3:44 AM
Heptachlor epoxide	1.9	U	0.57	1.9	1.9	µg/Kg-dry	1	7/7/2015 3:44 AM
Methoxychlor	2.0	U	0.59	2.0	2.0	µg/Kg-dry	1	7/7/2015 3:44 AM
Toxaphene	26	U	7.8	26	26	µg/Kg-dry	1	7/7/2015 3:44 AM
Surr: Decachlorobiphenyl	109			55-130		%Rec	1	7/7/2015 3:44 AM
Surr: Tetrachloro-m-xylene	86.9			42-129		%Rec	1	7/7/2015 3:44 AM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	3.1	U	0.93	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:22 PM
Aroclor 1221	3.1	U	0.93	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:22 PM
Aroclor 1232	3.1	U	0.93	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:22 PM
Aroclor 1242	3.1	U	0.93	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:22 PM
Aroclor 1248	3.1	U	0.93	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:22 PM
Aroclor 1254	3.1	U	0.93	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:22 PM
Aroclor 1260	3.1	U	0.77	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:22 PM
Aroclor 1262	3.1	U	0.93	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:22 PM
Aroclor 1268	3.1	U	0.93	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:22 PM
Total PCBs	3.1	U	0.93	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:22 PM
Surr: Tetrachloro-m-xylene	99.1			44-130		%Rec	1	6/23/2015 9:22 PM

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-013
Client Sample ID: SB-15-07 BPD

Collection Date: 6/9/2015 12:50:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	85.4			60-125		%Rec	1	6/23/2015 9:22 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	140		1.1	3.8	3.8	mg/Kg-dry	10	7/7/2015 3:29 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	1.0	U	0.51	1.0	1.0	mg/Kg-dry	1	6/18/2015 12:25 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	1,900	J	700	2,300	2,300	µg/Kg-dry	1	6/15/2015 10:48 AM
Barium	22,000		2,300	7,700	7,700	µg/Kg-dry	1	6/15/2015 10:48 AM
Cadmium	400		46	110	110	µg/Kg-dry	1	6/15/2015 10:48 AM
Chromium	8,300		100	340	340	µg/Kg-dry	1	6/15/2015 10:48 AM
Copper	6,500		690	2,300	2,300	µg/Kg-dry	1	6/15/2015 10:48 AM
Iron	6,200,000		58,000	190,000	190,000	µg/Kg-dry	10	6/15/2015 11:40 AM
Lead	7,300		1,400	4,500	4,500	µg/Kg-dry	1	6/15/2015 10:48 AM
Manganese	160,000		240	800	800	µg/Kg-dry	1	6/15/2015 10:48 AM
Nickel	6,800		840	2,800	2,800	µg/Kg-dry	1	6/15/2015 10:48 AM
Selenium	2,000	U	600	2,000	2,000	µg/Kg-dry	1	7/10/2015 12:50 PM
Silver	690	U	220	690	690	µg/Kg-dry	1	6/15/2015 10:48 AM
Zinc	6,300		600	1,900	1,900	µg/Kg-dry	1	6/15/2015 10:48 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	69		2.5	8.7	8.7	µg/Kg-dry	1	6/15/2015 5:09 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	4.6	J	4.5	15	15	µg/Kg-dry	1	6/29/2015 5:16 AM
Acenaphthene	6.7	J	4.3	15	15	µg/Kg-dry	1	6/29/2015 5:16 AM
Acenaphthylene	19	U	5.7	19	19	µg/Kg-dry	1	6/29/2015 5:16 AM
Anthracene	22		3.7	12	12	µg/Kg-dry	1	6/29/2015 5:16 AM
Benzo(a)anthracene	38		6.8	23	23	µg/Kg-dry	1	6/29/2015 5:16 AM
Benzo(a)pyrene	40		8.5	28	28	µg/Kg-dry	1	6/29/2015 5:16 AM
Benzo(b)fluoranthene	57		10	34	34	µg/Kg-dry	1	6/29/2015 5:16 AM
Benzo(g,h,i)perylene	13	J	6.7	22	22	µg/Kg-dry	1	6/29/2015 5:16 AM
Benzo(k)fluoranthene	19	J	7.7	26	26	µg/Kg-dry	1	6/29/2015 5:16 AM
Chrysene	41		4.8	15	15	µg/Kg-dry	1	6/29/2015 5:16 AM
Dibenzo(a,h)anthracene	34	U	10	34	34	µg/Kg-dry	1	6/29/2015 5:16 AM
Fluoranthene	130		6.3	22	22	µg/Kg-dry	1	6/29/2015 5:16 AM
Fluorene	10	J	8.5	28	28	µg/Kg-dry	1	6/29/2015 5:16 AM
Indeno(1,2,3-cd)pyrene	17	J	8.8	29	29	µg/Kg-dry	1	6/29/2015 5:16 AM
Naphthalene	5.2	J	5.1	17	17	µg/Kg-dry	1	6/29/2015 5:16 AM
Phenanthrene	77		11	36	36	µg/Kg-dry	1	6/29/2015 5:16 AM
Pyrene	95		8.1	26	26	µg/Kg-dry	1	6/29/2015 5:16 AM
Surr: 2-Fluorobiphenyl	82.9			44-115		%Rec	1	6/29/2015 5:16 AM
Surr: Nitrobenzene-d5	84.0			37-122		%Rec	1	6/29/2015 5:16 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-013
Client Sample ID: SB-15-07 BPD

Collection Date: 6/9/2015 12:50:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	89.8			54-127		%Rec	1	6/29/2015 5:16 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	98		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	92		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	88		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	67		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	20		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	7.0		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	7.0		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	2.0		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	9.5		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	69		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	20		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	27.7					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	3.32						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	1,000		0.87	2.9	2.9	mg/Kg-dry	1	7/1/2015 3:04 PM
Nitrogen, Ammonia	220		0.99	3.3	3.3	mg/Kg-dry	1	6/26/2015 4:53 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	36		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	64		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	2.9		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	24,000		250	350	700	mg/Kg-dry	22.522 52252	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	47,000		1,200	3,900	3,900	mg/Kg-dry	1	6/30/2015 12:25 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-014
Client Sample ID: SB-15-08 BPD

Collection Date: 6/9/2015 1:35:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 48.596					deg min		
Longitude	-087 20.215					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	130	J	73	260	260	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	2.8	U	0.83	2.8	2.8	µg/Kg-dry	1	7/7/2015 4:09 AM
4,4'-DDE	1.7	U	0.48	1.7	1.7	µg/Kg-dry	1	7/7/2015 4:09 AM
4,4'-DDT	1.8	U	0.54	1.8	1.8	µg/Kg-dry	1	7/7/2015 4:09 AM
Aldrin	1.7	U	0.52	1.7	1.7	µg/Kg-dry	1	7/7/2015 4:09 AM
alpha-BHC	1.5	U	0.45	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:09 AM
alpha-Chlordane	1.8	U	0.57	1.8	1.8	µg/Kg-dry	1	7/7/2015 4:09 AM
beta-BHC	1.8	U	0.55	1.8	1.8	µg/Kg-dry	1	7/7/2015 4:09 AM
Chlordane (Technical)	18	U	5.3	18	18	µg/Kg-dry	1	7/7/2015 4:09 AM
delta-BHC	1.5	U	0.45	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:09 AM
Dieldrin	1.8	U	0.55	1.8	1.8	µg/Kg-dry	1	7/7/2015 4:09 AM
Endosulfan I	2.0	U	0.58	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:09 AM
Endosulfan II	1.8	U	0.57	1.8	1.8	µg/Kg-dry	1	7/7/2015 4:09 AM
Endosulfan sulfate	2.0	U	0.58	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:09 AM
Endrin	2.0	U	0.59	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:09 AM
Endrin aldehyde	2.0	U	0.60	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:09 AM
Endrin ketone	1.8	U	0.56	1.8	1.8	µg/Kg-dry	1	7/7/2015 4:09 AM
gamma-BHC	1.5	U	0.47	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:09 AM
gamma-Chlordane	1.8	U	0.57	1.8	1.8	µg/Kg-dry	1	7/7/2015 4:09 AM
Heptachlor	1.8	U	0.56	1.8	1.8	µg/Kg-dry	1	7/7/2015 4:09 AM
Heptachlor epoxide	1.8	U	0.57	1.8	1.8	µg/Kg-dry	1	7/7/2015 4:09 AM
Methoxychlor	2.0	U	0.59	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:09 AM
Toxaphene	26	U	7.7	26	26	µg/Kg-dry	1	7/7/2015 4:09 AM
Surr: Decachlorobiphenyl	112			55-130		%Rec	1	7/7/2015 4:09 AM
Surr: Tetrachloro-m-xylene	78.3			42-129		%Rec	1	7/7/2015 4:09 AM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:47 PM
Aroclor 1221	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:47 PM
Aroclor 1232	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:47 PM
Aroclor 1242	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:47 PM
Aroclor 1248	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:47 PM
Aroclor 1254	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:47 PM
Aroclor 1260	3.1	U	0.77	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:47 PM
Aroclor 1262	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:47 PM
Aroclor 1268	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:47 PM
Total PCBs	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	6/23/2015 9:47 PM
Surr: Tetrachloro-m-xylene	91.6			44-130		%Rec	1	6/23/2015 9:47 PM

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 1:35:00 PM
Project:	Sturgeon Bay		
Lab ID:	1506418-014	**Matrix:**	Sediment
Client Sample ID:	SB-15-08 BPD		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	89.9			60-125		%Rec	1	6/23/2015 9:47 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	170		1.0	3.8	3.8	mg/Kg-dry	10	7/7/2015 3:29 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	1.0	U	0.51	1.0	1.0	mg/Kg-dry	1	6/18/2015 12:25 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	2,200		600	2,000	2,000	µg/Kg-dry	1	6/15/2015 10:49 AM
Barium	22,000		2,000	6,500	6,500	µg/Kg-dry	1	6/15/2015 10:49 AM
Cadmium	490		39	98	98	µg/Kg-dry	1	6/15/2015 10:49 AM
Chromium	8,700		88	290	290	µg/Kg-dry	1	6/15/2015 10:49 AM
Copper	7,100		590	2,000	2,000	µg/Kg-dry	1	6/15/2015 10:49 AM
Iron	6,200,000		50,000	170,000	170,000	µg/Kg-dry	10	6/15/2015 11:41 AM
Lead	9,400		1,200	3,800	3,800	µg/Kg-dry	1	6/15/2015 10:49 AM
Manganese	160,000		200	680	680	µg/Kg-dry	1	6/15/2015 10:49 AM
Nickel	7,500		710	2,300	2,300	µg/Kg-dry	1	6/15/2015 10:49 AM
Selenium	820	J	620	2,100	2,100	µg/Kg-dry	1	7/10/2015 12:52 PM
Silver	590	U	190	590	590	µg/Kg-dry	1	6/15/2015 10:49 AM
Zinc	13,000		510	1,700	1,700	µg/Kg-dry	1	6/15/2015 10:49 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	110		2.5	8.6	8.6	µg/Kg-dry	1	6/19/2015 5:09 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	4.6	J	4.5	15	15	µg/Kg-dry	1	6/29/2015 5:42 AM
Acenaphthene	4.6	J	4.3	15	15	µg/Kg-dry	1	6/29/2015 5:42 AM
Acenaphthylene	18	U	5.7	18	18	µg/Kg-dry	1	6/29/2015 5:42 AM
Anthracene	9.7	J	3.7	12	12	µg/Kg-dry	1	6/29/2015 5:42 AM
Benzo(a)anthracene	37		6.8	23	23	µg/Kg-dry	1	6/29/2015 5:42 AM
Benzo(a)pyrene	40		8.4	28	28	µg/Kg-dry	1	6/29/2015 5:42 AM
Benzo(b)fluoranthene	63		10	34	34	µg/Kg-dry	1	6/29/2015 5:42 AM
Benzo(g,h,i)perylene	14	J	6.6	21	21	µg/Kg-dry	1	6/29/2015 5:42 AM
Benzo(k)fluoranthene	13	J	7.7	26	26	µg/Kg-dry	1	6/29/2015 5:42 AM
Chrysene	42		4.8	15	15	µg/Kg-dry	1	6/29/2015 5:42 AM
Dibenzo(a,h)anthracene	34	U	10	34	34	µg/Kg-dry	1	6/29/2015 5:42 AM
Fluoranthene	75		6.3	21	21	µg/Kg-dry	1	6/29/2015 5:42 AM
Fluorene	28	U	8.4	28	28	µg/Kg-dry	1	6/29/2015 5:42 AM
Indeno(1,2,3-cd)pyrene	16	J	8.7	29	29	µg/Kg-dry	1	6/29/2015 5:42 AM
Naphthalene	17	U	5.1	17	17	µg/Kg-dry	1	6/29/2015 5:42 AM
Phenanthrene	43		10	35	35	µg/Kg-dry	1	6/29/2015 5:42 AM
Pyrene	59		8.0	26	26	µg/Kg-dry	1	6/29/2015 5:42 AM
Surr: 2-Fluorobiphenyl	87.0			44-115		%Rec	1	6/29/2015 5:42 AM
Surr: Nitrobenzene-d5	87.5			37-122		%Rec	1	6/29/2015 5:42 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-014
Client Sample ID: SB-15-08 BPD

Collection Date: 6/9/2015 1:35:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	93.9			54-127		%Rec	1	6/29/2015 5:42 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	97		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	90		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	85		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	72		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	24		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	11		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	11		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.10		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	2.8		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	12		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	61		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	24		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	21.4					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.57						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	1,300		0.82	2.8	2.8	mg/Kg-dry	1	7/1/2015 3:06 PM
Nitrogen, Ammonia	380		0.97	3.3	3.3	mg/Kg-dry	1	6/26/2015 4:57 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	36		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	64		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	3.4		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	20,000		260	370	730	mg/Kg-dry	23.584 90566	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	46,000		1,300	4,200	4,200	mg/Kg-dry	1	6/30/2015 12:46 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 2:39:00 PM
Project:	Sturgeon Bay		
Lab ID:	1506418-015	**Matrix:**	Sediment
Client Sample ID:	SB-15-10 BPD		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 48.897					deg min		
Longitude	-087 20.659					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	210	U	60	210	210	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	2.3	U	0.69	2.3	2.3	µg/Kg-dry	1	7/7/2015 4:34 AM
4,4'-DDE	1.4	U	0.40	1.4	1.4	µg/Kg-dry	1	7/7/2015 4:34 AM
4,4'-DDT	1.5	U	0.44	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:34 AM
Aldrin	1.4	U	0.43	1.4	1.4	µg/Kg-dry	1	7/7/2015 4:34 AM
alpha-BHC	1.3	U	0.37	1.3	1.3	µg/Kg-dry	1	7/7/2015 4:34 AM
alpha-Chlordane	1.5	U	0.47	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:34 AM
beta-BHC	1.5	U	0.45	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:34 AM
Chlordane (Technical)	15	U	4.4	15	15	µg/Kg-dry	1	7/7/2015 4:34 AM
delta-BHC	1.3	U	0.37	1.3	1.3	µg/Kg-dry	1	7/7/2015 4:34 AM
Dieldrin	1.5	U	0.46	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:34 AM
Endosulfan I	1.6	U	0.48	1.6	1.6	µg/Kg-dry	1	7/7/2015 4:34 AM
Endosulfan II	1.5	U	0.47	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:34 AM
Endosulfan sulfate	1.6	U	0.48	1.6	1.6	µg/Kg-dry	1	7/7/2015 4:34 AM
Endrin	1.6	U	0.49	1.6	1.6	µg/Kg-dry	1	7/7/2015 4:34 AM
Endrin aldehyde	1.6	U	0.50	1.6	1.6	µg/Kg-dry	1	7/7/2015 4:34 AM
Endrin ketone	1.5	U	0.46	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:34 AM
gamma-BHC	1.3	U	0.39	1.3	1.3	µg/Kg-dry	1	7/7/2015 4:34 AM
gamma-Chlordane	1.5	U	0.47	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:34 AM
Heptachlor	1.5	U	0.46	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:34 AM
Heptachlor epoxide	1.5	U	0.47	1.5	1.5	µg/Kg-dry	1	7/7/2015 4:34 AM
Methoxychlor	1.6	U	0.48	1.6	1.6	µg/Kg-dry	1	7/7/2015 4:34 AM
Toxaphene	21	U	6.3	21	21	µg/Kg-dry	1	7/7/2015 4:34 AM
Surr: Decachlorobiphenyl	107			55-130		%Rec	1	7/7/2015 4:34 AM
Surr: Tetrachloro-m-xylene	100			42-129		%Rec	1	7/7/2015 4:34 AM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	6/23/2015 10:11 PM
Aroclor 1221	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	6/23/2015 10:11 PM
Aroclor 1232	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	6/23/2015 10:11 PM
Aroclor 1242	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	6/23/2015 10:11 PM
Aroclor 1248	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	6/23/2015 10:11 PM
Aroclor 1254	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	6/23/2015 10:11 PM
Aroclor 1260	2.5	U	0.63	2.5	2.5	µg/Kg-dry	1	6/23/2015 10:11 PM
Aroclor 1262	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	6/23/2015 10:11 PM
Aroclor 1268	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	6/23/2015 10:11 PM
Total PCBs	2.5	U	0.76	2.5	2.5	µg/Kg-dry	1	6/23/2015 10:11 PM
Surr: Tetrachloro-m-xylene	99.9			44-130		%Rec	1	6/23/2015 10:11 PM

Client:	USACE- Detroit District	**Collection Date:**	6/9/2015 2:39:00 PM
Project:	Sturgeon Bay		
Lab ID:	1506418-015	**Matrix:**	Sediment
Client Sample ID:	SB-15-10 BPD		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	92.6			60-125		%Rec	1	6/23/2015 10:11 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	130		0.86	3.1	3.1	mg/Kg-dry	10	7/7/2015 3:29 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	0.85	U	0.42	0.85	0.85	mg/Kg-dry	1	6/18/2015 12:25 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	1,100	J	520	1,700	1,700	µg/Kg-dry	1	6/15/2015 10:51 AM
Barium	18,000		1,700	5,700	5,700	µg/Kg-dry	1	6/15/2015 10:51 AM
Cadmium	85	U	34	85	85	µg/Kg-dry	1	6/15/2015 10:51 AM
Chromium	7,900		77	260	260	µg/Kg-dry	1	6/15/2015 10:51 AM
Copper	6,600		510	1,700	1,700	µg/Kg-dry	1	6/15/2015 10:51 AM
Iron	8,600,000		43,000	140,000	140,000	µg/Kg-dry	10	6/15/2015 11:42 AM
Lead	2,300	J	1,000	3,300	3,300	µg/Kg-dry	1	6/15/2015 10:51 AM
Manganese	170,000		180	600	600	µg/Kg-dry	1	6/15/2015 10:51 AM
Nickel	7,900		620	2,000	2,000	µg/Kg-dry	1	6/15/2015 10:51 AM
Selenium	1,900	U	560	1,900	1,900	µg/Kg-dry	1	7/10/2015 12:53 PM
Silver	510	U	160	510	510	µg/Kg-dry	1	6/15/2015 10:51 AM
Zinc	1,400	U	440	1,400	1,400	µg/Kg-dry	1	6/15/2015 10:51 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	35		2.7	9.4	9.4	µg/Kg-dry	1	6/19/2015 5:11 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	12	U	3.7	12	12	µg/Kg-dry	1	6/29/2015 6:07 AM
Acenaphthene	12	U	3.6	12	12	µg/Kg-dry	1	6/29/2015 6:07 AM
Acenaphthylene	15	U	4.7	15	15	µg/Kg-dry	1	6/29/2015 6:07 AM
Anthracene	10	U	3.0	10	10	µg/Kg-dry	1	6/29/2015 6:07 AM
Benzo(a)anthracene	19	U	5.6	19	19	µg/Kg-dry	1	6/29/2015 6:07 AM
Benzo(a)pyrene	23	U	7.0	23	23	µg/Kg-dry	1	6/29/2015 6:07 AM
Benzo(b)fluoranthene	28	U	8.5	28	28	µg/Kg-dry	1	6/29/2015 6:07 AM
Benzo(g,h,i)perylene	18	U	5.5	18	18	µg/Kg-dry	1	6/29/2015 6:07 AM
Benzo(k)fluoranthene	22	U	6.3	22	22	µg/Kg-dry	1	6/29/2015 6:07 AM
Chrysene	13	U	3.9	13	13	µg/Kg-dry	1	6/29/2015 6:07 AM
Dibenzo(a,h)anthracene	28	U	8.4	28	28	µg/Kg-dry	1	6/29/2015 6:07 AM
Fluoranthene	18	U	5.2	18	18	µg/Kg-dry	1	6/29/2015 6:07 AM
Fluorene	23	U	7.0	23	23	µg/Kg-dry	1	6/29/2015 6:07 AM
Indeno(1,2,3-cd)pyrene	24	U	7.2	24	24	µg/Kg-dry	1	6/29/2015 6:07 AM
Naphthalene	14	U	4.2	14	14	µg/Kg-dry	1	6/29/2015 6:07 AM
Phenanthrene	29	U	8.6	29	29	µg/Kg-dry	1	6/29/2015 6:07 AM
Pyrene	22	U	6.6	22	22	µg/Kg-dry	1	6/29/2015 6:07 AM
Surr: 2-Fluorobiphenyl	81.7			44-115		%Rec	1	6/29/2015 6:07 AM
Surr: Nitrobenzene-d5	84.8			37-122		%Rec	1	6/29/2015 6:07 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-015
Client Sample ID: SB-15-10 BPD

Collection Date: 6/9/2015 2:39:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	91.2			54-127		%Rec	1	6/29/2015 6:07 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	92		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	83		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	77		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	70		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	32		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	5.2		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	5.2		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	0.40		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	7.4		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	15		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	45		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	32		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	24.5					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.94						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	290		0.62	2.1	2.1	mg/Kg-dry	1	7/1/2015 3:10 PM
Nitrogen, Ammonia	51		0.80	2.7	2.7	mg/Kg-dry	1	6/26/2015 4:59 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	22		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	78		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	1.3		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	5,100		210	300	590	mg/Kg-dry	23.148 14815	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	43,000		1,200	3,800	3,800	mg/Kg-dry	1	6/30/2015 1:11 PM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-016
Client Sample ID: SB-15-11 BPD

Collection Date: 6/8/2015 6:43:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Field Parameters			**Method:**					**Analyst:**
Latitude	44 48.958					deg min		
Longitude	-087 20.781					deg min		
Hexane Extractable Materials (HEM)			**Method: SW9071B**		**SW3540C**			**Analyst: NS1**
Oil & Grease, Total	130	J	82	290	290	mg/Kg-dry	1	6/17/2015 9:00 AM
Organochlorine Pesticides			**Method: SW8081B**		**SW3550C**			**Analyst: RV**
4,4'-DDD	3.1	U	0.92	3.1	3.1	µg/Kg-dry	1	7/7/2015 4:59 AM
4,4'-DDE	1.9	U	0.54	1.9	1.9	µg/Kg-dry	1	7/7/2015 4:59 AM
4,4'-DDT	2.0	U	0.60	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:59 AM
Aldrin	1.9	U	0.57	1.9	1.9	µg/Kg-dry	1	7/7/2015 4:59 AM
alpha-BHC	1.7	U	0.50	1.7	1.7	µg/Kg-dry	1	7/7/2015 4:59 AM
alpha-Chlordane	2.0	U	0.64	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:59 AM
beta-BHC	2.0	U	0.61	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:59 AM
Chlordane (Technical)	20	U	5.9	20	20	µg/Kg-dry	1	7/7/2015 4:59 AM
delta-BHC	1.7	U	0.50	1.7	1.7	µg/Kg-dry	1	7/7/2015 4:59 AM
Dieldrin	2.0	U	0.61	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:59 AM
Endosulfan I	2.2	U	0.64	2.2	2.2	µg/Kg-dry	1	7/7/2015 4:59 AM
Endosulfan II	2.0	U	0.63	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:59 AM
Endosulfan sulfate	2.2	U	0.64	2.2	2.2	µg/Kg-dry	1	7/7/2015 4:59 AM
Endrin	2.2	U	0.65	2.2	2.2	µg/Kg-dry	1	7/7/2015 4:59 AM
Endrin aldehyde	2.2	U	0.67	2.2	2.2	µg/Kg-dry	1	7/7/2015 4:59 AM
Endrin ketone	2.0	U	0.62	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:59 AM
gamma-BHC	1.7	U	0.52	1.7	1.7	µg/Kg-dry	1	7/7/2015 4:59 AM
gamma-Chlordane	2.0	U	0.64	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:59 AM
Heptachlor	2.0	U	0.62	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:59 AM
Heptachlor epoxide	2.0	U	0.63	2.0	2.0	µg/Kg-dry	1	7/7/2015 4:59 AM
Methoxychlor	2.2	U	0.65	2.2	2.2	µg/Kg-dry	1	7/7/2015 4:59 AM
Toxaphene	28	U	8.5	28	28	µg/Kg-dry	1	7/7/2015 4:59 AM
Surr: Decachlorobiphenyl	115			55-130		%Rec	1	7/7/2015 4:59 AM
Surr: Tetrachloro-m-xylene	109			42-129		%Rec	1	7/7/2015 4:59 AM
Polychlorinated Biphenyls			**Method: SW8082A**		**SW3550C**			**Analyst: BK**
Aroclor 1016	3.4	U	1.0	3.4	3.4	µg/Kg-dry	1	6/23/2015 10:35 PM
Aroclor 1221	3.4	U	1.0	3.4	3.4	µg/Kg-dry	1	6/23/2015 10:35 PM
Aroclor 1232	3.4	U	1.0	3.4	3.4	µg/Kg-dry	1	6/23/2015 10:35 PM
Aroclor 1242	3.4	U	1.0	3.4	3.4	µg/Kg-dry	1	6/23/2015 10:35 PM
Aroclor 1248	3.4	U	1.0	3.4	3.4	µg/Kg-dry	1	6/23/2015 10:35 PM
Aroclor 1254	3.4	U	1.0	3.4	3.4	µg/Kg-dry	1	6/23/2015 10:35 PM
Aroclor 1260	3.4	U	0.85	3.4	3.4	µg/Kg-dry	1	6/23/2015 10:35 PM
Aroclor 1262	3.4	U	1.0	3.4	3.4	µg/Kg-dry	1	6/23/2015 10:35 PM
Aroclor 1268	3.4	U	1.0	3.4	3.4	µg/Kg-dry	1	6/23/2015 10:35 PM
Total PCBs	3.4	U	1.0	3.4	3.4	µg/Kg-dry	1	6/23/2015 10:35 PM
Surr: Tetrachloro-m-xylene	96.2			44-130		%Rec	1	6/23/2015 10:35 PM

Client:	USACE- Detroit District	**Collection Date:**	6/8/2015 6:43:00 PM
Project:	Sturgeon Bay		
Lab ID:	1506418-016	**Matrix:**	Sediment
Client Sample ID:	SB-15-11 BPD		

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Decachlorobiphenyl	92.4			60-125		%Rec	1	6/23/2015 10:35 PM
Total Phosphorus			**Method: A4500-P-F**					**Analyst: EL**
Phosphorus, Total (As P)	34		1.2	4.2	4.2	mg/Kg-dry	10	7/7/2015 3:29 PM
Cyanide			**Method: SW9012B**					**Analyst: EL**
Cyanide, Total	1.2	U	0.57	1.2	1.2	mg/Kg-dry	1	6/18/2015 12:25 PM
Metals, ICP/OES			**Method: SW6010C**		**SW3050B**			**Analyst: MK**
Arsenic	14,000	U	4,200	14,000	14,000	µg/Kg-dry	5	6/15/2015 11:46 AM
Barium	60,000		14,000	46,000	46,000	µg/Kg-dry	5	6/15/2015 11:46 AM
Cadmium	680	U	270	680	680	µg/Kg-dry	5	6/15/2015 11:46 AM
Chromium	4,500		610	2,000	2,000	µg/Kg-dry	5	6/15/2015 11:46 AM
Copper	14,000	U	4,100	14,000	14,000	µg/Kg-dry	5	6/15/2015 11:46 AM
Iron	3,600,000		70,000	230,000	230,000	µg/Kg-dry	10	6/15/2015 11:44 AM
Lead	27,000	U	8,200	27,000	27,000	µg/Kg-dry	5	6/15/2015 11:46 AM
Manganese	180,000		1,400	4,800	4,800	µg/Kg-dry	5	6/15/2015 11:46 AM
Nickel	5,400	J	5,000	16,000	16,000	µg/Kg-dry	5	6/15/2015 11:46 AM
Selenium	2,600	U	770	2,600	2,600	µg/Kg-dry	1	7/10/2015 12:55 PM
Silver	4,100	U	1,300	4,100	4,100	µg/Kg-dry	5	6/15/2015 11:46 AM
Zinc	12,000	U	3,600	12,000	12,000	µg/Kg-dry	5	6/15/2015 11:46 AM
Mercury			**Method: SW7471B**		**SW7471A**			**Analyst: NK**
Mercury	30		2.5	8.6	8.6	µg/Kg-dry	1	6/19/2015 5:13 PM
Semi-Volatile Organic Compounds			**Method: SW8270D**		**SW3550C**			**Analyst: MB**
2-Methylnaphthalene	17	U	5.0	17	17	µg/Kg-dry	1	6/29/2015 6:33 AM
Acenaphthene	16	U	4.8	16	16	µg/Kg-dry	1	6/29/2015 6:33 AM
Acenaphthylene	21	U	6.4	21	21	µg/Kg-dry	1	6/29/2015 6:33 AM
Anthracene	14	U	4.1	14	14	µg/Kg-dry	1	6/29/2015 6:33 AM
Benzo(a)anthracene	26	U	7.6	26	26	µg/Kg-dry	1	6/29/2015 6:33 AM
Benzo(a)pyrene	31	U	9.5	31	31	µg/Kg-dry	1	6/29/2015 6:33 AM
Benzo(b)fluoranthene	38	U	12	38	38	µg/Kg-dry	1	6/29/2015 6:33 AM
Benzo(g,h,i)perylene	24	U	7.4	24	24	µg/Kg-dry	1	6/29/2015 6:33 AM
Benzo(k)fluoranthene	29	U	8.6	29	29	µg/Kg-dry	1	6/29/2015 6:33 AM
Chrysene	17	U	5.3	17	17	µg/Kg-dry	1	6/29/2015 6:33 AM
Dibenzo(a,h)anthracene	38	U	11	38	38	µg/Kg-dry	1	6/29/2015 6:33 AM
Fluoranthene	24	U	7.0	24	24	µg/Kg-dry	1	6/29/2015 6:33 AM
Fluorene	31	U	9.5	31	31	µg/Kg-dry	1	6/29/2015 6:33 AM
Indeno(1,2,3-cd)pyrene	33	U	9.8	33	33	µg/Kg-dry	1	6/29/2015 6:33 AM
Naphthalene	19	U	5.7	19	19	µg/Kg-dry	1	6/29/2015 6:33 AM
Phenanthrene	40	U	12	40	40	µg/Kg-dry	1	6/29/2015 6:33 AM
Pyrene	29	U	8.9	29	29	µg/Kg-dry	1	6/29/2015 6:33 AM
Surr: 2-Fluorobiphenyl	87.2			44-115		%Rec	1	6/29/2015 6:33 AM
Surr: Nitrobenzene-d5	90.3			37-122		%Rec	1	6/29/2015 6:33 AM

RTI Laboratories - Analytical Report

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District
Project: Sturgeon Bay
Lab ID: 1506418-016
Client Sample ID: SB-15-11 BPD

Collection Date: 6/8/2015 6:43:00 PM
Matrix: Sediment

Analysis	Result	Qual	DL	LOD	LOQ	Units	DF	Date Analyzed
Surr: Terphenyl-d14	93.6			54-127		%Rec	1	6/29/2015 6:33 AM
Particle Size Analysis			**Method: ASTM-D422**					**Analyst: EL**
0.75 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
0.375 in	100		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 4 (4.75-mm)	98		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.10 (2-mm)	86		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.20 (850-um)	70		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.40 (425-um)	59		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.100 (150-um)	45		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No.200 (75-um)	17		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
No. 270 (53-um)	0.60		0.10	0.10	0.10	% Finer	1	7/2/2015 8:10 AM
Non-retained material	0.60		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Gravel	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Gravel	1.5		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Coarse Sand	13		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Medium Sand	26		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Fine Sand	42		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Silt	17		0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Clay	0.10	U	0.10	0.10	0.10	%	1	7/2/2015 8:10 AM
Soil Density/Specific Gravity			**Method: ASTM D854**					**Analyst: EL**
Density	17.5					lbs/gal	1	7/2/2015 11:36 AM
Density Temperature	22.2					°C	1	7/2/2015 11:36 AM
Specific Gravity at 20 deg. C	2.10						1	7/2/2015 11:36 AM
Ammonia			**Method: SM4500-NH3-D**					**Analyst: PG**
TKN	1,400		0.96	3.3	3.3	mg/Kg-dry	1	7/1/2015 3:13 PM
Nitrogen, Ammonia	61		1.1	3.6	3.6	mg/Kg-dry	1	6/26/2015 5:06 PM
Percent Moisture			**Method: ASTM-D2216**					**Analyst: EG**
Percent Moisture	43		1.0	1.0	1.0	wt%	1	6/15/2015 11:30 AM
Total, Fixed and Volatile Solids in Solids			**Method: SM2540G**					**Analyst: EG**
Total Solids	57		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Total Volatile Solids	4.7		0.10	0.10	0.10	%	1	6/15/2015 11:30 AM
Chemical Oxygen Demand, COD			**Method: EPA410.4M**					**Analyst: NK**
Chemical Oxygen Demand	10,000		300	410	820	mg/Kg-dry	23.474 1784	6/23/2015 10:00 AM
Total Organic Carbon			**Method: SW9060A**					**Analyst: NK**
Organic Carbon, Total	34,000		1,300	4,400	4,400	mg/Kg-dry	1	6/30/2015 2:01 PM

RTI Laboratories - DATES REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-001A	SB-15-01	6/9/2015 8:18 AM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-001B	SB-15-01	6/9/2015 8:18 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:09 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/6/2015 9:04 PM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 2:55 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/28/2015 11:20 PM
1506418-001C	SB-15-01	6/9/2015 8:18 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:06 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:54 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 4:39 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:14 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:15 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:19 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/29/2015 11:53 AM
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:27 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-002A	SB-15-02	6/9/2015 8:42 AM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-002B	SB-15-02	6/9/2015 8:42 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:20 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/6/2015 10:19 PM

RTI Laboratories - DATES REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-002B	SB-15-02	6/9/2015 8:42 AM	Sediment				
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 3:19 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 12:37 AM
1506418-002C	SB-15-02	6/9/2015 8:42 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:17 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:18 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 4:40 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:26 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:16 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:28 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/29/2015 1:14 PM
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:27 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-003A	SB-15-03	6/9/2015 9:09 AM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-003B	SB-15-03	6/9/2015 9:09 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:22 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/6/2015 10:44 PM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 3:43 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 1:02 AM
1506418-003C	SB-15-03	6/9/2015 9:09 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:22 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:18 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM

RTI Laboratories - DATES REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-003C	SB-15-03	6/9/2015 9:09 AM	Sediment				
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 4:42 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:27 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:17 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:30 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/29/2015 1:36 PM
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:27 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-004A	SB-15-04	6/9/2015 9:42 AM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-004B	SB-15-04	6/9/2015 9:42 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:25 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/6/2015 11:09 PM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 4:56 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 1:27 AM
1506418-004C	SB-15-04	6/9/2015 9:42 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:24 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:18 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 4:54 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:28 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:19 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:31 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/29/2015 2:01 PM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/29/2015 2:19 PM

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Client: USACE- Detroit District

Project: Sturgeon Bay

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-004C	SB-15-04	6/9/2015 9:42 AM	Sediment				
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:27 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-005A	SB-15-05	6/9/2015 10:41 AM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-005B	SB-15-05	6/9/2015 10:41 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:27 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/6/2015 11:34 PM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 5:20 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 1:53 AM
1506418-005C	SB-15-05	6/9/2015 10:41 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:29 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:18 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 4:56 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:30 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:20 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:33 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/29/2015 2:59 PM
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:27 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-006A	SB-15-06	6/9/2015 11:08 AM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM

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Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-006B	SB-15-06	6/9/2015 11:08 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:30 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/6/2015 11:59 PM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 5:44 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 2:18 AM
1506418-006C	SB-15-06	6/9/2015 11:08 AM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:33 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:18 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 4:58 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:31 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:21 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:34 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/29/2015 3:32 PM
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:27 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-007A	SB-15-07	6/9/2015 12:50 PM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-007B	SB-15-07	6/9/2015 12:50 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:34 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/7/2015 12:24 AM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 6:08 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 2:44 AM
1506418-007C	SB-15-07	6/9/2015 12:50 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:34 PM

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Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-007C	SB-15-07	6/9/2015 12:50 PM	Sediment				
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:18 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 4:59 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:33 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:23 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:35 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/29/2015 3:48 PM
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:28 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-008A	SB-15-08	6/9/2015 1:35 PM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-008B	SB-15-08	6/9/2015 1:35 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:36 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/7/2015 12:49 AM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 6:33 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 3:09 AM
1506418-008C	SB-15-08	6/9/2015 1:35 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:36 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:18 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 5:01 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:34 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:24 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:37 PM

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Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-008C	SB-15-08	6/9/2015 1:35 PM	Sediment				
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/29/2015 4:14 PM
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:28 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-009A	SB-15-09	6/9/2015 3:32 PM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-009B	SB-15-09	6/9/2015 3:32 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:38 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/7/2015 1:14 AM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 7:46 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 3:35 AM
1506418-009C	SB-15-09	6/9/2015 3:32 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:38 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:18 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 5:03 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:35 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:26 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:38 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/29/2015 4:30 PM
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:28 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-010A	SB-15-10	6/9/2015 2:39 PM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM

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Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-010A	SB-15-10	6/9/2015 2:39 PM	Sediment				
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-010B	SB-15-10	6/9/2015 2:39 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:43 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/7/2015 1:39 AM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 8:10 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 4:00 AM
1506418-010C	SB-15-10	6/9/2015 2:39 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:41 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:24 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 5:04 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:37 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:27 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:40 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/29/2015 4:45 PM
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:28 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-011A	SB-15-11	6/8/2015 6:43 PM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-011B	SB-15-11	6/8/2015 6:43 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:54 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/7/2015 2:54 AM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 8:34 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 4:26 AM

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Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-011C	SB-15-11	6/8/2015 6:43 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:49 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:24 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 5:06 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:45 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:37 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:48 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/30/2015 11:19 AM
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:28 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-012A	SB-15-12	6/8/2015 5:50 PM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-012B	SB-15-12	6/8/2015 5:50 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 2:59 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/7/2015 3:19 AM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 8:58 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 4:51 AM
1506418-012C	SB-15-12	6/8/2015 5:50 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:51 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:25 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 5:07 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:47 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:38 AM

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Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-012C	SB-15-12	6/8/2015 5:50 PM	Sediment				
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:49 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/30/2015 12:08 PM
				WI_4500-P-FS-Total Phosphorus		6/29/2015 10:01 PM	7/2/2015 2:28 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-013A	SB-15-07 BPD	6/9/2015 12:50 PM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-013B	SB-15-07 BPD	6/9/2015 12:50 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 3:04 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/7/2015 3:44 AM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 9:22 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 5:16 AM
1506418-013C	SB-15-07 BPD	6/9/2015 12:50 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:53 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:25 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/15/2015 10:56 AM	6/15/2015 5:09 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:48 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:40 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:50 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/30/2015 12:25 PM
				WI_4500-P-FS-Total Phosphorus		7/6/2015 4:14 PM	7/7/2015 3:29 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-014A	SB-15-08 BPD	6/9/2015 1:35 PM	Sediment				
				Field-Field Parameters			

RTI Laboratories - DATES REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-014A	SB-15-08 BPD	6/9/2015 1:35 PM	Sediment				
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-014B	SB-15-08 BPD	6/9/2015 1:35 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 3:06 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/7/2015 4:09 AM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 9:47 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 5:42 AM
1506418-014C	SB-15-08 BPD	6/9/2015 1:35 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:57 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:25 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/18/2015 8:00 AM	6/19/2015 5:09 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:49 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:41 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:52 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/30/2015 12:46 PM
				WI_4500-P-FS-Total Phosphorus		7/6/2015 4:14 PM	7/7/2015 3:29 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-015A	SB-15-10 BPD	6/9/2015 2:39 PM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-015B	SB-15-10 BPD	6/9/2015 2:39 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 3:10 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/7/2015 4:34 AM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 10:11 PM

RTI Laboratories - DATES REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-015B	SB-15-10 BPD	6/9/2015 2:39 PM	Sediment				
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 6:07 AM
1506418-015C	SB-15-10 BPD	6/9/2015 2:39 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 4:59 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:25 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/18/2015 8:00 AM	6/19/2015 5:11 PM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:51 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:42 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:53 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/30/2015 1:11 PM
				WI_4500-P-FS-Total Phosphorus		7/6/2015 4:14 PM	7/7/2015 3:29 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM
1506418-016A	SB-15-11 BPD	6/8/2015 6:43 PM	Sediment				
				Field-Field Parameters			
				ASTM-D422-Particle Size Analysis		7/2/2015 8:10 AM	7/2/2015 8:10 AM
				ASTM-D854-Soil Density/Specific Gravity		7/2/2015 11:36 AM	7/2/2015 11:36 AM
1506418-016B	SB-15-11 BPD	6/8/2015 6:43 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/25/2015 10:32 AM	7/1/2015 3:13 PM
				WI_9071-Hexane Extractable Materials (HEM)		6/12/2015 12:08 PM	6/17/2015 9:00 AM
				WI_8081S-Organochlorine Pesticides		6/17/2015 8:53 AM	7/7/2015 4:59 AM
				WI_8082S-Polychlorinated Biphenyls		6/17/2015 8:56 AM	6/23/2015 10:35 PM
				WI_8270S-Semi-Volatile Organic Compounds		6/19/2015 8:14 AM	6/29/2015 6:33 AM
1506418-016C	SB-15-11 BPD	6/8/2015 6:43 PM	Sediment				
				WI_4500-NH3-DS-Ammonia		6/23/2015 3:22 PM	6/26/2015 5:06 PM
				WI_410.4-S-Chemical Oxygen Demand, COD		6/23/2015 10:00 AM	6/23/2015 10:00 AM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/18/2015 12:25 PM
				WI_9012S-Cyanide		6/17/2015 11:43 AM	6/22/2015 5:18 PM
				WI_7471S-Mercury		6/18/2015 8:00 AM	6/19/2015 5:13 PM

RTI Laboratories - DATES REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
1506418-016C	SB-15-11 BPD	6/8/2015 6:43 PM	Sediment				
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:52 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 10:56 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:44 AM
				WI_6010S-Metals, ICP/OES		6/12/2015 10:45 AM	6/15/2015 11:46 AM
				WI_6010S-Metals, ICP/OES		7/10/2015 7:00 AM	7/10/2015 12:55 PM
				PMOIST-Percent Moisture		6/15/2015 11:30 AM	6/15/2015 11:30 AM
				WI_9060S-Total Organic Carbon		6/17/2015 11:43 AM	6/30/2015 2:01 PM
				WI_4500-P-FS-Total Phosphorus		7/6/2015 4:14 PM	7/7/2015 3:29 PM
				SM_2540G-Total, Fixed and Volatile Solids in Solids		6/15/2015 11:30 AM	6/15/2015 11:30 AM

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36885**

Sample ID:	**MB-36885**	Samp Type:	**MBLK**	Test Code:	**SW_6010S**	Units:	**µg/Kg**	Prep Date:	**6/12/2015**	RunNo:	**78271**
Client ID:	**PBS**	Batch ID:	**36885**	TestNo:	**SW6010B**	**SW3050B**		Analysis Date:	**6/15/2015**	SeqNo:	**1516674**

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Arsenic	2,000	2,000									U
Barium	10,000	10,000									U
Cadmium	250	250									U
Chromium	190	500									J
Copper	1,000	5,000									J
Iron	3,900	15,000									J
Lead	5,000	5,000									U
Manganese	1,000	1,000									U
Nickel	5,000	5,000									U
Silver	1,000	1,000									U
Zinc	5,000	5,000									U

Sample ID:	**LCS-36885**	Samp Type:	**LCS**	Test Code:	**SW_6010S**	Units:	**µg/Kg**	Prep Date:	**6/12/2015**	RunNo:	**78271**
Client ID:	**LCSS**	Batch ID:	**36885**	TestNo:	**SW6010B**	**SW3050B**		Analysis Date:	**6/15/2015**	SeqNo:	**1516675**

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Arsenic	23,000	2,000	25,000	0	92.4	82	111				
Barium	24,000	10,000	25,000	0	96.1	83	113				
Cadmium	24,000	250	25,000	0	94.4	82	113				
Chromium	24,000	500	25,000	0	97.3	85	113				
Copper	25,000	5,000	25,000	0	98.3	81	117				
Iron	240,000	15,000	250,000	0	96.4	81	118				
Lead	24,000	5,000	25,000	0	95.9	81	112				
Manganese	25,000	1,000	25,000	0	100	84	114				
Nickel	26,000	5,000	25,000	0	102	83	113				
Silver	23,000	1,000	25,000	0	92.4	82	112				
Zinc	24,000	5,000	25,000	0	94.1	82	113				

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** 36885

Sample ID:	1506418-001CMS	Samp Type:	MS	Test Code:	SW_6010S	Units:	µg/Kg-dry	Prep Date:	6/12/2015	RunNo:	78271
Client ID:	SB-15-01	Batch ID:	36885	TestNo:	SW6010B	SW3050B		Analysis Date:	6/15/2015	SeqNo:	1516677

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Antimony	24,000	1,000	25,800	0	94.8	79	114				
Arsenic	27,000	2,100	25,800	0	105	82	111				
Barium	34,000	10,000	25,800	7,673	103	83	113				
Beryllium	25,000	260	25,800	0	98.0	83	113				
Cadmium	26,000	260	25,800	68.07	98.8	82	113				
Chromium	28,000	520	25,800	4,248	94.0	85	113				
Copper	29,000	5,200	25,800	1,669	106	81	117				
Lead	25,000	5,200	25,800	1,730	88.9	81	112				
Manganese	110,000	1,000	25,800	86,270	92.9	84	114				
Nickel	33,000	5,200	25,800	2,868	116	83	113				Q
Selenium	24,000	2,100	25,800	0	92.7	78	111				
Silver	26,000	1,000	25,800	0	103	82	112				
Thallium	22,000	2,100	25,800	0	84.0	83	111				
Zinc	19,000	5,200	25,800	0	75.6	82	113				Q

Sample ID:	1506418-001CMSD	Samp Type:	MSD	Test Code:	SW_6010S	Units:	µg/Kg-dry	Prep Date:	6/12/2015	RunNo:	78271
Client ID:	SB-15-01	Batch ID:	36885	TestNo:	SW6010B	SW3050B		Analysis Date:	6/15/2015	SeqNo:	1516678

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Arsenic	26,000	2,100	26,200	0	101	82	111	27,040	2.48	20	
Barium	35,000	10,000	26,200	7,673	103	83	113	34,350	0.552	20	
Cadmium	26,000	260	26,200	68.07	98.0	82	113	25,560	0.679	20	
Chromium	28,000	520	26,200	4,248	91.2	85	113	28,500	1.26	20	
Copper	28,000	5,200	26,200	1,669	102	81	117	29,030	1.85	20	
Lead	24,000	5,200	26,200	1,730	86.9	81	112	24,670	0.751	20	
Manganese	110,000	1,000	26,200	86,270	101	84	114	110,200	2.23	20	
Nickel	32,000	5,200	26,200	2,868	110	83	113	32,670	2.71	20	
Silver	26,000	1,000	26,200	0	99.8	82	112	26,470	1.19	20	
Zinc	18,000	5,200	26,200	0	68.7	82	113	19,500	7.95	20	Q

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36885**

Sample ID:	MB-36885	Samp Type:	MBLK	Test Code:	WI_6010S	Units:	µg/Kg	Prep Date:	6/12/2015	RunNo:	78378
Client ID:	PBS	Batch ID:	36885	TestNo:	SW6010B	SW3050B		Analysis Date:	6/15/2015	SeqNo:	1519134

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Arsenic	2,000	2,000									U
Barium	6,700	6,700									U
Cadmium	100	100									U
Chromium	190	300									JT
Copper	1,000	2,000									JT
Iron	17,000	17,000									U
Lead	3,900	3,900									U
Manganese	700	700									U
Nickel	2,400	2,400									U
Silver	600	600									U
Zinc	1,700	1,700									U

Sample ID:	LCS-36885	Samp Type:	LCS	Test Code:	WI_6010S	Units:	µg/Kg	Prep Date:	6/12/2015	RunNo:	78378
Client ID:	LCSS	Batch ID:	36885	TestNo:	SW6010B	SW3050B		Analysis Date:	6/15/2015	SeqNo:	1519135

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Arsenic	23,000	2,000	25,000	0	92.4	82	111				
Barium	24,000	6,700	25,000	0	96.1	83	113				
Cadmium	24,000	100	25,000	0	94.4	82	113				
Chromium	24,000	300	25,000	0	97.3	85	113				
Copper	25,000	2,000	25,000	0	98.3	81	117				
Iron	240,000	17,000	250,000	0	96.4	81	118				
Lead	24,000	3,900	25,000	0	95.9	81	112				
Manganese	25,000	700	25,000	0	100	84	114				
Nickel	26,000	2,400	25,000	0	102	83	113				
Silver	23,000	600	25,000	0	92.4	82	112				
Zinc	24,000	1,700	25,000	0	94.1	82	113				

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36885**

Sample ID:	1506418-001CMS	Samp Type:	MS	Test Code:	WI_6010S	Units:	µg/Kg-dry	Prep Date:	6/12/2015	RunNo:	78378
Client ID:	SB-15-01	Batch ID:	36885	TestNo:	SW6010B	SW3050B		Analysis Date:	6/15/2015	SeqNo:	1519137

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Arsenic	27,000	2,100	25,800	0	105	82	111				
Barium	34,000	6,900	25,800	7,673	103	83	113				
Cadmium	26,000	100	25,800	68.07	98.8	82	113				
Chromium	28,000	310	25,800	4,248	94.0	85	113				
Copper	29,000	2,100	25,800	1,669	106	81	117				
Iron	3,900,000	18,000	258,000	3,621,000	127	81	118				JQ
Lead	25,000	4,000	25,800	1,730	88.9	81	112				
Manganese	110,000	720	25,800	86,270	92.9	84	114				
Nickel	33,000	2,500	25,800	2,868	116	83	113				Q
Silver	26,000	620	25,800	0	103	82	112				
Zinc	19,000	1,800	25,800	0	75.6	82	113				Q

Sample ID:	1506418-001CMSD	Samp Type:	MSD	Test Code:	WI_6010S	Units:	µg/Kg-dry	Prep Date:	6/12/2015	RunNo:	78378
Client ID:	SB-15-01	Batch ID:	36885	TestNo:	SW6010B	SW3050B		Analysis Date:	6/15/2015	SeqNo:	1519138

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Arsenic	26,000	2,100	26,200	0	101	82	111	27,040	2.48	20	
Barium	35,000	7,000	26,200	7,673	103	83	113	34,350	0.552	20	
Cadmium	26,000	100	26,200	68.07	98.0	82	113	25,560	0.679	20	
Chromium	28,000	310	26,200	4,248	91.2	85	113	28,500	1.26	20	
Copper	28,000	2,100	26,200	1,669	102	81	117	29,030	1.85	20	
Iron	4,000,000	18,000	262,000	3,621,000	137	81	118	3,947,000	0.841	20	JQ
Lead	24,000	4,100	26,200	1,730	86.9	81	112	24,670	0.751	20	
Manganese	110,000	730	26,200	86,270	101	84	114	110,200	2.23	20	
Nickel	32,000	2,500	26,200	2,868	110	83	113	32,670	2.71	20	
Silver	26,000	630	26,200	0	99.8	82	112	26,470	1.19	20	
Zinc	18,000	1,800	26,200	0	68.7	82	113	19,500	7.95	20	Q

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36886**

Sample ID:	LCS-36886	Samp Type:	LCS	Test Code:	WI_9071	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	78414
Client ID:	LCSS	Batch ID:	36886	TestNo:	SW9071	SW3540C		Analysis Date:	6/17/2015	SeqNo:	1519611

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Oil & Grease, Total	1,100	160	1,313	0	85.3	70	120				

Sample ID:	MB-36886	Samp Type:	MBLK	Test Code:	WI_9071	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	78414
Client ID:	PBS	Batch ID:	36886	TestNo:	SW9071	SW3540C		Analysis Date:	6/17/2015	SeqNo:	1519612

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Oil & Grease, Total	170	170									U

Sample ID:	1506418-001BMS	Samp Type:	MS	Test Code:	WI_9071	Units:	mg/Kg-dry	Prep Date:	6/12/2015	RunNo:	78414
Client ID:	SB-15-01	Batch ID:	36886	TestNo:	SW9071	SW3540C		Analysis Date:	6/17/2015	SeqNo:	1519614

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Oil & Grease, Total	1,500	230	1,802	144.2	73.8	70	120				

Sample ID:	1506418-001BMSD	Samp Type:	MSD	Test Code:	WI_9071	Units:	mg/Kg-dry	Prep Date:	6/12/2015	RunNo:	78414
Client ID:	SB-15-01	Batch ID:	36886	TestNo:	SW9071	SW3540C		Analysis Date:	6/17/2015	SeqNo:	1519615

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Oil & Grease, Total	1,500	230	1,802	144.2	73.3	70	120	1,473	0.613	25	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** 36902

Sample ID:	MB-36902	Samp Type:	MBLK	Test Code:	SW_7471S	Units:	µg/Kg	Prep Date:	6/15/2015	RunNo:	78311	
Client ID:	PBS	Batch ID:	36902	TestNo:	SW7471A	SW7471A		Analysis Date:	6/15/2015	SeqNo:	1517596	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	8.2	8.2									U	

Sample ID:	LCS-36902	Samp Type:	LCS	Test Code:	SW_7471S	Units:	µg/Kg	Prep Date:	6/15/2015	RunNo:	78311	
Client ID:	LCSS	Batch ID:	36902	TestNo:	SW7471A	SW7471A		Analysis Date:	6/15/2015	SeqNo:	1517597	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	61	12	60.00	0	101	80	124					

Sample ID:	MB-36902	Samp Type:	MBLK	Test Code:	WI_7471S	Units:	µg/Kg	Prep Date:	6/15/2015	RunNo:	78514	
Client ID:	PBS	Batch ID:	36902	TestNo:	SW7471A	SW7471A		Analysis Date:	6/15/2015	SeqNo:	1521412	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	5.1	5.1									U	

Sample ID:	LCS-36902	Samp Type:	LCS	Test Code:	WI_7471S	Units:	µg/Kg	Prep Date:	6/15/2015	RunNo:	78514	
Client ID:	LCSS	Batch ID:	36902	TestNo:	SW7471A	SW7471A		Analysis Date:	6/15/2015	SeqNo:	1521413	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	61	7.4	60.00	0	101	80	124					

Sample ID:	1506506-001BMS	Samp Type:	MS	Test Code:	WI_7471S	Units:	µg/Kg-dry	Prep Date:	6/15/2015	RunNo:	78514	
Client ID:	ZZZZZZ	Batch ID:	36902	TestNo:	SW7471A	SW7471A		Analysis Date:	6/15/2015	SeqNo:	1521415	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	140	7.5	60.64	100.0	70.0	80	124				Q	

Sample ID:	1506506-001BMSD	Samp Type:	MSD	Test Code:	WI_7471S	Units:	µg/Kg-dry	Prep Date:	6/15/2015	RunNo:	78514	
Client ID:	ZZZZZZ	Batch ID:	36902	TestNo:	SW7471A	SW7471A		Analysis Date:	6/15/2015	SeqNo:	1521416	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	150	7.5	60.64	100.0	75.0	80	124	142.5	2.11	20	Q	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36922**

Sample ID:	LCS-36922	Samp Type:	LCS	Test Code:	SW_8081S	Units:	µg/Kg	Prep Date:	6/17/2015	RunNo:	78850
Client ID:	LCSS	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1529215

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
4,4'-DDD	7.3	1.7	8.116	0	90.5	56	139				
4,4'-DDE	7.4	0.81	8.116	0	91.1	56	134				
4,4'-DDT	7.1	0.81	8.116	0	87.0	50	141				
Aldrin	7.1	0.81	8.116	0	88.0	45	136				
alpha-BHC	7.0	0.81	8.116	0	86.4	45	137				
alpha-Chlordane	7.2	0.81	8.116	0	89.1	54	133				
beta-BHC	6.7	0.81	8.116	0	82.5	50	136				
Chlordane (Technical)	16	16	8.116	0	0	43	149				QU
delta-BHC	6.7	0.81	8.116	0	82.4	47	139				
Dieldrin	7.4	0.81	8.116	0	91.0	56	136				
Endosulfan I	7.1	0.81	8.116	0	87.0	53	132				
Endosulfan II	6.7	0.81	8.116	0	82.4	53	134				
Endosulfan sulfate	6.0	0.81	8.116	0	73.4	55	136				
Endrin	7.3	0.81	8.116	0	89.7	57	140				
Endrin aldehyde	5.6	0.81	8.116	0	68.4	35	137				
Endrin ketone	6.9	0.81	8.116	0	85.5	55	136				
gamma-BHC	7.1	0.81	8.116	0	87.1	49	135				
gamma-Chlordane	7.4	0.81	8.116	0	91.1	53	135				
Heptachlor	6.9	0.81	8.116	0	85.2	47	136				
Heptachlor epoxide	7.3	0.81	8.116	0	89.6	52	136				
Methoxychlor	6.8	0.81	8.116	0	84.3	52	143				
Toxaphene	16	16	8.116	0	0	33	141				QU
Surr: Decachlorobiphenyl	7.7		8.116		95.2	55	130				
Surr: Tetrachloro-m-xylene	7.1		8.116		87.1	42	129				

Sample ID:	MB-36922	Samp Type:	MBLK	Test Code:	SW_8081S	Units:	µg/Kg	Prep Date:	6/17/2015	RunNo:	78850
Client ID:	PBS	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1529216

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
4,4'-DDD	1.7	1.7									U
4,4'-DDE	0.82	0.82									U

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36922**

Sample ID:	MB-36922	Samp Type:	MBLK	Test Code:	SW_8081S	Units:	µg/Kg	Prep Date:	6/17/2015	RunNo:	78850
Client ID:	PBS	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1529216

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
4,4'-DDT	0.82	0.82									U
Aldrin	0.82	0.82									U
alpha-BHC	0.82	0.82									U
alpha-Chlordane	0.82	0.82									U
beta-BHC	0.82	0.82									U
Chlordane (Technical)	17	17									U
delta-BHC	0.82	0.82									U
Dieldrin	0.82	0.82									U
Endosulfan I	0.82	0.82									U
Endosulfan II	0.82	0.82									U
Endosulfan sulfate	0.82	0.82									U
Endrin	0.82	0.82									U
Endrin aldehyde	0.82	0.82									U
Endrin ketone	0.82	0.82									U
gamma-BHC	0.82	0.82									U
gamma-Chlordane	0.82	0.82									U
Heptachlor	0.82	0.82									U
Heptachlor epoxide	0.82	0.82									U
Methoxychlor	0.82	0.82									U
Toxaphene	17	17									U
Surr: Decachlorobiphenyl	8.5		8.237		103	55	130				
Surr: Tetrachloro-m-xylene	7.8		8.237		94.4	42	129				

Sample ID:	1506418-001BMS	Samp Type:	MS	Test Code:	SW_8081S	Units:	µg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78850
Client ID:	SB-15-01	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1543947

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
4,4'-DDD	10	2.3	11.15	0	91.8	56	139				
4,4'-DDE	11	1.1	11.15	0	94.8	56	134				
4,4'-DDT	9.5	1.1	11.15	0	85.2	50	141				
Aldrin	10	1.1	11.15	0	90.8	45	136				

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** 36922

Sample ID: **1506418-001BMS** Samp Type: **MS** Test Code: **SW_8081S** Units: **µg/Kg-dry** Prep Date: **6/17/2015** RunNo: **78850**

Client ID: **SB-15-01** Batch ID: **36922** TestNo: **SW8081A** **SW3550C** Analysis Date: **7/6/2015** SeqNo: **1543947**

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
alpha-BHC	8.9	1.1	11.15	0	79.5	45	137				
alpha-Chlordane	10	1.1	11.15	0	92.3	54	133				
beta-BHC	9.5	1.1	11.15	0	84.9	50	136				
Chlordane (Technical)	22	22	11.15	0	0	43	149				QU
delta-BHC	10	1.1	11.15	0	91.1	47	139				
Dieldrin	11	1.1	11.15	0	96.4	56	136				
Endosulfan I	10	1.1	11.15	0	91.5	53	132				
Endosulfan II	10	1.1	11.15	0	92.5	53	134				
Endosulfan sulfate	9.8	1.1	11.15	0	87.8	55	136				
Endrin	11	1.1	11.15	0	96.3	57	140				
Endrin aldehyde	8.9	1.1	11.15	0	80.0	35	137				
Endrin ketone	9.9	1.1	11.15	0	89.1	55	136				
gamma-BHC	10	1.1	11.15	0	91.7	49	135				
gamma-Chlordane	9.8	1.1	11.15	0	87.7	53	135				
Heptachlor	9.3	1.1	11.15	0	83.3	47	136				
Heptachlor epoxide	9.5	1.1	11.15	0	84.8	52	136				
Methoxychlor	9.3	1.1	11.15	0	83.8	52	143				
Toxaphene	22	22	11.15	0	0	33	141				QU
Surr: Decachlorobiphenyl	11		11.15		103	55	130				J
Surr: Tetrachloro-m-xylene	11		11.15		98.6	42	129				J

Sample ID: **1506418-001BMSD** Samp Type: **MSD** Test Code: **SW_8081S** Units: **µg/Kg-dry** Prep Date: **6/17/2015** RunNo: **78850**

Client ID: **SB-15-01** Batch ID: **36922** TestNo: **SW8081A** **SW3550C** Analysis Date: **7/6/2015** SeqNo: **1543948**

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
4,4'-DDD	11	2.2	10.91	0	98.2	56	139	10.23	4.71	25	
4,4'-DDE	11	1.1	10.91	0	100	56	134	10.57	3.39	25	
4,4'-DDT	9.7	1.1	10.91	0	89.3	50	141	9.501	2.59	25	
Aldrin	10	1.1	10.91	0	95.8	45	136	10.12	3.27	25	
alpha-BHC	9.2	1.1	10.91	0	84.7	45	137	8.866	4.23	25	
alpha-Chlordane	11	1.1	10.91	0	98.3	54	133	10.28	4.24	25	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** 36922

Sample ID:	1506418-001BMSD	Samp Type:	MSD	Test Code:	SW_8081S	Units:	µg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78850	
Client ID:	SB-15-01	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1543948	

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
beta-BHC	9.7	1.1	10.91	0	89.3	50	136	9.460	2.95	25	
Chlordane (Technical)	22	22	10.91	0	0	43	149	0	0	25	QU
delta-BHC	11	1.1	10.91	0	97.3	47	139	10.15	4.51	25	
Dieldrin	11	1.1	10.91	0	103	56	136	10.74	4.87	25	
Endosulfan I	11	1.1	10.91	0	98.2	53	132	10.19	4.99	25	
Endosulfan II	11	1.1	10.91	0	98.8	53	134	10.31	4.49	25	
Endosulfan sulfate	10	1.1	10.91	0	92.0	55	136	9.788	2.57	25	
Endrin	11	1.1	10.91	0	103	57	140	10.73	5.09	25	
Endrin aldehyde	8.9	1.1	10.91	0	81.7	35	137	8.917	0.0453	25	
Endrin ketone	10	1.1	10.91	0	95.2	55	136	9.934	4.51	25	
gamma-BHC	9.8	1.1	10.91	0	90.1	49	135	10.22	3.86	25	
gamma-Chlordane	8.9	1.1	10.91	0	81.7	53	135	9.770	9.11	25	
Heptachlor	10	1.1	10.91	0	91.2	47	136	9.280	7.05	25	
Heptachlor epoxide	9.4	1.1	10.91	0	86.6	52	136	9.451	0.0138	25	
Methoxychlor	9.7	1.1	10.91	0	89.3	52	143	9.340	4.21	25	
Toxaphene	22	22	10.91	0	0	33	141	0	0	25	QU
Surr: Decachlorobiphenyl	11		10.91		103	55	130		0	25	J
Surr: Tetrachloro-m-xylene	11		10.91		101	42	129		0	25	J

Sample ID:	LCS-36922	Samp Type:	LCS	Test Code:	WI_8081S	Units:	µg/Kg	Prep Date:	6/17/2015	RunNo:	78850	
Client ID:	LCSS	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1529921	

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
4,4'-DDD	7.3	1.8	8.116	0	90.5	56	139				
4,4'-DDE	7.4	1.1	8.116	0	91.1	56	134				
4,4'-DDT	7.1	1.2	8.116	0	87.0	50	141				
Aldrin	7.1	1.1	8.116	0	88.0	45	136				
alpha-BHC	7.0	0.98	8.116	0	86.4	45	137				
alpha-Chlordane	7.2	1.2	8.116	0	89.1	54	133				
beta-BHC	6.7	1.2	8.116	0	82.5	50	136				
Chlordane (Technical)	11	11	8.116	0	0	43	149				QU

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** 36922

Sample ID:	LCS-36922	Samp Type:	LCS	Test Code:	WI_8081S	Units:	µg/Kg	Prep Date:	6/17/2015	RunNo:	78850
Client ID:	LCSS	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1529921

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
delta-BHC	6.7	0.98	8.116	0	82.4	47	139				
Dieldrin	7.4	1.2	8.116	0	91.0	56	136				
Endosulfan I	7.1	1.3	8.116	0	87.0	53	132				
Endosulfan II	6.7	1.2	8.116	0	82.4	53	134				
Endosulfan sulfate	6.0	1.3	8.116	0	73.4	55	136				
Endrin	7.3	1.3	8.116	0	89.7	57	140				
Endrin aldehyde	5.6	1.3	8.116	0	68.4	35	137				
Endrin ketone	6.9	1.2	8.116	0	85.5	55	136				
gamma-BHC	7.1	0.98	8.116	0	87.1	49	135				
gamma-Chlordane	7.4	1.2	8.116	0	91.1	53	135				
Heptachlor	6.9	1.2	8.116	0	85.2	47	136				
Heptachlor epoxide	7.3	1.2	8.116	0	89.6	52	136				
Methoxychlor	6.8	1.3	8.116	0	84.3	52	143				
Toxaphene	16	16	8.116	0	0	33	141				QU
Surr: Decachlorobiphenyl	7.7		8.116		95.2	55	130				
Surr: Tetrachloro-m-xylene	7.1		8.116		87.1	42	129				

Sample ID:	MB-36922	Samp Type:	MBLK	Test Code:	WI_8081S	Units:	µg/Kg	Prep Date:	6/17/2015	RunNo:	78850
Client ID:	PBS	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1529922

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
4,4'-DDD	1.8	1.8									U
4,4'-DDE	1.1	1.1									U
4,4'-DDT	1.2	1.2									U
Aldrin	1.1	1.1									U
alpha-BHC	0.99	0.99									U
alpha-Chlordane	1.2	1.2									U
beta-BHC	1.2	1.2									U
Chlordane (Technical)	12	12									U
delta-BHC	0.99	0.99									U
Dieldrin	1.2	1.2									U

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** 36922

Sample ID:	MB-36922	Samp Type:	MBLK	Test Code:	WI_8081S	Units:	µg/Kg	Prep Date:	6/17/2015	RunNo:	78850
Client ID:	PBS	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1529922

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Endosulfan I	1.3	1.3									U
Endosulfan II	1.2	1.2									U
Endosulfan sulfate	1.3	1.3									U
Endrin	1.3	1.3									U
Endrin aldehyde	1.3	1.3									U
Endrin ketone	1.2	1.2									U
gamma-BHC	0.99	0.99									U
gamma-Chlordane	1.2	1.2									U
Heptachlor	1.2	1.2									U
Heptachlor epoxide	1.2	1.2									U
Methoxychlor	1.3	1.3									U
Toxaphene	17	17									U
Surr: Decachlorobiphenyl	8.5		8.237		103	55	130				
Surr: Tetrachloro-m-xylene	7.8		8.237		94.4	42	129				

Sample ID:	1506418-001BMS	Samp Type:	MS	Test Code:	WI_8081S	Units:	µg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78850
Client ID:	SB-15-01	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1543949

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
4,4'-DDD	10	2.4	11.15	0	91.8	56	139				
4,4'-DDE	11	1.5	11.15	0	94.8	56	134				
4,4'-DDT	9.5	1.6	11.15	0	85.2	50	141				
Aldrin	10	1.5	11.15	0	90.8	45	136				
alpha-BHC	8.9	1.3	11.15	0	79.5	45	137				
alpha-Chlordane	10	1.6	11.15	0	92.3	54	133				
beta-BHC	9.5	1.6	11.15	0	84.9	50	136				
Chlordane (Technical)	16	16	11.15	0	0	43	149				QU
delta-BHC	10	1.3	11.15	0	91.1	47	139				
Dieldrin	11	1.6	11.15	0	96.4	56	136				
Endosulfan I	10	1.7	11.15	0	91.5	53	132				
Endosulfan II	10	1.6	11.15	0	92.5	53	134				

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** 36922

Sample ID:	1506418-001BMS	Samp Type:	MS	Test Code:	WI_8081S	Units:	µg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78850
Client ID:	SB-15-01	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1543949

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Endosulfan sulfate	9.8	1.7	11.15	0	87.8	55	136				
Endrin	11	1.7	11.15	0	96.3	57	140				
Endrin aldehyde	8.9	1.7	11.15	0	80.0	35	137				
Endrin ketone	9.9	1.6	11.15	0	89.1	55	136				
gamma-BHC	10	1.3	11.15	0	91.7	49	135				
gamma-Chlordane	9.8	1.6	11.15	0	87.7	53	135				
Heptachlor	9.3	1.6	11.15	0	83.3	47	136				
Heptachlor epoxide	9.5	1.6	11.15	0	84.8	52	136				
Methoxychlor	9.3	1.7	11.15	0	83.8	52	143				
Toxaphene	22	22	11.15	0	0	33	141				QU
Surr: Decachlorobiphenyl	11		11.15		103	55	130				
Surr: Tetrachloro-m-xylene	11		11.15		98.6	42	129				

Sample ID:	1506418-001BMSD	Samp Type:	MSD	Test Code:	WI_8081S	Units:	µg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78850
Client ID:	SB-15-01	Batch ID:	36922	TestNo:	SW8081A	SW3550C		Analysis Date:	7/6/2015	SeqNo:	1543950

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
4,4'-DDD	11	2.4	10.91	0	98.2	56	139	10.23	4.71	25	
4,4'-DDE	11	1.4	10.91	0	100	56	134	10.57	3.39	25	
4,4'-DDT	9.7	1.6	10.91	0	89.3	50	141	9.501	2.59	25	
Aldrin	10	1.4	10.91	0	95.8	45	136	10.12	3.27	25	
alpha-BHC	9.2	1.3	10.91	0	84.7	45	137	8.866	4.23	25	
alpha-Chlordane	11	1.6	10.91	0	98.3	54	133	10.28	4.24	25	
beta-BHC	9.7	1.6	10.91	0	89.3	50	136	9.460	2.95	25	
Chlordane (Technical)	15	15	10.91	0	0	43	149	0	0	25	
delta-BHC	11	1.3	10.91	0	97.3	47	139	10.15	4.51	25	
Dieldrin	11	1.6	10.91	0	103	56	136	10.74	4.87	25	
Endosulfan I	11	1.7	10.91	0	98.2	53	132	10.19	4.99	25	
Endosulfan II	11	1.6	10.91	0	98.8	53	134	10.31	4.49	25	
Endosulfan sulfate	10	1.7	10.91	0	92.0	55	136	9.788	2.57	25	
Endrin	11	1.7	10.91	0	103	57	140	10.73	5.09	25	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36922**

Sample ID:	**1506418-001BMSD**	Samp Type:	**MSD**	Test Code:	**WI_8081S**	Units:	**µg/Kg-dry**	Prep Date:	**6/17/2015**	RunNo:	**78850**
Client ID:	**SB-15-01**	Batch ID:	**36922**	TestNo:	**SW8081A**	**SW3550C**		Analysis Date:	**7/6/2015**	SeqNo:	**1543950**

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Endrin aldehyde	8.9	1.7	10.91	0	81.7	35	137	8.917	0.0453	25	
Endrin ketone	10	1.6	10.91	0	95.2	55	136	9.934	4.51	25	
gamma-BHC	9.8	1.3	10.91	0	90.1	49	135	10.22	3.86	25	
gamma-Chlordane	8.9	1.6	10.91	0	81.7	53	135	9.770	9.11	25	
Heptachlor	10	1.6	10.91	0	91.2	47	136	9.280	7.05	25	
Heptachlor epoxide	9.4	1.6	10.91	0	86.6	52	136	9.451	0.0138	25	
Methoxychlor	9.7	1.7	10.91	0	89.3	52	143	9.340	4.21	25	
Toxaphene	22	22	10.91	0	0	33	141	0	0	25	
Surr: Decachlorobiphenyl	11		10.91		103	55	130		0	25	
Surr: Tetrachloro-m-xylene	11		10.91		101	42	129		0	25	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** 36923

Sample ID:	1506418-003BMS	Samp Type:	MS	Test Code:	WI_8082S	Units:	µg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78545
Client ID:	SB-15-03	Batch ID:	36923	TestNo:	SW8082	SW3550C		Analysis Date:	6/23/2015	SeqNo:	1522532

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Aroclor 1016	200	2.6	218.7	0	92.9	46	129				
Aroclor 1260	190	2.6	218.7	0	86.2	45	134				
Surr: Tetrachloro-m-xylene	11		10.93		99.0	44	130				
Surr: Decachlorobiphenyl	9.5		10.93		86.5	40	135				

Sample ID:	1506418-003BMSD	Samp Type:	MSD	Test Code:	WI_8082S	Units:	µg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78545
Client ID:	SB-15-03	Batch ID:	36923	TestNo:	SW8082	SW3550C		Analysis Date:	6/23/2015	SeqNo:	1522533

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Aroclor 1016	200	2.6	216.2	0	92.1	46	129	203.1	1.93	25	
Aroclor 1260	190	2.6	216.2	0	87.2	45	134	188.6	0.0287	25	
Surr: Tetrachloro-m-xylene	10		10.81		96.5	44	130		0	25	
Surr: Decachlorobiphenyl	9.2		10.81		85.1	40	135		0	25	

Sample ID:	LCS-36923	Samp Type:	LCS	Test Code:	WI_8082S	Units:	µg/Kg	Prep Date:	6/17/2015	RunNo:	78545
Client ID:	LCSS	Batch ID:	36923	TestNo:	SW8082	SW3550C		Analysis Date:	6/23/2015	SeqNo:	1522554

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Aroclor 1016	120	2.0	164.3	0	73.8	46	129				
Aroclor 1260	110	2.0	164.3	0	68.0	45	134				
Surr: Tetrachloro-m-xylene	7.3		8.216		89.0	44	130				
Surr: Decachlorobiphenyl	7.2		8.216		88.2	40	135				

Sample ID:	MB-36923	Samp Type:	MBLK	Test Code:	WI_8082S	Units:	µg/Kg	Prep Date:	6/17/2015	RunNo:	78545
Client ID:	PBS	Batch ID:	36923	TestNo:	SW8082	SW3550C		Analysis Date:	6/23/2015	SeqNo:	1522555

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Aroclor 1016	2.0	2.0									U
Aroclor 1221	2.0	2.0									U
Aroclor 1232	2.0	2.0									U
Aroclor 1242	2.0	2.0									U
Aroclor 1248	2.0	2.0									U

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36923**

Sample ID:	**MB-36923**	Samp Type:	**MBLK**	Test Code:	**WI_8082S**	Units:	**µg/Kg**	Prep Date:	**6/17/2015**	RunNo:	**78545**
Client ID:	**PBS**	Batch ID:	**36923**	TestNo:	**SW8082**	**SW3550C**		Analysis Date:	**6/23/2015**	SeqNo:	**1522555**

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Aroclor 1254	2.0	2.0									U
Aroclor 1260	2.0	2.0									U
Aroclor 1262	2.0	2.0									U
Aroclor 1268	2.0	2.0									U
Total PCBs	2.0	2.0									U
Surr: Tetrachloro-m-xylene	7.2		8.270		87.2	44	130				
Surr: Decachlorobiphenyl	6.3		8.270		76.6	60	125				

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36931**

Sample ID:	MB-36931	Samp Type:	MBLK	Test Code:	SW_7471S	Units:	µg/Kg	Prep Date:	6/18/2015	RunNo:	78485	
Client ID:	PBS	Batch ID:	36931	TestNo:	SW7471A	SW7471A		Analysis Date:	6/19/2015	SeqNo:	1520878	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	8.8	8.8									U	

Sample ID:	LCS-36931	Samp Type:	LCS	Test Code:	SW_7471S	Units:	µg/Kg	Prep Date:	6/18/2015	RunNo:	78485	
Client ID:	LCSS	Batch ID:	36931	TestNo:	SW7471A	SW7471A		Analysis Date:	6/19/2015	SeqNo:	1520879	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	57	9.8	49.18	0	115	80	124					

Sample ID:	1506270-001EMS	Samp Type:	MS	Test Code:	SW_7471S	Units:	µg/Kg-dry	Prep Date:	6/18/2015	RunNo:	78485	
Client ID:	ZZZZZZ	Batch ID:	36931	TestNo:	SW7471A	SW7471A		Analysis Date:	6/19/2015	SeqNo:	1520881	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	62	12	59.66	0	104	80	124					

Sample ID:	1506270-001EMSD	Samp Type:	MSD	Test Code:	SW_7471S	Units:	µg/Kg-dry	Prep Date:	6/18/2015	RunNo:	78485	
Client ID:	ZZZZZZ	Batch ID:	36931	TestNo:	SW7471A	SW7471A		Analysis Date:	6/19/2015	SeqNo:	1520882	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	58	12	59.66	0	97.8	80	124	62.11	6.24	20		

Sample ID:	MB-36931	Samp Type:	MBLK	Test Code:	WI_7471S	Units:	µg/Kg	Prep Date:	6/18/2015	RunNo:	78526	
Client ID:	PBS	Batch ID:	36931	TestNo:	SW7471A	SW7471A		Analysis Date:	6/19/2015	SeqNo:	1521714	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	5.5	5.5									U	

Sample ID:	LCS-36931	Samp Type:	LCS	Test Code:	WI_7471S	Units:	µg/Kg	Prep Date:	6/18/2015	RunNo:	78526	
Client ID:	LCSS	Batch ID:	36931	TestNo:	SW7471A	SW7471A		Analysis Date:	6/19/2015	SeqNo:	1521715	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Mercury	57	6.1	49.18	0	115	80	124					

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36931**

Sample ID:	1506270-001EMS	Samp Type:	MS	Test Code:	WI_7471S	Units:	µg/Kg-dry	Prep Date:	6/18/2015	RunNo:	78526
Client ID:	ZZZZZZ	Batch ID:	36931	TestNo:	SW7471A	SW7471A		Analysis Date:	6/19/2015	SeqNo:	1521717

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Mercury	62	7.4	59.66	0	104	80	124				

Sample ID:	1506270-001EMSD	Samp Type:	MSD	Test Code:	WI_7471S	Units:	µg/Kg-dry	Prep Date:	6/18/2015	RunNo:	78526
Client ID:	ZZZZZZ	Batch ID:	36931	TestNo:	SW7471A	SW7471A		Analysis Date:	6/19/2015	SeqNo:	1521718

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Mercury	58	7.4	59.66	0	97.8	80	124	62.11	6.24	20	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36933**

Sample ID:	MB-36933	Samp Type:	MBLK	Test Code:	WI_9060S	Units:	mg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78732
Client ID:	PBS	Batch ID:	36933	TestNo:	SW9060			Analysis Date:	6/29/2015	SeqNo:	1526182

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Organic Carbon, Total	2,300	2,300									U

Sample ID:	LCS-36933	Samp Type:	LCS	Test Code:	WI_9060S	Units:	mg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78732
Client ID:	LCSS	Batch ID:	36933	TestNo:	SW9060			Analysis Date:	6/29/2015	SeqNo:	1526183

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Organic Carbon, Total	17,000	2,300	20,000	0	87.3	80	120				

Sample ID:	1506418-001CMS	Samp Type:	MS	Test Code:	WI_9060S	Units:	mg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78732
Client ID:	SB-15-01	Batch ID:	36933	TestNo:	SW9060			Analysis Date:	6/29/2015	SeqNo:	1526187

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Organic Carbon, Total	51,000	2,400	20,630	24,390	130	70	130				

Sample ID:	1506418-001CMSD	Samp Type:	MSD	Test Code:	WI_9060S	Units:	mg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78732
Client ID:	SB-15-01	Batch ID:	36933	TestNo:	SW9060			Analysis Date:	6/29/2015	SeqNo:	1526188

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Organic Carbon, Total	49,000	2,400	21,070	24,390	118	70	130	51,170	3.94	25	

Sample ID:	MB-36933-2	Samp Type:	MBLK	Test Code:	WI_9060S	Units:	mg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78734
Client ID:	PBS	Batch ID:	36933	TestNo:	SW9060			Analysis Date:	6/30/2015	SeqNo:	1526310

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Organic Carbon, Total	2,300	2,300									U

Sample ID:	LCS-36933-2	Samp Type:	LCS	Test Code:	WI_9060S	Units:	mg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78734
Client ID:	LCSS	Batch ID:	36933	TestNo:	SW9060			Analysis Date:	6/30/2015	SeqNo:	1526311

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Organic Carbon, Total	17,000	2,300	20,000	0	86.2	80	120				

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36933**

Sample ID:	1506418-011CMS	Samp Type:	MS	Test Code:	WI_9060S	Units:	mg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78734
Client ID:	SB-15-11	Batch ID:	36933	TestNo:	SW9060			Analysis Date:	6/30/2015	SeqNo:	1526315

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Organic Carbon, Total	93,000	3,900	33,480	59,480	101	70	130				J

Sample ID:	1506418-011CMSD	Samp Type:	MSD	Test Code:	WI_9060S	Units:	mg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78734
Client ID:	SB-15-11	Batch ID:	36933	TestNo:	SW9060			Analysis Date:	6/30/2015	SeqNo:	1526316

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Organic Carbon, Total	94,000	4,100	36,060	59,480	95.6	70	130	93,400	0.573	25	J

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36934**

Sample ID:	MB-36934	Samp Type:	MBLK	Test Code:	WI_9012S	Units:	mg/Kg	Prep Date:	6/17/2015	RunNo:	78857
Client ID:	PBS	Batch ID:	36934	TestNo:	SW9012A			Analysis Date:	6/18/2015	SeqNo:	1529434

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Cyanide, Total	0.66	0.66									U

Sample ID:	LCS-36934	Samp Type:	LCS	Test Code:	WI_9012S	Units:	mg/Kg	Prep Date:	6/17/2015	RunNo:	78857
Client ID:	LCSS	Batch ID:	36934	TestNo:	SW9012A			Analysis Date:	6/18/2015	SeqNo:	1529435

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Cyanide, Total	1.9	0.66	2.000	0	93.7	76	120				

Sample ID:	1506418-001CMS	Samp Type:	MS	Test Code:	WI_9012S	Units:	mg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78857
Client ID:	SB-15-01	Batch ID:	36934	TestNo:	SW9012A			Analysis Date:	6/18/2015	SeqNo:	1529458

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Cyanide, Total	7.1	0.84	6.328	0	112	76	120				

Sample ID:	1506418-001CMSD	Samp Type:	MSD	Test Code:	WI_9012S	Units:	mg/Kg-dry	Prep Date:	6/17/2015	RunNo:	78857
Client ID:	SB-15-01	Batch ID:	36934	TestNo:	SW9012A			Analysis Date:	6/18/2015	SeqNo:	1529459

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Cyanide, Total	7.5	0.88	6.652	0	113	76	120	7.069	6.34	25	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36953**

Sample ID:	MB-36953	Samp Type:	MBLK	Test Code:	WI_8270S	Units:	µg/Kg	Prep Date:	6/19/2015	RunNo:	78679
Client ID:	PBS	Batch ID:	36953	TestNo:	SW8270C	SW3550C		Analysis Date:	6/28/2015	SeqNo:	1525026

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
2-Methylnaphthalene	9.8	9.8									U
Acenaphthene	9.5	9.5									U
Acenaphthylene	12	12									U
Anthracene	8.0	8.0									U
Benzo(a)anthracene	15	15									U
Benzo(a)pyrene	18	18									U
Benzo(b)fluoranthene	22	22									U
Benzo(g,h,i)perylene	14	14									U
Benzo(k)fluoranthene	17	17									U
Chrysene	10	10									U
Dibenzo(a,h)anthracene	22	22									U
Fluoranthene	14	14									U
Fluorene	18	18									U
Indeno(1,2,3-cd)pyrene	19	19									U
Naphthalene	11	11									U
Phenanthrene	23	23									U
Pyrene	17	17									U
Surr: 2-Fluorobiphenyl	720		832.5		86.5	44	115				
Surr: Nitrobenzene-d5	720		832.5		87.0	37	122				
Surr: Terphenyl-d14	750		832.5		90.2	54	127				

Sample ID:	LCS-36953	Samp Type:	LCS	Test Code:	WI_8270S	Units:	µg/Kg	Prep Date:	6/19/2015	RunNo:	78679
Client ID:	LCSS	Batch ID:	36953	TestNo:	SW8270C	SW3550C		Analysis Date:	6/28/2015	SeqNo:	1525027

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
2-Methylnaphthalene	550	9.6	650.8	0	84.1	38	122				
Acenaphthene	540	9.3	650.8	0	82.8	40	123				
Acenaphthylene	560	12	650.8	0	86.7	32	132				
Anthracene	570	7.8	650.8	0	88.3	47	123				
Benzo(a)anthracene	550	15	650.8	0	85.1	49	126				
Benzo(a)pyrene	570	18	650.8	0	87.4	45	129				

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36953**

Sample ID:	LCS-36953	Samp Type:	LCS	Test Code:	WI_8270S	Units:	µg/Kg	Prep Date:	6/19/2015	RunNo:	78679
Client ID:	LCSS	Batch ID:	36953	TestNo:	SW8270C	SW3550C		Analysis Date:	6/28/2015	SeqNo:	1525027

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	600	21	650.8	0	92.9	45	132				
Benzo(g,h,i)perylene	640	14	650.8	0	98.6	43	134				
Benzo(k)fluoranthene	560	17	650.8	0	86.0	47	132				
Chrysene	540	9.8	650.8	0	83.7	50	124				
Dibenzo(a,h)anthracene	640	21	650.8	0	98.3	45	134				
Fluoranthene	600	14	650.8	0	92.1	50	127				
Fluorene	560	18	650.8	0	86.5	43	125				
Indeno(1,2,3-cd)pyrene	610	19	650.8	0	93.7	45	133				
Naphthalene	530	11	650.8	0	81.2	35	123				
Phenanthrene	550	22	650.8	0	84.1	50	121				
Pyrene	560	17	650.8	0	86.8	47	127				
Surr: 2-Fluorobiphenyl	700		813.5		86.2	44	115				
Surr: Nitrobenzene-d5	710		813.5		87.2	37	122				
Surr: Terphenyl-d14	730		813.5		90.2	54	127				

Sample ID:	1506418-001BMS	Samp Type:	MS	Test Code:	WI_8270S	Units:	µg/Kg-dry	Prep Date:	6/19/2015	RunNo:	78679
Client ID:	SB-15-01	Batch ID:	36953	TestNo:	SW8270C	SW3550C		Analysis Date:	6/28/2015	SeqNo:	1525029

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
2-Methylnaphthalene	730	13	884.1	0	82.7	38	122				
Acenaphthene	710	13	884.1	0	79.9	40	123				
Acenaphthylene	770	16	884.1	0	87.1	32	132				
Anthracene	790	11	884.1	0	89.3	47	123				
Benzo(a)anthracene	740	20	884.1	7.524	83.1	49	126				
Benzo(a)pyrene	780	24	884.1	8.852	86.8	45	129				
Benzo(b)fluoranthene	800	29	884.1	0	90.0	45	132				
Benzo(g,h,i)perylene	820	19	884.1	0	92.2	43	134				
Benzo(k)fluoranthene	740	23	884.1	0	83.9	47	132				
Chrysene	730	13	884.1	0	82.8	50	124				
Dibenzo(a,h)anthracene	830	29	884.1	0	94.0	45	134				
Fluoranthene	820	19	884.1	8.410	91.9	50	127				

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** 36953

Sample ID:	1506418-001BMS	Samp Type:	MS	Test Code:	WI_8270S	Units:	µg/Kg-dry	Prep Date:	6/19/2015	RunNo:	78679
Client ID:	SB-15-01	Batch ID:	36953	TestNo:	SW8270C	SW3550C		Analysis Date:	6/28/2015	SeqNo:	1525029

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Fluorene	770	24	884.1	0	86.6	43	125				
Indeno(1,2,3-cd)pyrene	800	25	884.1	0	90.3	45	133				
Naphthalene	690	15	884.1	0	78.4	35	123				
Phenanthrene	740	31	884.1	0	83.7	50	121				
Pyrene	760	23	884.1	0	85.7	47	127				
Surr: 2-Fluorobiphenyl	930		1,105		84.0	44	115				
Surr: Nitrobenzene-d5	950		1,105		85.8	37	122				
Surr: Terphenyl-d14	980		1,105		88.6	54	127				

Sample ID:	1506418-001BMSD	Samp Type:	MSD	Test Code:	WI_8270S	Units:	µg/Kg-dry	Prep Date:	6/19/2015	RunNo:	78679
Client ID:	SB-15-01	Batch ID:	36953	TestNo:	SW8270C	SW3550C		Analysis Date:	6/29/2015	SeqNo:	1525030

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
2-Methylnaphthalene	780	13	899.7	0	86.4	38	122	731.6	6.06	25	
Acenaphthene	770	13	899.7	0	85.3	40	123	706.8	8.28	25	
Acenaphthylene	820	16	899.7	0	91.5	32	132	770.5	6.67	25	
Anthracene	830	11	899.7	0	92.5	47	123	789.9	5.27	25	
Benzo(a)anthracene	810	20	899.7	7.524	88.7	49	126	742.2	8.20	25	
Benzo(a)pyrene	830	24	899.7	8.852	91.0	45	129	776.7	6.36	25	
Benzo(b)fluoranthene	830	30	899.7	0	92.6	45	132	795.7	4.65	25	
Benzo(g,h,i)perylene	820	19	899.7	0	90.7	43	134	815.1	0.163	25	
Benzo(k)fluoranthene	820	23	899.7	0	91.7	47	132	742.2	10.6	25	
Chrysene	810	13	899.7	0	89.6	50	124	732.0	9.63	25	
Dibenzo(a,h)anthracene	850	30	899.7	0	94.2	45	134	831.5	1.96	25	
Fluoranthene	890	19	899.7	8.410	97.9	50	127	820.9	8.01	25	
Fluorene	820	24	899.7	0	91.3	43	125	765.6	7.09	25	
Indeno(1,2,3-cd)pyrene	810	26	899.7	0	89.9	45	133	798.8	1.30	25	
Naphthalene	740	15	899.7	0	81.7	35	123	693.1	5.87	25	
Phenanthrene	780	31	899.7	0	86.9	50	121	740.0	5.56	25	
Pyrene	830	23	899.7	0	92.7	47	127	757.6	9.59	25	
Surr: 2-Fluorobiphenyl	980		1,125		86.8	44	115		0	25	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36953**

Sample ID:	**1506418-001BMSD**	Samp Type:	**MSD**	Test Code:	**WI_8270S**	Units:	**µg/Kg-dry**	Prep Date:	**6/19/2015**	RunNo:	**78679**
Client ID:	**SB-15-01**	Batch ID:	**36953**	TestNo:	**SW8270C**	**SW3550C**		Analysis Date:	**6/29/2015**	SeqNo:	**1525030**

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	970		1,125		86.5	37	122		0	25	
Surr: Terphenyl-d14	1,000		1,125		91.5	54	127		0	25	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36970**

Sample ID:	LCS-36970	Samp Type:	LCS	Test Code:	WI_4500-NH3-DS	Units:	mg/Kg	Prep Date:	6/23/2015	RunNo:	78673
Client ID:	LCSS	Batch ID:	36970	TestNo:	A4500-NH3-D			Analysis Date:	6/26/2015	SeqNo:	1524880

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	98	2.7	100.0	0	97.5	80	120				

Sample ID:	MB-36970	Samp Type:	MBLK	Test Code:	WI_4500-NH3-DS	Units:	mg/Kg	Prep Date:	6/23/2015	RunNo:	78673
Client ID:	PBS	Batch ID:	36970	TestNo:	A4500-NH3-D			Analysis Date:	6/26/2015	SeqNo:	1524881

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	2.7	2.7									U

Sample ID:	1506418-001CMS	Samp Type:	MS	Test Code:	WI_4500-NH3-DS	Units:	mg/Kg-dry	Prep Date:	6/23/2015	RunNo:	78673
Client ID:	SB-15-01	Batch ID:	36970	TestNo:	A4500-NH3-D			Analysis Date:	6/26/2015	SeqNo:	1524884

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	250	2.9	108.1	123.2	113	75	125				

Sample ID:	1506418-001CMSD	Samp Type:	MSD	Test Code:	WI_4500-NH3-DS	Units:	mg/Kg-dry	Prep Date:	6/23/2015	RunNo:	78673
Client ID:	SB-15-01	Batch ID:	36970	TestNo:	A4500-NH3-D			Analysis Date:	6/26/2015	SeqNo:	1524885

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	240	2.9	109.0	123.2	109	75	125	245.5	1.20	25	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 36993**

Sample ID:	MBLK-36993	Samp Type:	MBLK	Test Code:	WI_4500-NH3-DS	Units:	mg/Kg	Prep Date:	7/1/2015	RunNo:	78749
Client ID:	PBS	Batch ID:	36993	TestNo:	A4500-NH3-D			Analysis Date:	7/1/2015	SeqNo:	1526676

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
TKN	2.7	2.7									U

Sample ID:	LCS-36993	Samp Type:	LCS	Test Code:	WI_4500-NH3-DS	Units:	mg/Kg	Prep Date:	6/25/2015	RunNo:	78749
Client ID:	LCSS	Batch ID:	36993	TestNo:	A4500-NH3-D			Analysis Date:	7/1/2015	SeqNo:	1526678

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
TKN	190	2.7	200.0	0	96.5	80	120				

Sample ID:	1506418-001BMS	Samp Type:	MS	Test Code:	WI_4500-NH3-DS	Units:	mg/Kg-dry	Prep Date:	6/25/2015	RunNo:	78749
Client ID:	SB-15-01	Batch ID:	36993	TestNo:	A4500-NH3-D			Analysis Date:	7/1/2015	SeqNo:	1526681

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
TKN	620	2.4	181.4	473.6	78.0	75	125				

Sample ID:	1506418-001BMSD	Samp Type:	MSD	Test Code:	WI_4500-NH3-DS	Units:	mg/Kg-dry	Prep Date:	6/25/2015	RunNo:	78749
Client ID:	SB-15-01	Batch ID:	36993	TestNo:	A4500-NH3-D			Analysis Date:	7/1/2015	SeqNo:	1526682

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
TKN	590	2.3	172.2	473.6	65.5	75	125	615.1	4.79	25	Q

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** 37017

Sample ID:	MB-37017	Samp Type:	MBLK	Test Code:	SM_4500-P-FS	Units:	mg/Kg	Prep Date:	6/29/2015	RunNo:	78842	
Client ID:	PBS	Batch ID:	37017	TestNo:	A4500-P-F			Analysis Date:	7/2/2015	SeqNo:	1543286	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Phosphorus, Total (As P)	0.50	0.50									U	

Sample ID:	LCS-37017	Samp Type:	LCS	Test Code:	SM_4500-P-FS	Units:	mg/Kg	Prep Date:	6/29/2015	RunNo:	78842	
Client ID:	LCSS	Batch ID:	37017	TestNo:	A4500-P-F			Analysis Date:	7/2/2015	SeqNo:	1543287	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Phosphorus, Total (As P)	9.6	0.51	10.20	0	94.4	80	120					

Sample ID:	1506418-001CMS	Samp Type:	MS	Test Code:	SM_4500-P-FS	Units:	mg/Kg-dry	Prep Date:	6/29/2015	RunNo:	78842	
Client ID:	SB-15-01	Batch ID:	37017	TestNo:	A4500-P-F			Analysis Date:	7/2/2015	SeqNo:	1543471	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Phosphorus, Total (As P)	270	6.6	132.5	142.9	94.3	75	125					

Sample ID:	1506418-001CMSD	Samp Type:	MSD	Test Code:	SM_4500-P-FS	Units:	mg/Kg-dry	Prep Date:	6/29/2015	RunNo:	78842	
Client ID:	SB-15-01	Batch ID:	37017	TestNo:	A4500-P-F			Analysis Date:	7/2/2015	SeqNo:	1543472	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Phosphorus, Total (As P)	300	6.8	135.2	142.9	113	75	125	311.1	4.98	25		

Sample ID:	MB-37017	Samp Type:	MBLK	Test Code:	WI_4500-P-FS	Units:	mg/Kg	Prep Date:	6/29/2015	RunNo:	78842	
Client ID:	PBS	Batch ID:	37017	TestNo:	A4500-P-F			Analysis Date:	7/2/2015	SeqNo:	1529659	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Phosphorus, Total (As P)	0.25	0.25									U	

Sample ID:	LCS-37017	Samp Type:	LCS	Test Code:	WI_4500-P-FS	Units:	mg/Kg	Prep Date:	6/29/2015	RunNo:	78842	
Client ID:	LCSS	Batch ID:	37017	TestNo:	A4500-P-F			Analysis Date:	7/2/2015	SeqNo:	1529660	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Phosphorus, Total (As P)	9.6	0.26	10.20	0	94.4	80	120					

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 37017**

Sample ID:	1506418-001CMS	Samp Type:	MS	Test Code:	WI_4500-P-FS	Units:	mg/Kg-dry	Prep Date:	6/29/2015	RunNo:	78842
Client ID:	SB-15-01	Batch ID:	37017	TestNo:	A4500-P-F			Analysis Date:	7/2/2015	SeqNo:	1529679

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	270	3.3	132.5	142.9	94.3	75	125				

Sample ID:	1506418-001CMSD	Samp Type:	MSD	Test Code:	WI_4500-P-FS	Units:	mg/Kg-dry	Prep Date:	6/29/2015	RunNo:	78842
Client ID:	SB-15-01	Batch ID:	37017	TestNo:	A4500-P-F			Analysis Date:	7/2/2015	SeqNo:	1529680

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	300	3.4	135.2	142.9	113	75	125	311.1	4.98	25	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 37077**

Sample ID:	MB-37077	Samp Type:	MBLK	Test Code:	WI_4500-P-FS	Units:	mg/Kg	Prep Date:	7/6/2015	RunNo:	78869
Client ID:	PBS	Batch ID:	37077	TestNo:	A4500-P-F			Analysis Date:	7/7/2015	SeqNo:	1530074

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.25	0.25									U

Sample ID:	LCS-37077	Samp Type:	LCS	Test Code:	WI_4500-P-FS	Units:	mg/Kg	Prep Date:	7/6/2015	RunNo:	78869
Client ID:	LCSS	Batch ID:	37077	TestNo:	A4500-P-F			Analysis Date:	7/7/2015	SeqNo:	1530075

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	23	0.50	20.00	0	115	80	120				

Sample ID:	1506418-013CMS	Samp Type:	MS	Test Code:	WI_4500-P-FS	Units:	mg/Kg-dry	Prep Date:	7/6/2015	RunNo:	78869
Client ID:	SB-15-07 BPD	Batch ID:	37077	TestNo:	A4500-P-F			Analysis Date:	7/7/2015	SeqNo:	1530079

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	290	3.8	151.3	135.6	103	75	125				

Sample ID:	1506418-013CMSD	Samp Type:	MSD	Test Code:	WI_4500-P-FS	Units:	mg/Kg-dry	Prep Date:	7/6/2015	RunNo:	78869
Client ID:	SB-15-07 BPD	Batch ID:	37077	TestNo:	A4500-P-F			Analysis Date:	7/7/2015	SeqNo:	1530080

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	290	3.7	148.5	135.6	103	75	125	292.0	1.18	25	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID: 37118**

Sample ID:	MB-37118	Samp Type:	MBLK	Test Code:	WI_6010S	Units:	µg/Kg	Prep Date:	7/10/2015	RunNo:	78960	
Client ID:	PBS	Batch ID:	37118	TestNo:	SW6010B	SW3050B		Analysis Date:	7/10/2015	SeqNo:	1531970	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Selenium	3,000	3,000									U	

Sample ID:	LCS-37118	Samp Type:	LCS	Test Code:	WI_6010S	Units:	µg/Kg	Prep Date:	7/10/2015	RunNo:	78960	
Client ID:	LCSS	Batch ID:	37118	TestNo:	SW6010B	SW3050B		Analysis Date:	7/10/2015	SeqNo:	1531971	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Selenium	22,000	3,000	25,000	0	89.5	78	111					

Sample ID:	1506418-001CMS	Samp Type:	MS	Test Code:	WI_6010S	Units:	µg/Kg-dry	Prep Date:	7/10/2015	RunNo:	78960	
Client ID:	SB-15-01	Batch ID:	37118	TestNo:	SW6010B	SW3050B		Analysis Date:	7/10/2015	SeqNo:	1531973	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Selenium	13,000	1,900	16,020	0	83.7	78	111					

Sample ID:	1506418-001CMSD	Samp Type:	MSD	Test Code:	WI_6010S	Units:	µg/Kg-dry	Prep Date:	7/10/2015	RunNo:	78960	
Client ID:	SB-15-01	Batch ID:	37118	TestNo:	SW6010B	SW3050B		Analysis Date:	7/10/2015	SeqNo:	1531974	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Selenium	15,000	1,900	15,940	0	92.7	78	111	13,400	9.82	20		

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** R78306

Sample ID:	1506375-001C DUP	Samp Type:	DUP	Test Code:	PMOIST	Units:	wt%	Prep Date:	6/15/2015	RunNo:	78306
Client ID:	ZZZZZZ	Batch ID:	R78306	TestNo:	D2216			Analysis Date:	6/15/2015	SeqNo:	1517385

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Percent Moisture	21	1.0						20.77	0.725	20	

Sample ID:	1506418-016C DUP	Samp Type:	DUP	Test Code:	PMOIST	Units:	wt%	Prep Date:	6/15/2015	RunNo:	78306
Client ID:	SB-15-11 BPD	Batch ID:	R78306	TestNo:	D2216			Analysis Date:	6/15/2015	SeqNo:	1517404

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Percent Moisture	43	1.0						42.79	1.06	20	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** R78350

Sample ID:	1506418-001C DUP	Samp Type:	DUP	Test Code:	SM_2540G	Units:	%	Prep Date:	6/15/2015	RunNo:	78350
Client ID:	SB-15-01	Batch ID:	R78350	TestNo:	A2540G			Analysis Date:	6/15/2015	SeqNo:	1556421

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Total Volatile Solids	1.9	0.10						1.140	51.0	20	R

Sample ID:	1506418-016C DUP	Samp Type:	DUP	Test Code:	SM_2540G	Units:	%	Prep Date:	6/15/2015	RunNo:	78350
Client ID:	SB-15-11 BPD	Batch ID:	R78350	TestNo:	A2540G			Analysis Date:	6/15/2015	SeqNo:	1556437

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Total Volatile Solids	4.7	0.10						4.693	0.760	20	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** R78535

Sample ID:	MB-062315	Samp Type:	MBLK	Test Code:	WI_410.4-S	Units:	mg/Kg	Prep Date:	6/23/2015	RunNo:	78535	
Client ID:	PBS	Batch ID:	R78535	TestNo:	E410.4			Analysis Date:	6/23/2015	SeqNo:	1522157	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Chemical Oxygen Demand	20	20									U	

Sample ID:	LCS-062315	Samp Type:	LCS	Test Code:	WI_410.4-S	Units:	mg/Kg	Prep Date:	6/23/2015	RunNo:	78535	
Client ID:	LCSS	Batch ID:	R78535	TestNo:	E410.4			Analysis Date:	6/23/2015	SeqNo:	1522158	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Chemical Oxygen Demand	110	20	100.0	0	107	80	120					

Sample ID:	1506418-001CMS	Samp Type:	MS	Test Code:	WI_410.4-S	Units:	mg/Kg-dry	Prep Date:	6/23/2015	RunNo:	78535	
Client ID:	SB-15-01	Batch ID:	R78535	TestNo:	E410.4			Analysis Date:	6/23/2015	SeqNo:	1522161	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Chemical Oxygen Demand	16,000	580	14,500	3,829	82.0	70	130					

Sample ID:	1506418-001CMSD	Samp Type:	MSD	Test Code:	WI_410.4-S	Units:	mg/Kg-dry	Prep Date:	6/23/2015	RunNo:	78535	
Client ID:	SB-15-01	Batch ID:	R78535	TestNo:	E410.4			Analysis Date:	6/23/2015	SeqNo:	1522162	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Chemical Oxygen Demand	16,000	580	14,500	3,829	85.4	70	130	15,720	3.09	25		

Sample ID:	MB-2-062315	Samp Type:	MBLK	Test Code:	WI_410.4-S	Units:	mg/Kg	Prep Date:	6/23/2015	RunNo:	78535	
Client ID:	PBS	Batch ID:	R78535	TestNo:	E410.4			Analysis Date:	6/23/2015	SeqNo:	1522173	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Chemical Oxygen Demand	20	20									U	

Sample ID:	1506418-016CMS	Samp Type:	MS	Test Code:	WI_410.4-S	Units:	mg/Kg-dry	Prep Date:	6/23/2015	RunNo:	78535	
Client ID:	SB-15-11 BPD	Batch ID:	R78535	TestNo:	E410.4			Analysis Date:	6/23/2015	SeqNo:	1522181	
Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual	
Chemical Oxygen Demand	25,000	820	20,520	9,971	72.8	70	130					

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** R78535

Sample ID:	1506418-016CMSD	Samp Type:	MSD	Test Code:	WI_410.4-S	Units:	mg/Kg-dry	Prep Date:	6/23/2015	RunNo:	78535
Client ID:	SB-15-11 BPD	Batch ID:	R78535	TestNo:	E410.4			Analysis Date:	6/23/2015	SeqNo:	1522182

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	25,000	820	20,520	9,971	73.4	70	130	24,910	0.493	25	

Sample ID:	MB-3-062315	Samp Type:	MBLK	Test Code:	WI_410.4-S	Units:	mg/Kg	Prep Date:	6/23/2015	RunNo:	78535
Client ID:	PBS	Batch ID:	R78535	TestNo:	E410.4			Analysis Date:	6/23/2015	SeqNo:	1522184

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	20	20									U

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** R78770

Sample ID:	**1506418-001ADUP**	Samp Type:	**DUP**	Test Code:	**ASTM-D854**	Units:	**lbs/gal**	Prep Date:	**7/2/2015**	RunNo:	**78770**		
Client ID:	**SB-15-01**	Batch ID:	**R78770**	TestNo:	**D854**			Analysis Date:	**7/2/2015**	SeqNo:	**1527189**		

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Density	19.0							20.69	8.48	20	
Density Temperature	22.2							22.20	0	20	
Specific Gravity at 20 deg. C	2.28							2.484	8.48	20	

RTI Laboratories - QC SUMMARY REPORT

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

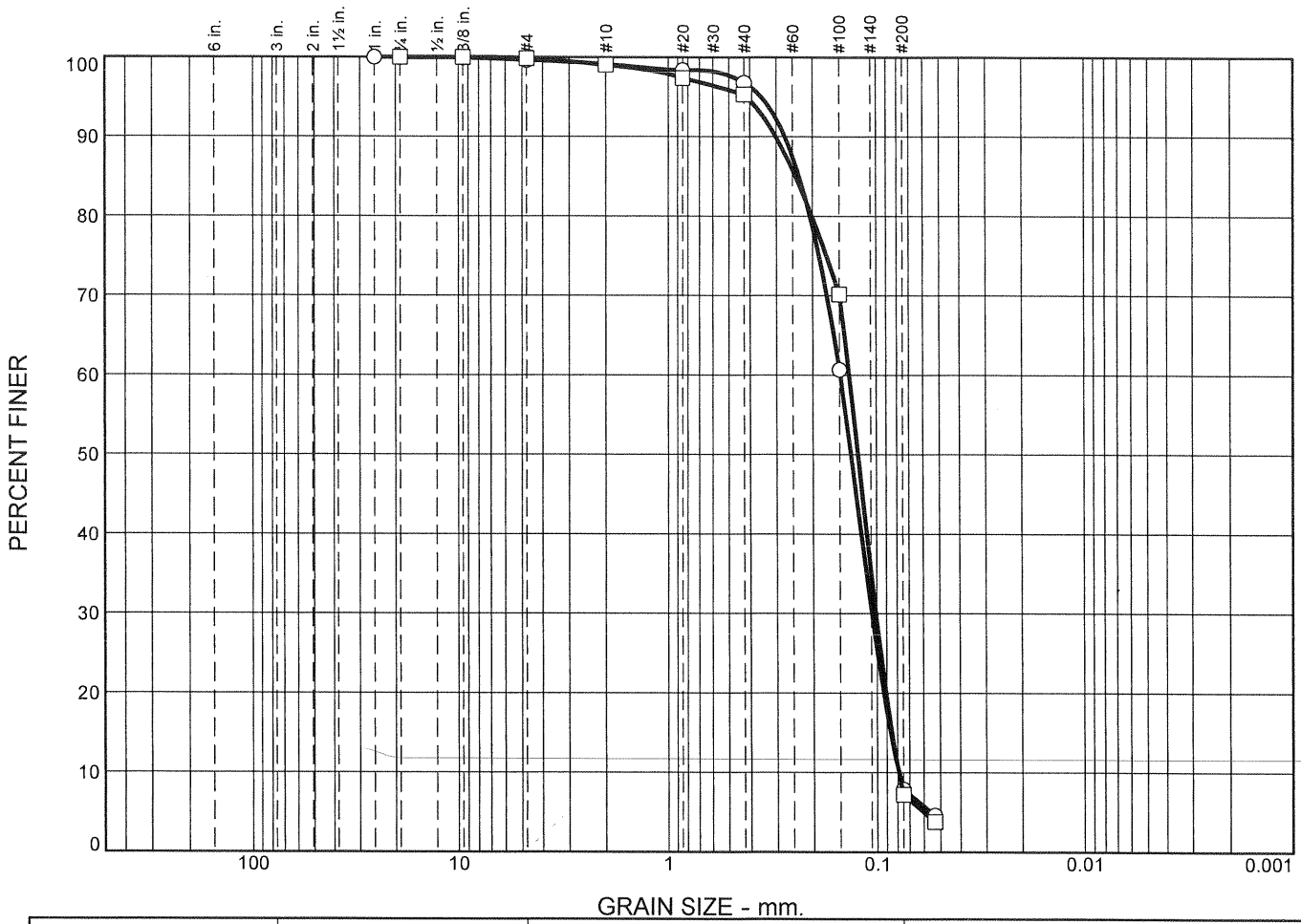
Client: USACE- Detroit District

Project: Sturgeon Bay **Batch ID:** R78804

Sample ID:	1506418-001ADUP	Samp Type:	DUP	Test Code:	ASTM-D422	Units:	% Finer	Prep Date:	7/2/2015	RunNo:	78804
Client ID:	SB-15-01	Batch ID:	R78804	TestNo:	ASTM-D422			Analysis Date:	7/2/2015	SeqNo:	1528005

Analyte	Result	LOQ	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
0.75 in	100	0.10						100.0	0	25	
0.375 in	100	0.10						99.90	0.100	25	
No. 4 (4.75-mm)	100	0.10						99.60	0.201	25	
No.10 (2-mm)	99	0.10						99.10	0.101	25	
No.20 (850-um)	97	0.10						98.40	1.02	25	
No.40 (425-um)	95	0.10						96.80	1.56	25	
No.100 (150-um)	70	0.10						60.70	14.5	25	
No.200 (75-um)	7.2	0.10						7.900	9.27	25	
No. 270 (53-um)	3.8	0.10						4.600	19.0	25	
Non-retained material	3.8	0.10						4.600	19.0	25	
Coarse Gravel	0.10	0.10						0	0	25	U
Fine Gravel	0.20	0.10						0.4000	66.7	25	R
Coarse Sand	0.80	0.10						0.5000	46.2	25	R
Medium Sand	3.7	0.10						2.300	46.7	25	R
Fine Sand	88	0.10						88.90	0.904	25	
Silt	7.2	0.10						7.900	9.27	25	
Clay	0.10	0.10						0	0	25	U

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.4	0.5	2.3	88.9	7.9	
□	0.0	0.0	0.2	0.8	3.7	88.1	7.2	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-01	1506418-			
		001A			
□	SB-15-01	1506418-			
		001A DUP			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/6/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-01
Sample Number: 1506418-001A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
234.10	0.00	.75	556.30	556.20	100.0
		.375	541.80	541.70	99.9
		#4	498.40	497.70	99.6
		#10	456.30	455.10	99.1
		#20	475.80	474.10	98.4
		#40	390.30	386.60	96.8
		#100	423.00	338.50	60.7
		#200	438.30	314.70	7.9
		#270	398.40	390.70	4.6

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
		0.4		0.5	2.3	88.9	91.7			7.9

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0552	0.0789	0.0863	0.0928	0.1052	0.1178	0.1318	0.1487	0.2058	0.2322	0.2726	0.3547

Fineness Modulus	C_u	C_c
0.52	1.88	0.94

GRAIN SIZE DISTRIBUTION TEST DATA

7/6/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-01
Sample Number: 1506418-001A DUP
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
260.70	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	498.10	497.70	99.8
		#10	457.30	455.10	99.0
		#20	478.40	474.10	97.4
		#40	391.90	386.60	95.3
		#100	404.10	338.50	70.2
		#200	478.70	314.70	7.2
		#270	399.70	390.70	3.8

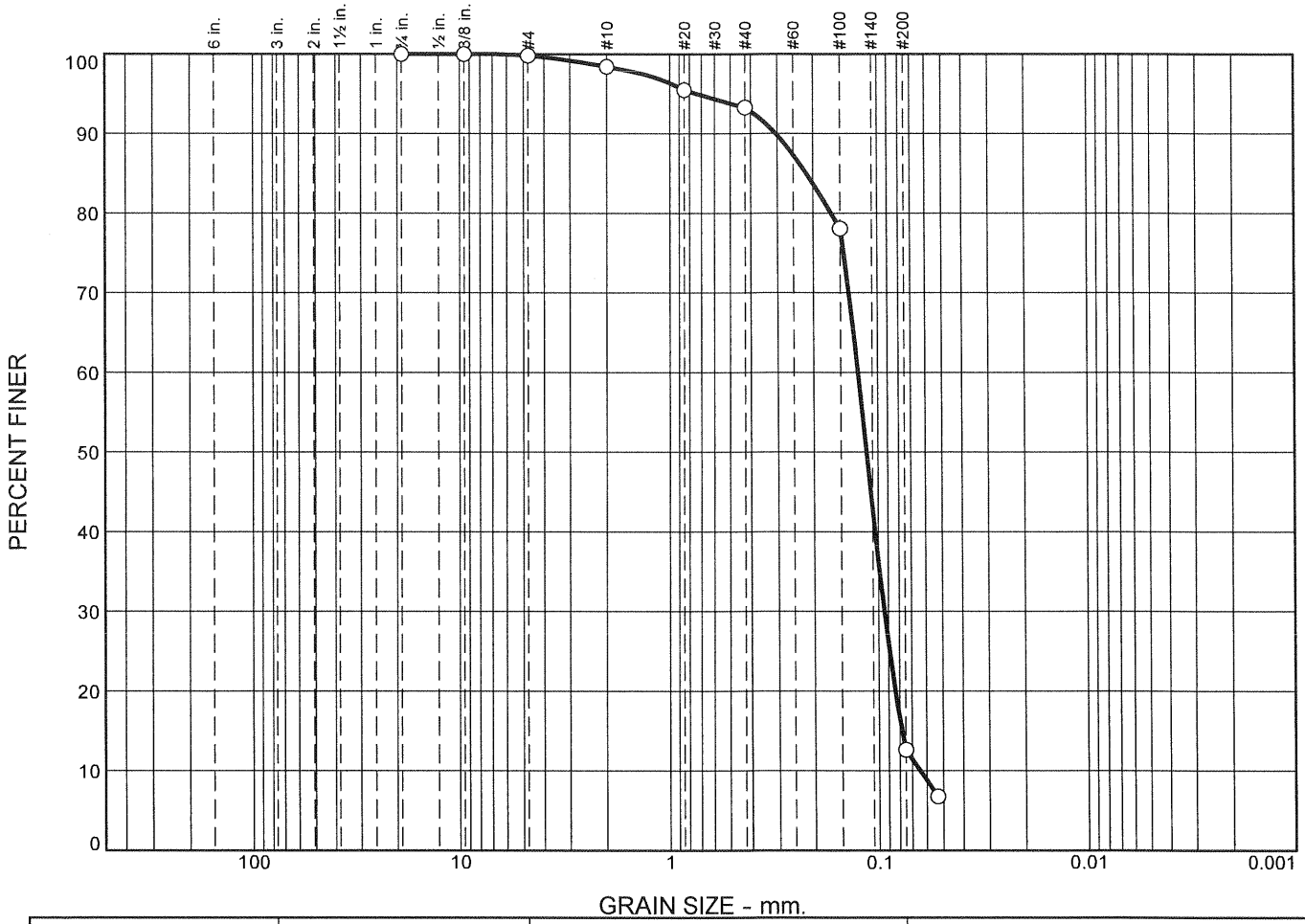
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.2	0.2	0.8	3.7	88.1	92.6			7.2

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0598	0.0791	0.0852	0.0906	0.1007	0.1109	0.1218	0.1343	0.2016	0.2419	0.3021	0.4136

Fineness Modulus	C_u	C_c
0.46	1.70	0.96

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.2	1.4	5.1	80.7	12.6	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-02	1506418-			
		002A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-02
Sample Number: 1506418-002A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
319.40	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	498.40	497.70	99.8
		#10	459.50	455.10	98.4
		#20	483.50	474.10	95.5
		#40	393.60	386.60	93.3
		#100	387.10	338.50	78.1
		#200	523.60	314.70	12.6
		#270	409.40	390.70	6.8

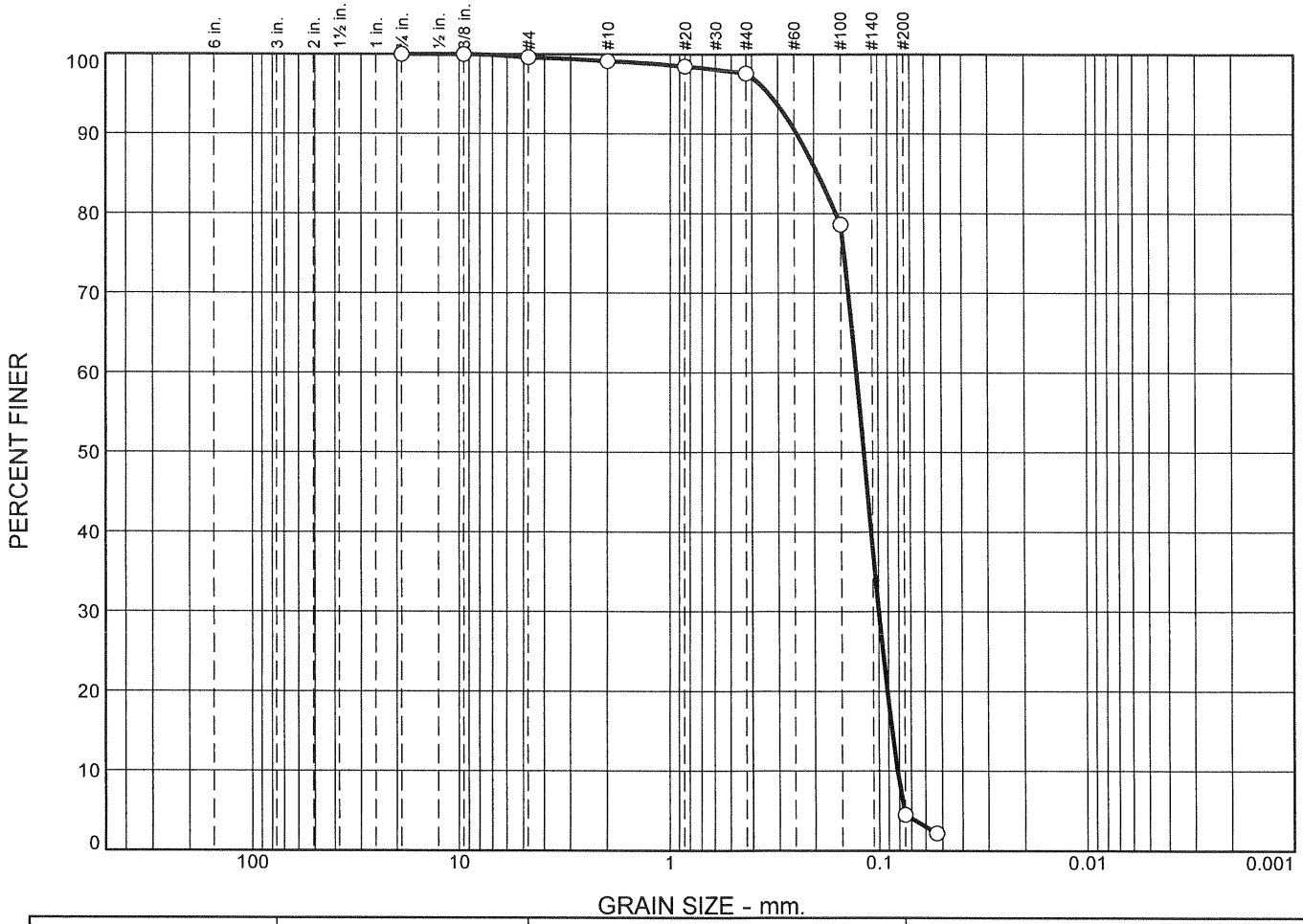
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.2	0.2	1.4	5.1	80.7	87.2			12.6

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0641	0.0782	0.0839	0.0938	0.1033	0.1132	0.1241	0.1647	0.2159	0.3056	0.7381

Fineness Modulus	C_u	C_c
0.42	1.94	1.11

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.4	0.5	1.5	93.1	4.5	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-03	1506418-			SP
		003A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-03
Sample Number: 1506418-003A
USCS: SP
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
333.90	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	499.10	497.70	99.6
		#10	456.60	455.10	99.1
		#20	476.30	474.10	98.5
		#40	389.50	386.60	97.6
		#100	401.90	338.50	78.6
		#200	562.10	314.70	4.5
		#270	398.50	390.70	2.2

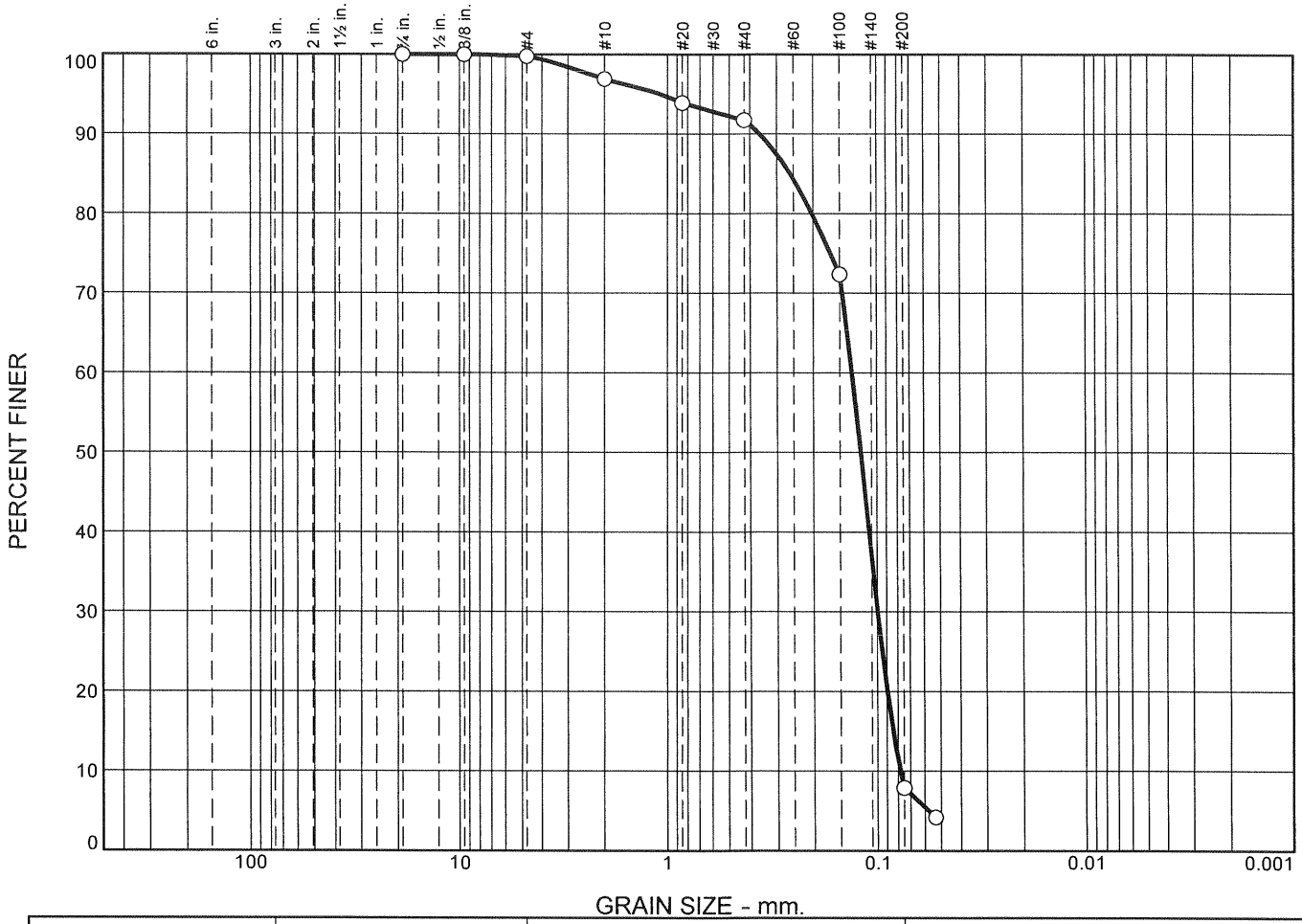
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.4	0.4	0.5	1.5	93.1	95.1			4.5

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0757	0.0817	0.0866	0.0911	0.0996	0.1080	0.1169	0.1267	0.1576	0.1917	0.2423	0.3314

Fineness Modulus	C_u	C_c
0.32	1.55	0.96

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.3	2.8	5.1	83.9	7.9	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-04	1506418-			
		004A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-04
Sample Number: 1506418-004A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
278.90	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	498.40	497.70	99.7
		#10	463.00	455.10	96.9
		#20	482.50	474.10	93.9
		#40	392.60	386.60	91.8
		#100	392.60	338.50	72.4
		#200	494.50	314.70	7.9
		#270	401.00	390.70	4.2

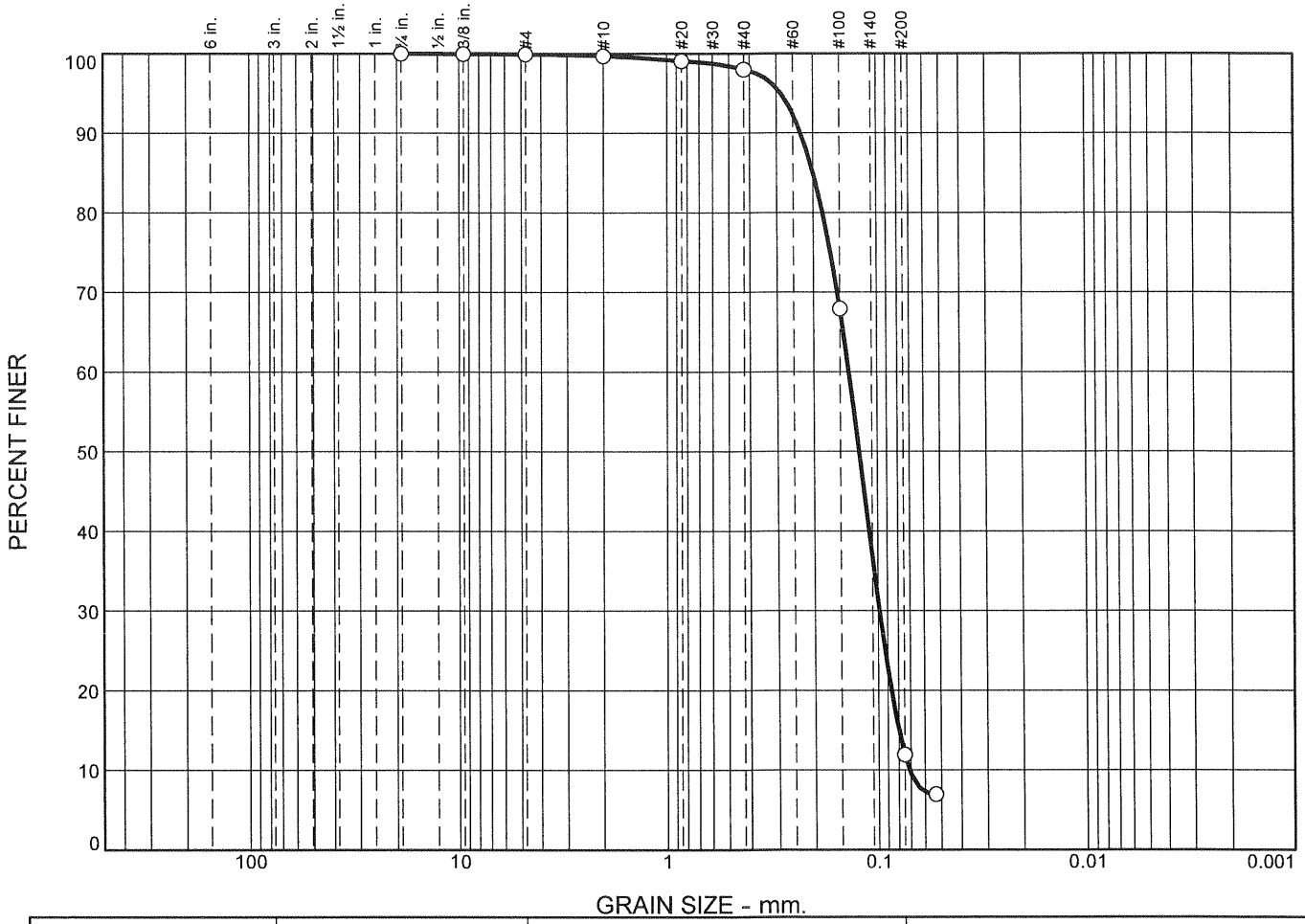
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.3	0.3	2.8	5.1	83.9	91.8			7.9

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0572	0.0781	0.0842	0.0894	0.0993	0.1091	0.1195	0.1314	0.2031	0.2597	0.3611	1.0861

Fineness Modulus	C_u	C_c
0.55	1.68	0.96

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	0.2	1.7	86.1	11.9	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-05	1506418-			
		005A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-05
Sample Number: 1506418-005A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
193.60	0.00	.75	556.20	556.20	100.0
		.375	541.80	541.70	99.9
		#4	497.80	497.70	99.9
		#10	455.50	455.10	99.7
		#20	475.30	474.10	99.1
		#40	388.70	386.60	98.0
		#100	396.70	338.50	67.9
		#200	423.10	314.70	11.9
		#270	400.30	390.70	7.0

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.1	0.1	0.2	1.7	86.1	88.0			11.9

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0710	0.0799	0.0865	0.0982	0.1097	0.1221	0.1363	0.1806	0.2002	0.2295	0.2868

Fineness Modulus	C_u	C_c
0.39	1.92	1.00

Particle Size Distribution Report

	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.5	6.1	9.7	73.1	10.6	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-06	1506418-			
		006A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-06
Sample Number: 1506418-006A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
240.70	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	499.00	497.70	99.5
		#10	469.70	455.10	93.4
		#20	488.40	474.10	87.5
		#40	395.60	386.60	83.7
		#100	389.90	338.50	62.4
		#200	439.40	314.70	10.6
		#270	402.60	390.70	5.6

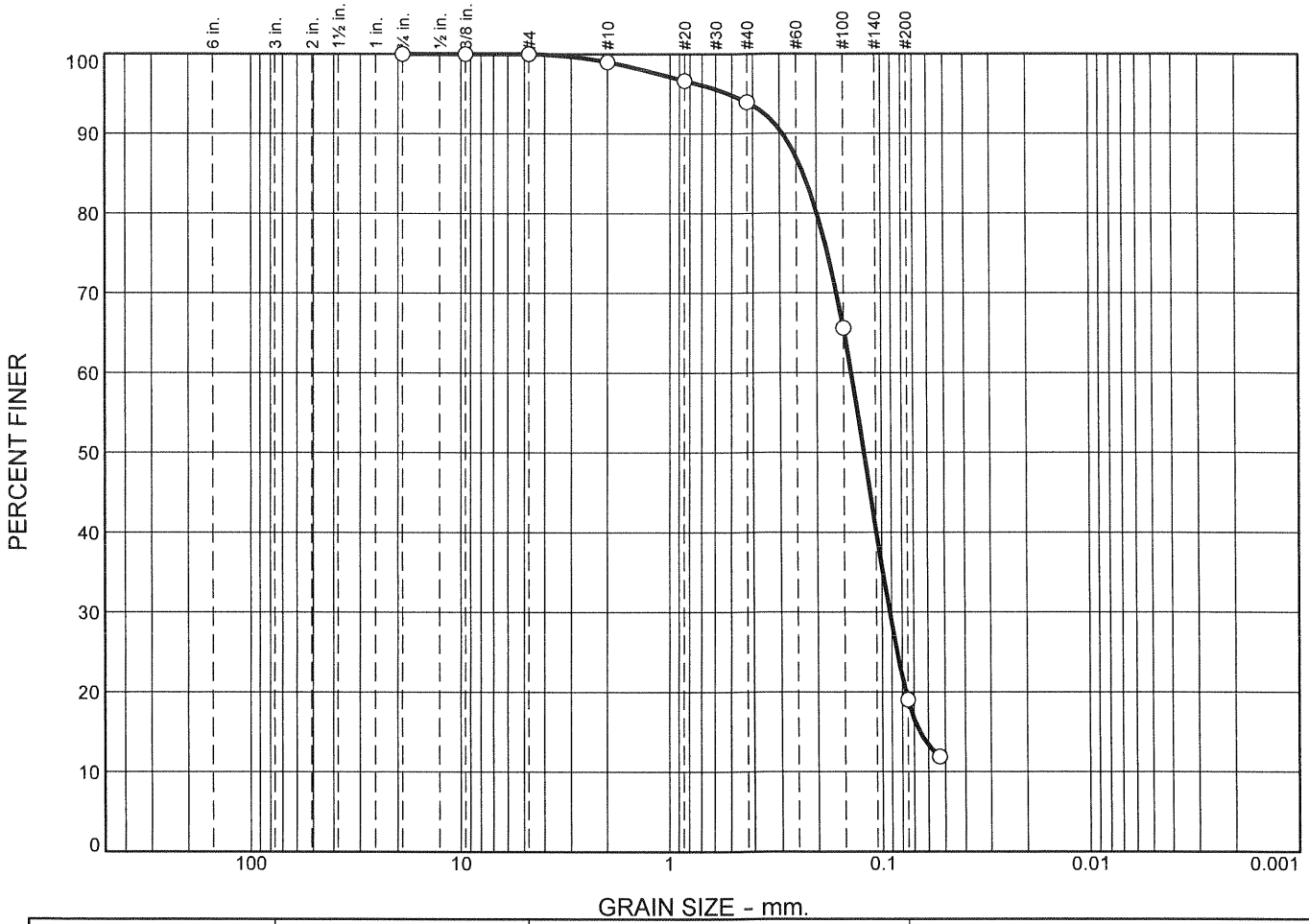
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.5	0.5	6.1	9.7	73.1	88.9			10.6

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0739	0.0821	0.0887	0.1010	0.1136	0.1276	0.1450	0.2297	0.5885	1.2410	2.4405

Fineness Modulus	C_u	C_c
0.86	1.96	0.95

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	1.0	5.1	74.9	19.0	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-07	1506418-			
		007A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-07
Sample Number: 1506418-007A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
118.30	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	497.70	497.70	100.0
		#10	456.30	455.10	99.0
		#20	476.90	474.10	96.6
		#40	389.80	386.60	93.9
		#100	372.00	338.50	65.6
		#200	369.80	314.70	19.0
		#270	399.10	390.70	11.9

Fractional Components

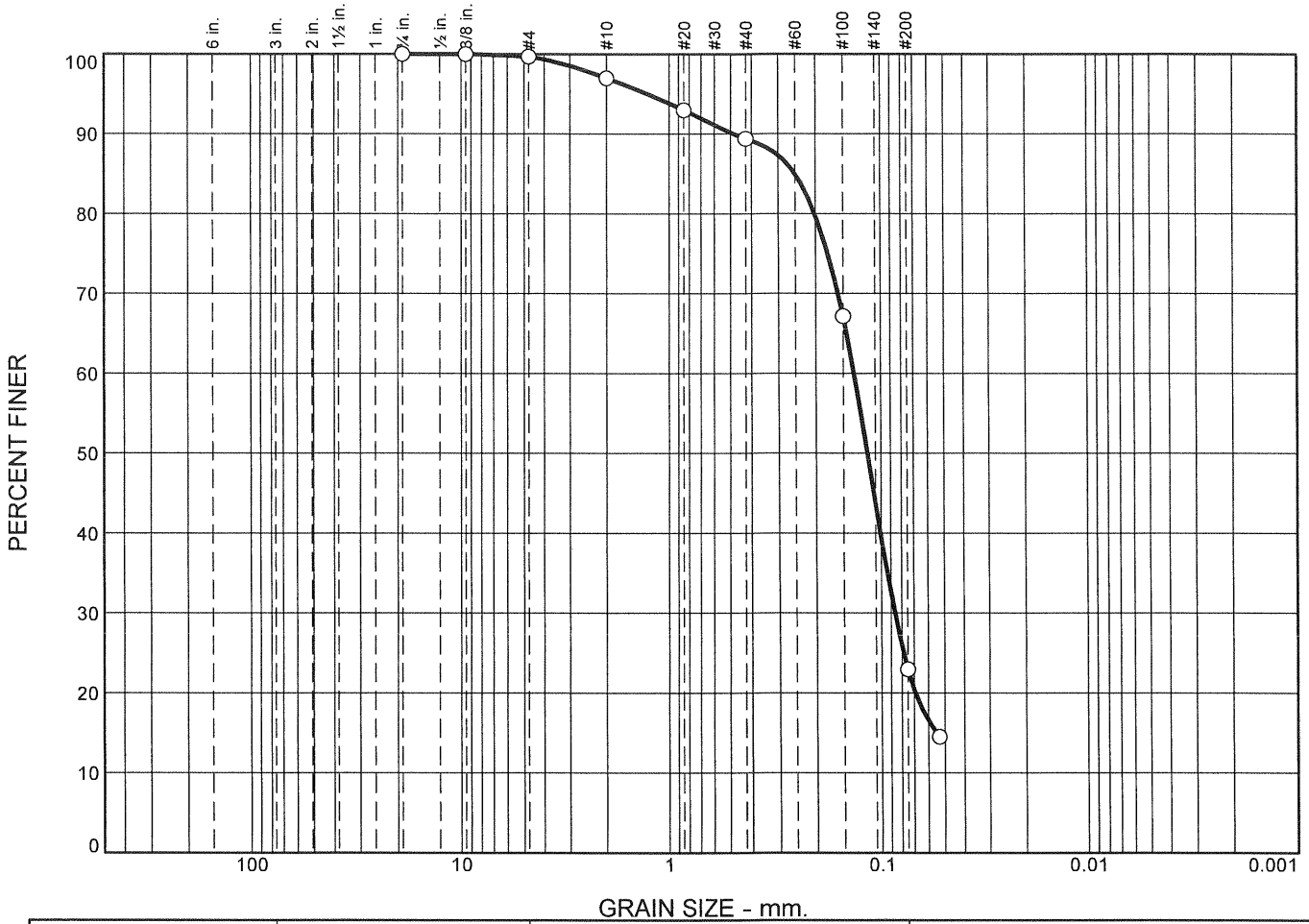
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	1.0	5.1	74.9	81.0			19.0

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0656	0.0768	0.0918	0.1057	0.1206	0.1380	0.1994	0.2317	0.2907	0.5223

Fineness Modulus
0.51

RTI Laboratories

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.3	2.7	7.6	66.4	23.0	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-08	1506418-			
		008A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-08
Sample Number: 1506418-008A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
119.70	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	498.10	497.70	99.7
		#10	458.30	455.10	97.0
		#20	478.90	474.10	93.0
		#40	390.90	386.60	89.4
		#100	365.10	338.50	67.2
		#200	367.60	314.70	23.0
		#270	400.80	390.70	14.5

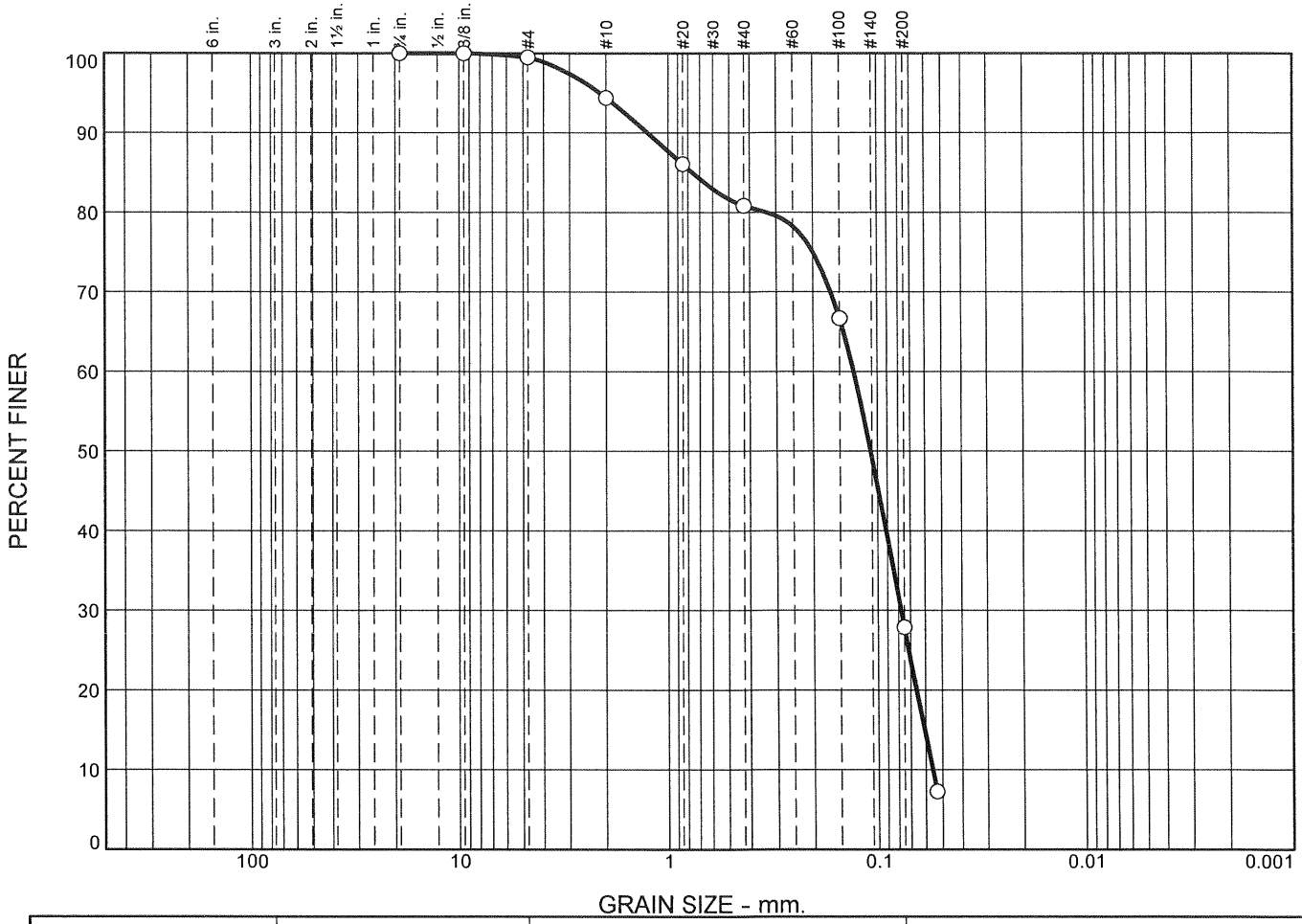
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.3	0.3	2.7	7.6	66.4	76.7			23.0

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0546	0.0690	0.0862	0.1006	0.1158	0.1336	0.2024	0.2511	0.4835	1.2738

Fineness Modulus
0.62

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.5	5.1	13.6	52.9	27.9	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-09	1506418-			
		009A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-09
Sample Number: 1506418-009A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
112.60	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	498.30	497.70	99.5
		#10	460.80	455.10	94.4
		#20	483.50	474.10	86.1
		#40	392.50	386.60	80.8
		#100	354.40	338.50	66.7
		#200	358.40	314.70	27.9
		#270	413.90	390.70	7.3

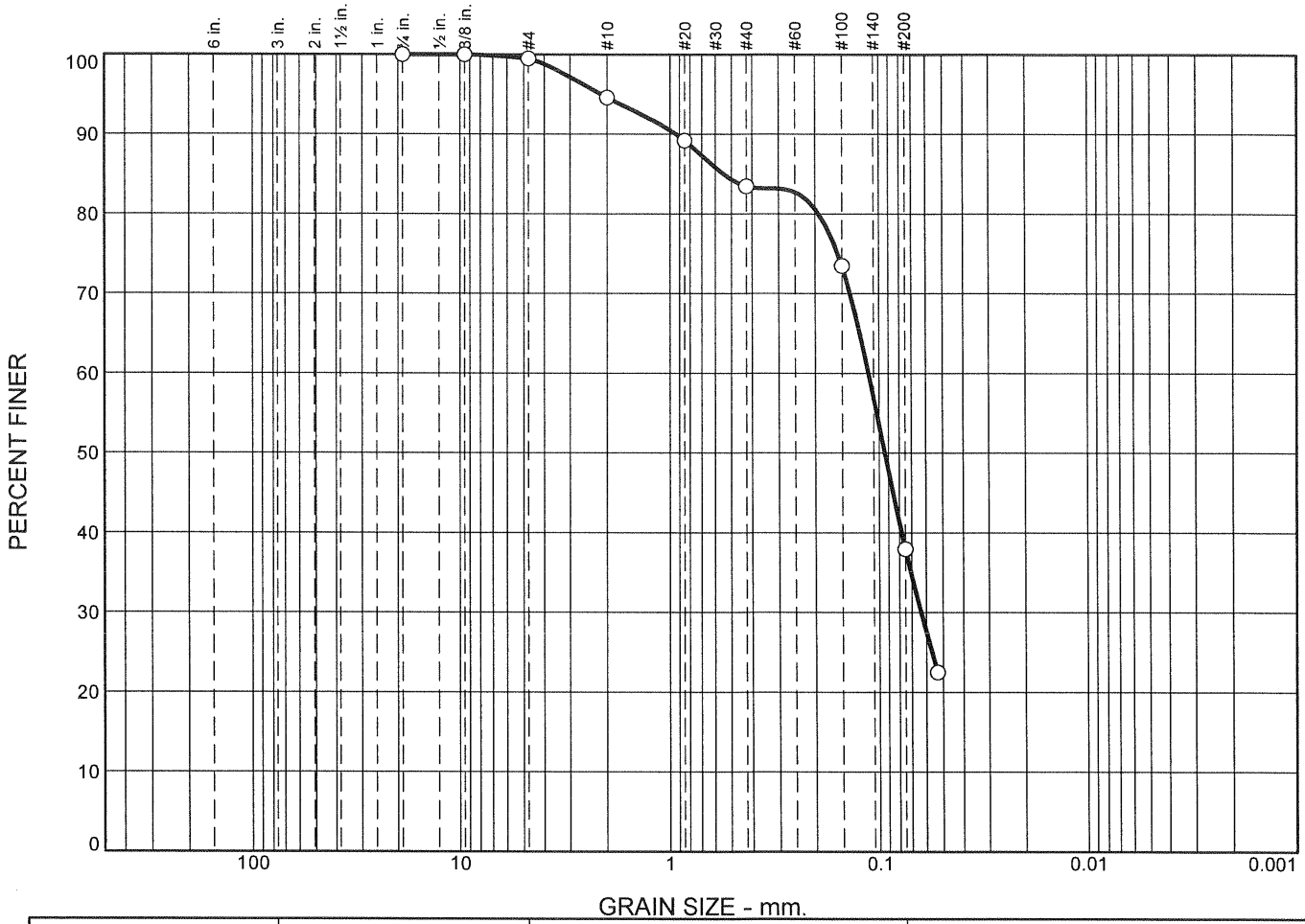
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.5	0.5	5.1	13.6	52.9	71.6			27.9

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0555	0.0605	0.0658	0.0776	0.0911	0.1075	0.1292	0.3348	0.7610	1.2591	2.1464

Fineness Modulus	C_u	C_c
0.86	2.33	0.84

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.5	4.9	11.1	45.5	38.0	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-10	1506418-			
		010A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-10
Sample Number: 1506418-010A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
94.30	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	498.20	497.70	99.5
		#10	459.70	455.10	94.6
		#20	479.20	474.10	89.2
		#40	392.00	386.60	83.5
		#100	347.90	338.50	73.5
		#200	348.20	314.70	38.0
		#270	405.30	390.70	22.5

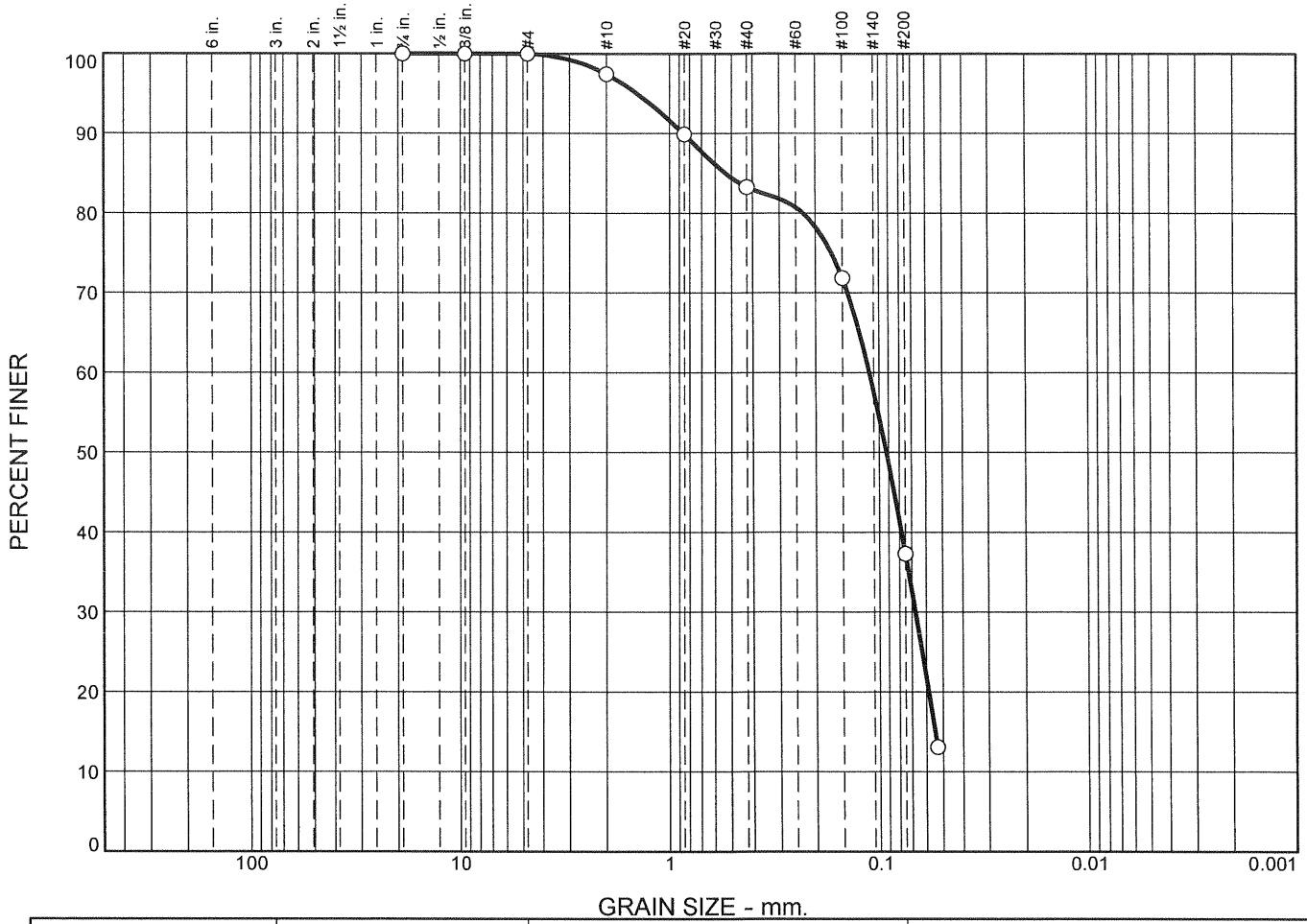
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.5	0.5	4.9	11.1	45.5	61.5			38.0

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0633	0.0780	0.0937	0.1122	0.1926	0.5469	0.9375	2.1385

Fineness Modulus
0.71

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	2.6	14.1	46.0	37.3	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-11	1506418-			
		011A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-11
Sample Number: 1506418-011A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
93.80	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	497.70	497.70	100.0
		#10	457.50	455.10	97.4
		#20	481.20	474.10	89.9
		#40	392.80	386.60	83.3
		#100	349.20	338.50	71.9
		#200	347.10	314.70	37.3
		#270	413.40	390.70	13.1

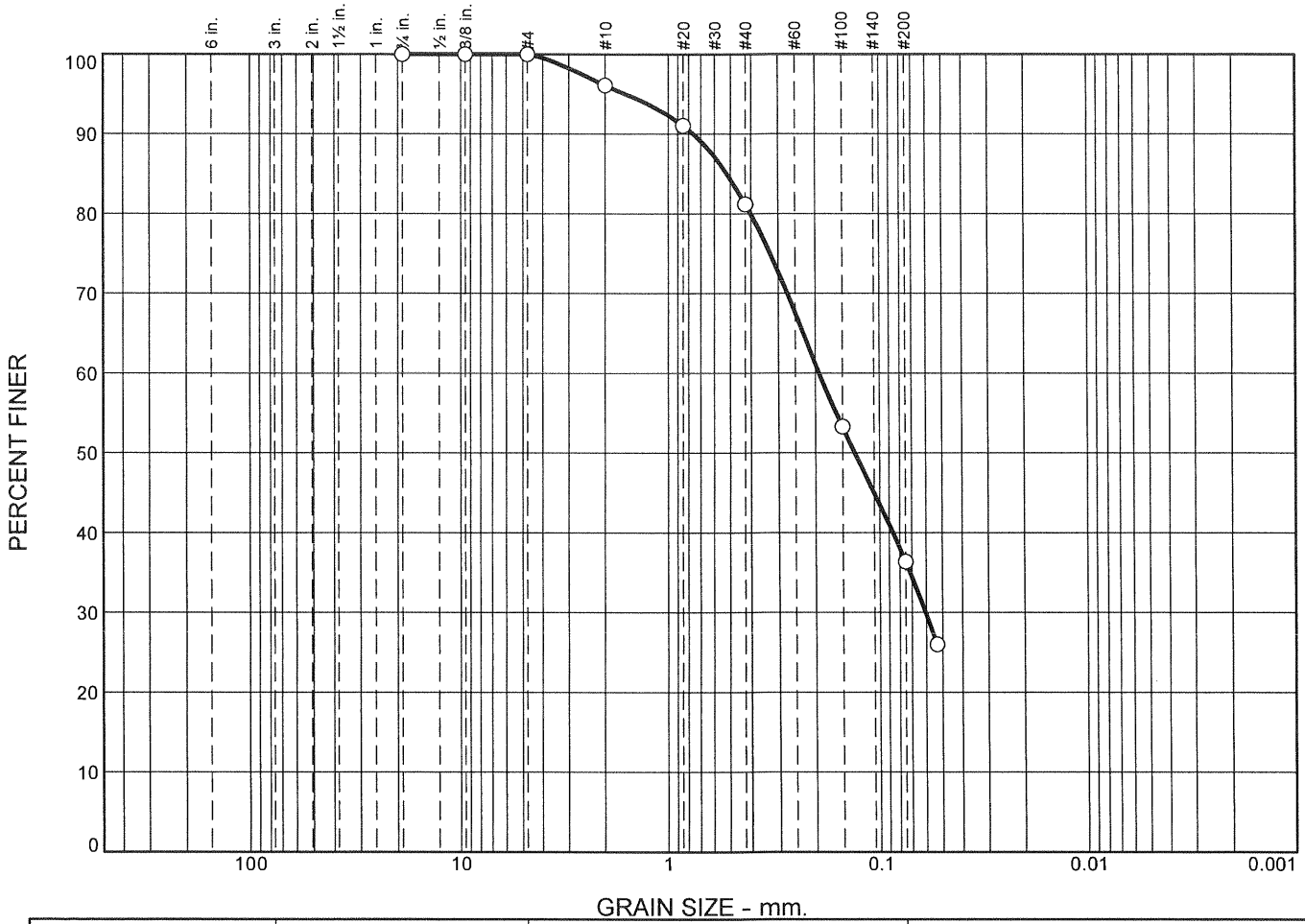
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	2.6	14.1	46.0	62.7			37.3

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0544	0.0584	0.0673	0.0782	0.0921	0.1113	0.2302	0.5350	0.8600	1.4304

Fineness Modulus
0.69

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	3.9	14.9	44.8	36.4	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-12	1506418-			
		012A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-12
Sample Number: 1506418-012A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
79.20	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	497.70	497.70	100.0
		#10	458.20	455.10	96.1
		#20	478.10	474.10	91.0
		#40	394.40	386.60	81.2
		#100	360.60	338.50	53.3
		#200	328.10	314.70	36.4
		#270	398.90	390.70	26.0

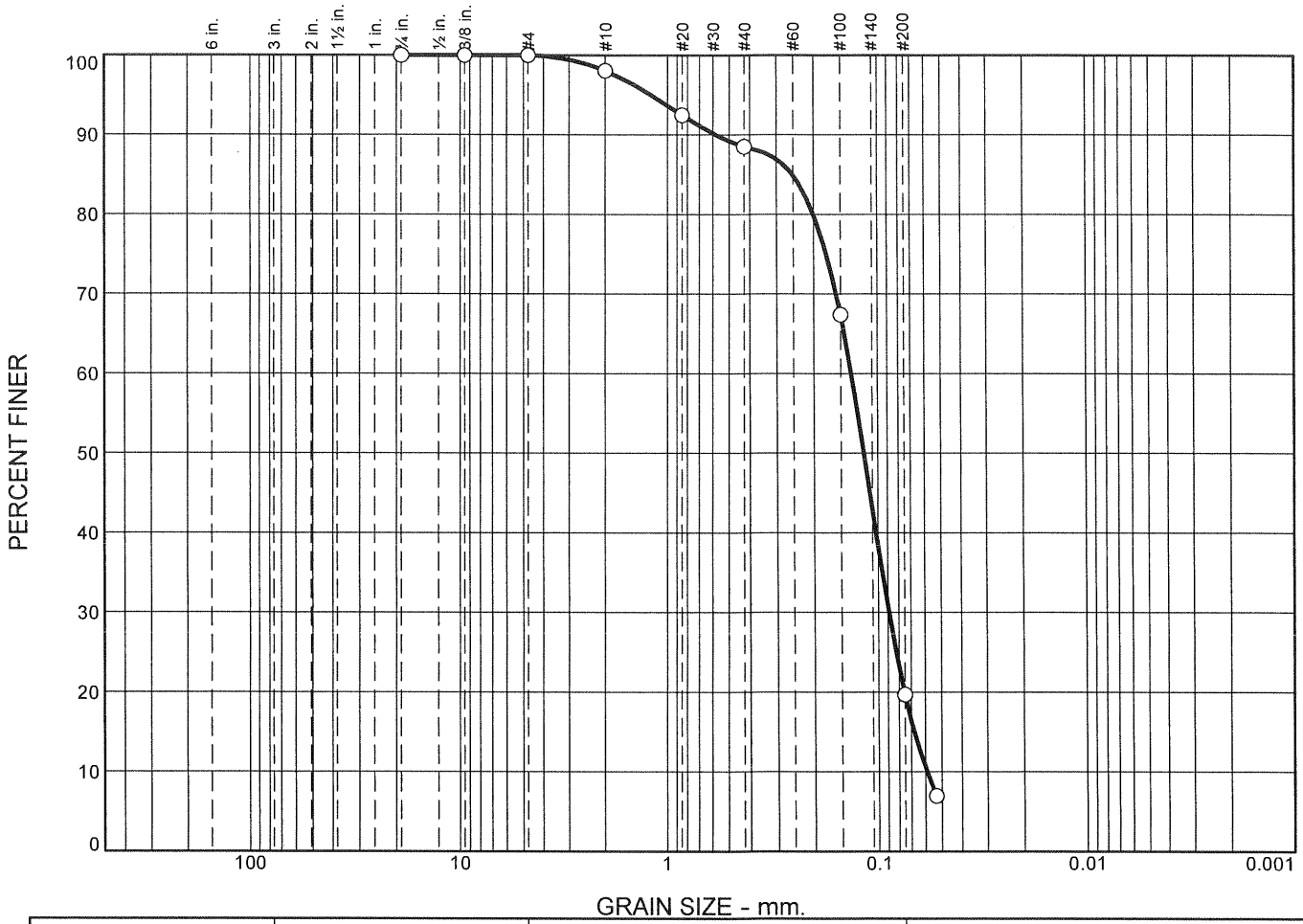
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	3.9	14.9	44.8	63.6			36.4

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0603	0.0862	0.1313	0.1921	0.4024	0.5206	0.7616	1.6040

Fineness Modulus
0.97

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	2.0	9.5	68.8	19.7	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-07	1506418-			
	BPD	013A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-07 BPD
Sample Number: 1506418-013A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
239.40	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	497.70	497.70	100.0
		#10	459.80	455.10	98.0
		#20	487.40	474.10	92.5
		#40	396.10	386.60	88.5
		#100	389.10	338.50	67.4
		#200	428.90	314.70	19.7
		#270	421.10	390.70	7.0

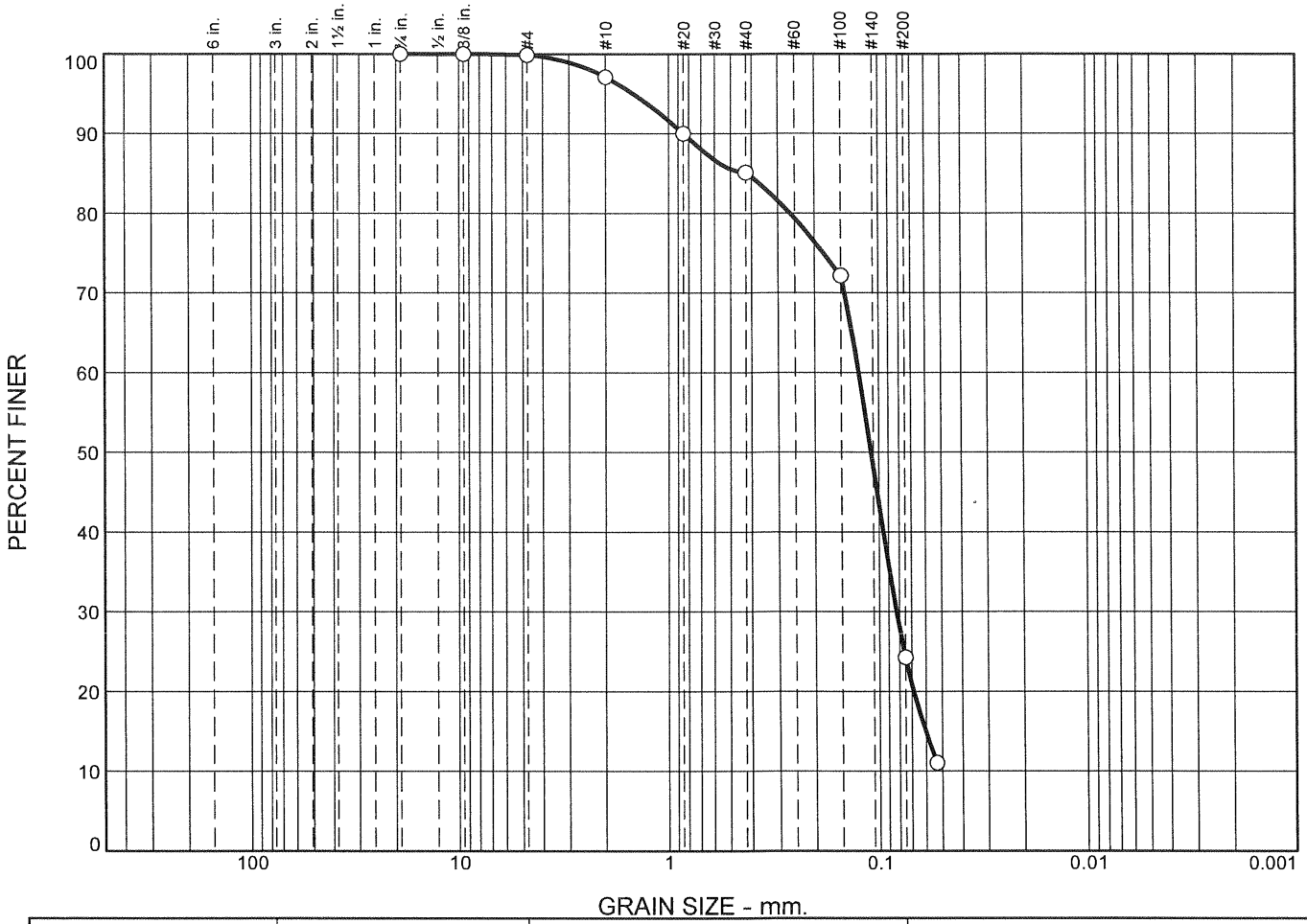
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	2.0	9.5	68.8	80.3			19.7

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0587	0.0677	0.0755	0.0888	0.1020	0.1164	0.1336	0.2011	0.2523	0.5806	1.2107

Fineness Modulus	C_u	C_c
0.62	2.28	1.01

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	2.8	12.0	60.8	24.3	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-08	1506418-			
	BPD	014A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-08 BPD
Sample Number: 1506418-014A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
242.00	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	498.00	497.70	99.9
		#10	461.80	455.10	97.1
		#20	491.30	474.10	90.0
		#40	398.40	386.60	85.1
		#100	369.90	338.50	72.1
		#200	430.60	314.70	24.3
		#270	422.60	390.70	11.1

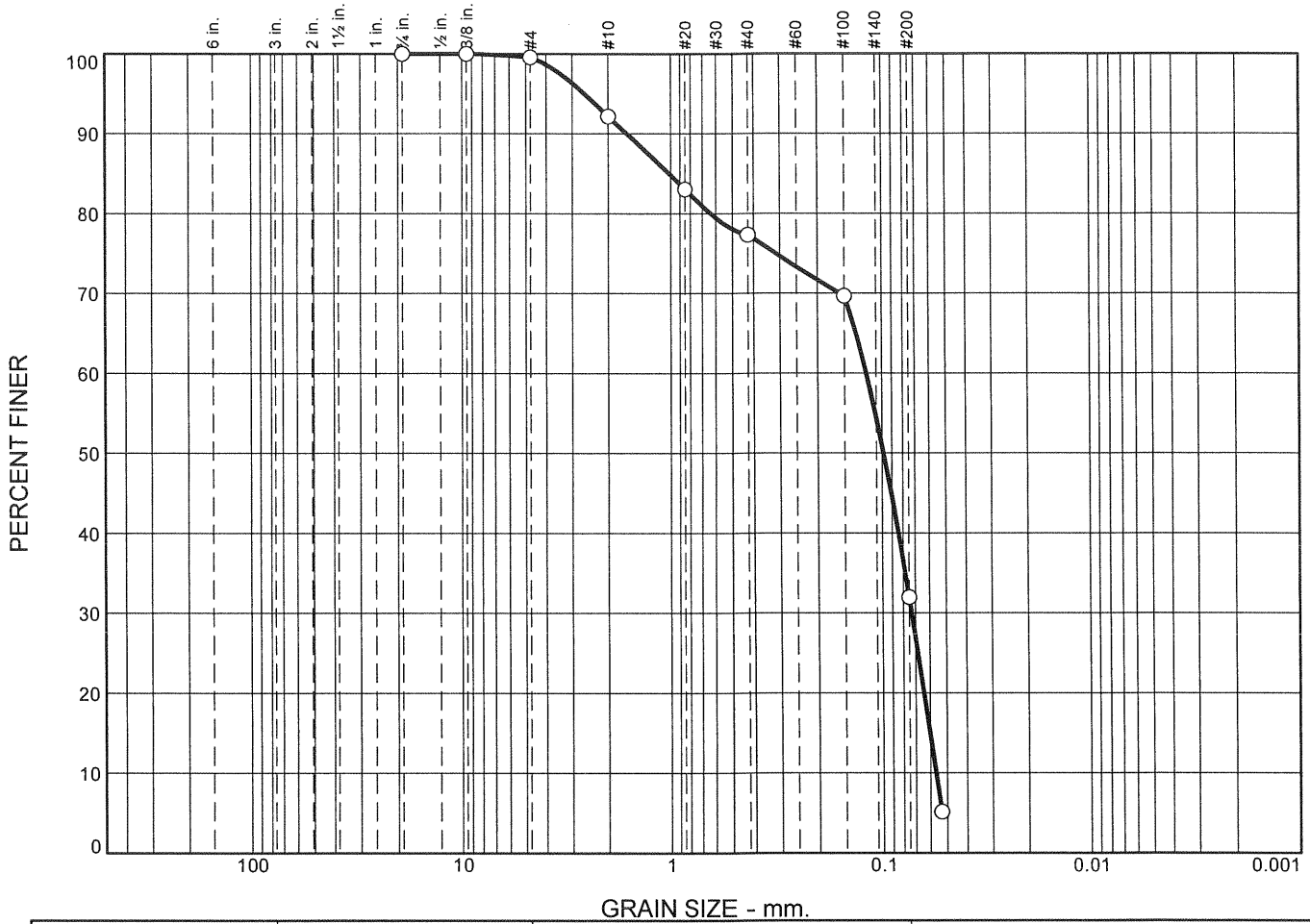
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.1	0.1	2.8	12.0	60.8	75.6			24.3

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0601	0.0686	0.0826	0.0952	0.1086	0.1241	0.2633	0.4193	0.8500	1.4731

Fineness Modulus
0.69

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.4	7.4	14.9	45.3	32.0	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-10	1506418-			
	BPD	015A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-10 BPD
Sample Number: 1506418-015A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
383.40	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	499.40	497.70	99.6
		#10	483.40	455.10	92.2
		#20	509.10	474.10	83.0
		#40	408.50	386.60	77.3
		#100	367.90	338.50	69.7
		#200	459.20	314.70	32.0
		#270	493.50	390.70	5.2

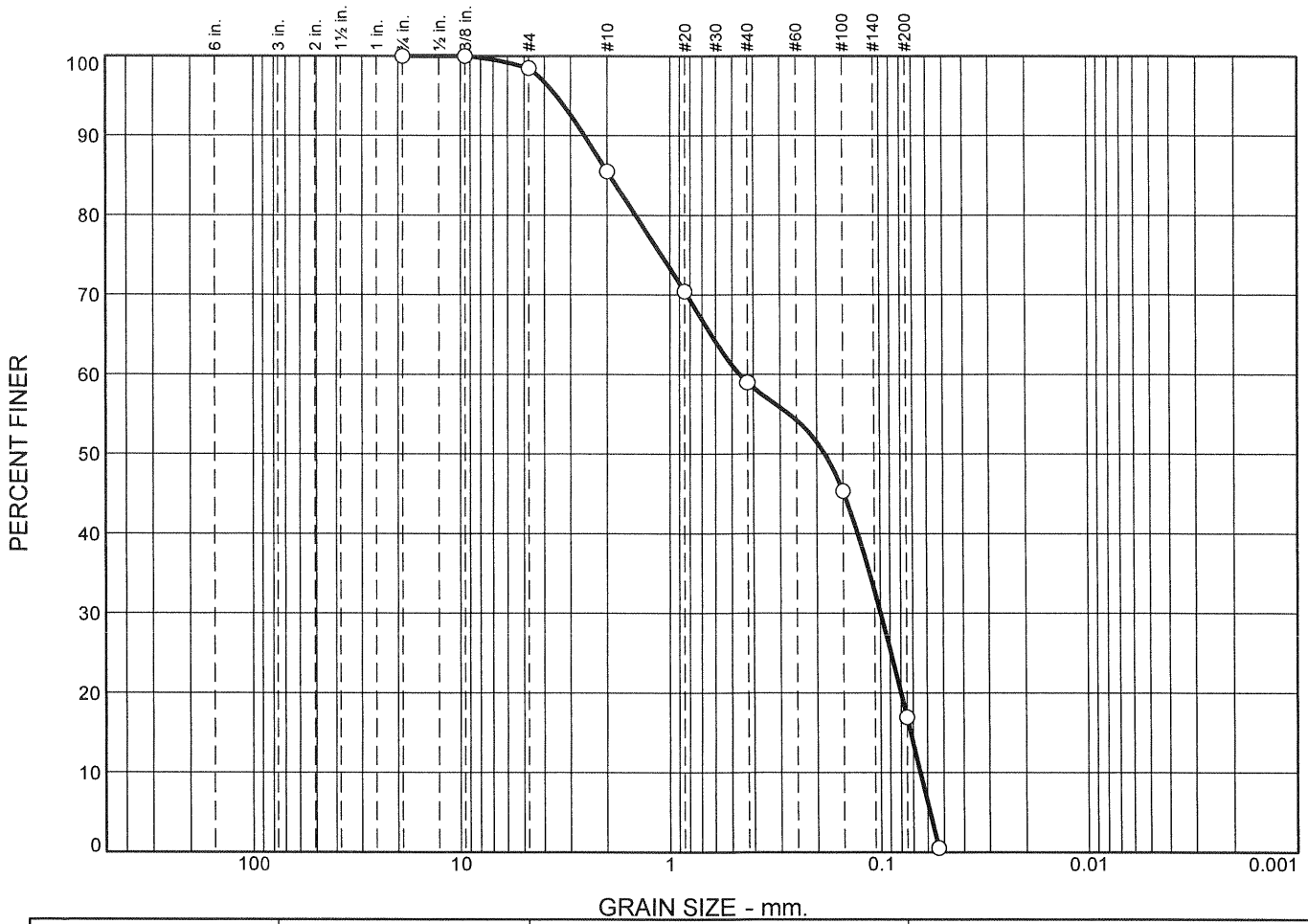
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.4	0.4	7.4	14.9	45.3	67.6			32.0

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0563	0.0600	0.0640	0.0730	0.0841	0.0982	0.1180	0.6378	1.0176	1.6291	2.6170

Fineness Modulus	C_u	C_c
0.96	2.09	0.80

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	1.5	13.0	26.5	42.0	17.0	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SB-15-11	1506418-			
	BPD	016A			

RTI LABORATORIES

Livonia, Michigan

Client: USACE - Detroit District

Project: Sturgeon Bay

Project No.:

Figure

Tested By: EL 07/02/15 8:10

GRAIN SIZE DISTRIBUTION TEST DATA

7/2/2015

Client: USACE - Detroit District
Project: Sturgeon Bay
Location: SB-15-11 BPD
Sample Number: 1506418-016A
Tested by: EL 07/02/15 8:10

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
215.80	0.00	.75	556.20	556.20	100.0
		.375	541.70	541.70	100.0
		#4	501.00	497.70	98.5
		#10	483.10	455.10	85.5
		#20	506.60	474.10	70.4
		#40	411.30	386.60	59.0
		#100	367.90	338.50	45.4
		#200	376.00	314.70	17.0
		#270	426.10	390.70	0.6

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.5	1.5	13.0	26.5	42.0	81.5			17.0

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0582	0.0647	0.0720	0.0800	0.0994	0.1271	0.1831	0.4608	1.4622	1.9452	2.5725	3.5030

Fineness Modulus	C_u	C_c
1.71	7.12	0.33

RTI Laboratories - Definitions and Acronyms

WO#: 1506418

Date Reported: 9/10/2015
Revision v4

DEFINITIONS:

DF: Dilution factor; the dilution factor applied to the prepared sample.

DL: Detection Limit; The lowest concentration of analyte that can be detected by the method in the applicable matrix.

DUP: Duplicate; aliquots of a sample taken from the same container under laboratory conditions and processed and analyzed independently, used to calculate Precision (%RPD).

LCS: Laboratory Control Sample; prepared by adding a known amount of target analytes to a specified amount of clean matrix and prepared with the batch of samples, used to calculate Accuracy (%REC).

LCSD: A duplicate LCS sample, used to calculate both Accuracy (%REC) and Precision (%RPD)

LOD: Limit of Detection; a laboratory verified concentration that can be detected at three times greater than the noise level. This concentration is equal to or greater than the DL.

LOQ: Limit of Quantitation; The lowest verified limit to which data is quantified without qualifications. Analyte concentrations below the LOQ are reported with a "J" qualifier.

MBLK: Method Blank; a sample of similar matrix that does not contain target analytes or interference that may impact the analytical results and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedure, used to assess and verify that the analytical process is free of contamination.

Mg/Kg or mg/L: Units of part per million (PPM) – milligram per Kilogram (W/W) or milligram per Liter (W/V).

MS: Matrix Spike; prepared by adding a known amount of target analytes to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available, used to calculate Accuracy (%REC)

MSD: A duplicate MS sample, used to calculate both Accuracy (%REC) and Precision (%RPD)

% REC: Percent Recovery of a known spike (SPK); a measure of accuracy expressed as a percentage of a measured (recovered) concentration compared to the known concentration (SPK) added to the sample. This is compared to the Low Limit and High Limit.

% RPD: Relative Percent Difference; a measure of precision expressed as a percentage of the difference between two duplicates relative to the average concentration. This is compared to the RPD Limit.

Qual: Qualifier that applies to the analyte reported

SPK: Spike; used in the QC section for both SPK Value and SPK Ref Val

Ug/Kg or ug/L: Units of part per billion (PPB) – microgram per Kilogram (W/W) or microgram per Liter (W/V).

QUALIFIERS:

*: Reported value exceeds the maximum allowed concentration by regulation or permit.

B: Analyte detected in the associated Method Blank at a concentration greater than 1/2 the LOQ

G: ICB/CCB result is greater than the MDL

H: Holding time for preparation or analysis has been exceeded

J: Estimated result. Greater uncertainty is associated with this result and data reported is estimated.

M: Manual Integration used to determine area response

P: Second column RPD exceeds 40%

Q: % REC exceeded control limits. When applied to sample analytes - denotes an associated LCS recovery that exceeded control limits.

R: % RPD exceeds control limits

T: MBLK result is greater than 1/2 of the LOQ

U: The analyte concentration is less than the DL. The result is reported as less than the LOD

X: Matrix spike recovery for the noted analyte exceeded control limits. Applied to the MS/MSD parent sample.

Y: Percent Difference/Drift in the associated CCV exceeded acceptance criteria.

Z: Percent Difference/Drift in the associated ICV exceeded acceptance criteria.

CHAIN OF CUSTODY

PAGE: 1 OF: 2

RTI LABORATORIES

Environmental Sciences Division
31628 Glendale Street
Livonia MI, 48150

Materials Testing Division
33080 Industrial Road
Livonia, MI 48150

PHONE: (734) 422-8000
FAX: (734) 422-5342
www.rtilab.com

RTI WORK ORDER NO: 1506418

Please Include Email Address of Report Recipient !!!

SUBMITTING COMPANY: RTI	REPORT TO (Name): PAM HORNER	BILL TO: USACE
PROJECT NAME: STURGEON BAY / PROJECT #: DC08 / QUOTE #: 14240	COMPANY: USACE DETROIT	COMPANY:
SAMPLING LOCATION (STATE or COUNTRY): STURGEON BAY, WI	ADDRESS:	ADDRESS:
SPECIAL INSTRUCTIONS / COMMENTS: PRELIMINARY REPORT FOR METALS, Hg, PAH + PCBs as soon as possible	CITY, STATE, ZIP: ON FILE	CITY, STATE, ZIP:
	PHONE: / EMAIL (OR FAX IF NO EMAIL AVAILABLE):	P.O NUMBER:
SAMPLER'S PRINTED NAME: FRED HOITASH	SAMPLER'S SIGNATURE:	

TESTS REQUESTED

ITEM NUMBER	SAMPLE I.D.	DATE SAMPLED	TIME SAMPLED (24-hour format)	MATRIX CODE (see codes below)	NBR OF BOTTLES	NBR OF CONTAINERS AND PRESERVATIVES: NONE	HCL	HNO_3	H_2SO_4	NaOH	Methanol	OTHER	METALS, Hg	PAH, PCB, PEST	MOIST, VRS, GR SIZE	TKN, NH_3, P-T	TOC, COD	O&G, CN	Sb (GRAV)	pH Acceptable? Y N n/a (Lab only)	COMMENTS: Methanol Preserved Weights, HOT Sample Notation, Additional Sample Description, Air Volume, etc.
1	SB-15-01	6/9/15	0818	S	3								X	X	X	X	X	X	X	N/A	
2	SB-15-02		0842										X	X	X	X	X	X	X	N/A	
3	SB-15-03		0909	~~1009~~ PAH									X	X	X	X	X	X	X	N/A	
4	SB-15-04		0942	~~1042~~ PAH									X	X	X	X	X	X	X	N/A	
5	SB-15-05		1041										X	X	X	X	X	X	X	N/A	
6	SB-15-06		1108										X	X	X	X	X	X	X	N/A	
7	SB-15-07		1250										X	X	X	X	X	X	X	N/A	
8	SB-15-08		1335										X	X	X	X	X	X	X	N/A	
9	SB-15-09		1532										X	X	X	X	X	X	X	N/A	
10	SB-15-10		1439										X	X	X	X	X	X	X	N/A	

Relinquished By:	Date	Time	Received By:	Date	Time
	6/11/15	0900		6-11-15	10:00
Relinquished By:	Date	Time	Received By:	Date	Time
Relinquished By:	Date	Time	Received By:	Date	Time

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

ALL REPORTING IS VIA THE RTI "FLASHPOINT" ONLINE SYSTEM UNLESS OTHERWISE SPECIFIED

TURNAROUND DESIRED: Standard ☑ **RUSH:** Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

FOR LAB USE ONLY

Temp of ~~samples~~ Blanks 0.8, 1.4 °C On Wet Ice ? Y

Comments: 1F

Distribution: White - Lab; Pink - Field

See reverse side for Laboratory Terms and Conditions of Service

MATRIX CODES: A = AIR; DW = DRINKING WATER; GW = GROUNDWATER; L = LIQUID; O = OIL; WW = WASTE WATER; S = SOIL; SD = SOLID; SL = SLUDGE; SV = SOLVENT WASTE; W = WATER; WP = WIPE; SW = SURFACE WATER

RTI LABORATORIES

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PAGE: 2 OF: 2

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BILL TO: USA12

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COMPANY:

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SAMPLER'S PRINTED NAME: FRED HOITASH
SAMPLER'S SIGNATURE: [signature]

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11	SB-15-11	6/8/15	1843	S									X	X	X	X	X	X	X		N/A	
12	SB-15-12	6/8/15	1750	S									X	X	X	X	X	X	X		N/A	
13	SB-15-07 BPD	6/9/15	1250	S									X	X	X	X	X	X	X		N/A	
14	SB-15-08 BPD	6/9/15	1335	S									X	X	X	X	X	X	X		N/A	
15	SB-15-10 BPD	6/9/15	1439	S									X	X	X	X	X	X	X		N/A	
16	SB-15-11 BPD	~~6/9/15~~ 6/8/15	1843	S									X	X	X	X	X	X	X		N/A	
7																						
8																						
9																						
10																						

Relinquished By:	Date	Time	Received By:	Date	Time
[signature]	6/11/15	0900	[signature]	6-11-15	10:00

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FOR LAB USE ONLY

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