

**Waukegan Approach Channel Monitoring 2012
And
Contaminant Determination for Dredging and Open Water Disposal**

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1. Introduction

This report documents the collection, analysis, and results of the May through July 2012 maintenance dredging monitoring for the Waukegan Harbor Advance Maintenance Area. All activities for these sampling events were performed in accordance with *the Great Lakes Dredged Material Testing and Evaluation Manual* (1998) and the *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S.* (Inland Testing Manual, 1998).

The following document also serves as a contaminant determination report prepared by the U.S. Army Corps of Engineers (USACE) Chicago District for the maintenance dredging at the Advance Maintenance Area and Approach Channel of Waukegan Harbor for the next dredging season. This document satisfies the requirements of the conditions of the Illinois Environmental Protection Agency (IEPA) Permit #2005-LM-2830 dated February 1, 2005 and its three revisions dated June 28, 2005; April 1, 2008; and March 6, 2009.

1.1 Project Description

Waukegan Harbor is located in Waukegan, Illinois approximately 40 miles north of downtown Chicago, Illinois. The Chicago District is responsible for all maintenance dredging within the federal navigation channel of Waukegan Harbor. Contamination, most notably polychlorinated biphenyls (PCBs), was discovered in the Inner Harbor sediments during the 1970s and was traced to a local industry. A Superfund clean-up project in the 1990s removed the most heavily contaminated sediment from the inner harbor. Dredging operations in the inner Waukegan Harbor have been suspended due to the disposal issues associated with the contaminated sediments. The contamination in the harbor has not migrated to the Approach Channel and this area is still dredged on a regular basis (see **Figure 1** for locations of the Approach Channel, the Advance Maintenance Area, and the inner confines of Waukegan Harbor). The sediment in the Approach Channel is primarily littoral drift sand from north of the harbor.

1.2 Historical Data

Table 1 provides a cursory comparison of the sediment quality in the Waukegan Inner Harbor and the Approach Channel. The Inner Harbor data are an average of sediment samples collected in 1995, 1996, and 1997. The Approach Channel data were taken from the Tier I analysis and represents data from 1985 through 1995. It is important to note that these averages do not take into account non-detectable data points. Many data points collected from the Approach Channel returned non-detectable results whereas none of the samples collected from the Inner Harbor returned non-detectable results. **Table 1** clearly shows significantly higher levels of contamination within the Inner Harbor and indicates that there has not been contaminant migration that has impacted sediment in the Approach Channel.

Table 1: Inner Harbor/Approach Channel Average Sediment Concentrations

Parameters	Inner Harbor (mg/kg)	Approach Channel (mg/kg)
PCBs	14.5	0.2
Ammonia	254	6.5
Arsenic	25.3	1.5
Iron	14800	3276

Table 2 displays more recent data from samples collected in the Approach Channel and Advance Maintenance Area in preparation for maintenance dredging. This table supports the conclusion that migration of material from the inner harbor to the approach channel is not taking place. There were only two PCB detections slightly above the detection limit in 1997 and non-detect since, except in 2008 when there were two detections above reporting limits but below the calculated historic mean of 0.2 mg/kg and well below the TSCA-regulated level of 50 mg/kg for PCB-contaminated material. Only trace amounts of asbestos were detected on two occasions (1999 and 2000), and the fines concentration is usually low.

Table 2: Approach Channel Sediment Data, 1997 – 2010

Sample Number	Sample Date	PCB Concentration (mg/kg)	Asbestos Concentration ¹ (%)	Grain Size (% fines) ²
WH-SED-0810-1	08/10/10	<0.00271	ND	25
WH-SED-0810-2		<0.00271	ND	33
WH-SED-0810-3		<0.00271	ND	30
WH-SED-1027-1	10/27/09	<0.0216	ND	16
WH-SED-1027-2		<0.0216	ND	2.8
WH-SED-1027-3		<0.0216	ND	3.1
WAM-1008-001	10/08/08	0.080 (PCB-1248)	ND	0.73
WAM-1008-002		0.049 (PCB-1248)	ND	0.57
WAM-1008-003		<0.017	ND	0.53
WAM-0905-001	09/05/07	<0.0269	ND	1.4
WAM-0905-002		<0.0264	ND	0.5
WAM-0905-003		<0.0289	ND	4.2
WAM-1005-001	10/27/05	<0.0324	ND	4.5
WAM-1005-002		<0.0340	ND	6.5
WAM-1005-003		<0.0411	ND	3
WAM-0804-001	08/16/04	<0.0336	ND	1.1
WAM-0804-002		<0.0313	ND	3.9
WAM-0804-003		<0.0310	ND	1.2
WUD-1003-001	10/27/03	<0.0336	ND	0.4
WAM-1003-001		<0.0336	ND	6.4
WAM-1003-002		<0.0336	ND	4.0
WAM-1003-003		<0.0336	ND	0.8
WAM-1003-COMP		-- ³	ND	--
WUD-1002-001	10/10/02	<0.0388	ND	1.7
WAM-1002-001		<0.0388	ND	0.8
WAM-1002-002		<0.0388	ND	17.3
WAM-1002-003		<0.0388	ND	8
WAM-1002-COMP		--	ND	--
WUD-1001-001	10/23/01	< 0.025	ND	5.8
WAM-1001-001		< 0.025	ND	5.2
WAM-1001-002		< 0.025	ND	4.9
WAM-1001-003		< 0.025	ND	17.6
WAM-1001-COMP		--	ND	--
WAM-1000-001	10/17/00	< 0.025	ND	3.7
WAM-1000-002		< 0.025	ND	3.6
WAM-1000-003		< 0.025	ND	2.8

Sample Number	Sample Date	PCB Concentration (mg/kg)	Asbestos Concentration ¹ (%)	Grain Size (% fines) ²
WAM-1000-004		< 0.025	ND	3.4
WAM-1000-005		< 0.025	ND	3.2
WAM-1000-006		< 0.025	ND	3.9
WAM-1000-COMP		--	Trace	--
WAUK-AM-1	9/23/99	< 0.025	ND	1.4
WAUK-AM-2		< 0.025	Trace	6.0
WAUK-AM-3		< 0.025	ND	5.5
WAUK-AM-COMP		--	ND	--
WAM-1198-001	11/24/98	< 0.05	ND	1.2
WAM-1198-002		< 0.05	ND	0.6
WAM-1198-003		< 0.05	ND	0.6
WAM-1198-COMP		--	ND	--
WOH-1297-001	12/17/97	0.074	ND	0.8
WOH-1297-002		< 0.05	ND	0.3
WOH-1297-003		0.08	ND	1.0

Notes:

- 1) 2005 – 2010 asbestos analyses were performed by Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM). All previous asbestos analyses were performed by PLM except for the six composites, which were performed using TEM.
- 2) “% fines” indicates the percentage of particles passing through a #230 sieve.
- 3) “—“ indicates that the sample was not analyzed for the parameter.

1.3 Dredging Activities

Through December 2003 all dredging activities in the Approach Channel and Advance Maintenance Area were performed in accordance with the Section 401 Ten Year Maintenance Dredging Permit No. 284 LM that was issued on April 5, 1993 and expired on December 31, 2003. The current certification and final determination was issued by IEPA on February 1, 2005. It was then revised on June 28, 2005; April 1, 2008; and again on March 6, 2009. This certification and final determination expires December 31, 2014. The current 10-year dredging permit was issued by IDNR on February 22, 2005 and expires on December 31, 2015. Recent correspondence with IEPA and IDNR concerning dredging activities is located in **Appendix A** of this report. For the summer of 2012 dredging, a one-time temporary increase in dredging quantity was granted. Severe storms in late 2011 blocked the channel, creating dangerous conditions and closing the Harbor. This additional dredging allowed for the reopening of Waukegan Harbor. Dredging activities in the Advance Maintenance Area and Approach Channel have taken place annually or biannually since 1985. The last time dredging took place was summer 2012. Because dredged materials from these areas have been disposed of in open water, water quality certification pursuant to Section 401 of the Clean Water Act and Section 39 of the Illinois Environmental Protection Act is required every year that material is disposed.

Two documents serve as the primary guidance for disposing of dredged materials (*Great Lakes Dredged Material Testing and Evaluation Manual* and the *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. or Inland Testing Manual*). These guidance documents were prepared by USACE and the U.S. Environmental Protection Agency (USEPA). The *Great Lakes Dredged Material Testing and Evaluation Manual* was created to provide specific guidance for disposal within the Great Lakes and is structured similarly to the Inland

Testing Manual. Both manuals present a tiered, integrated testing approach that complies with the requirements of Section 404(b)1 of the Clean Water Act (CWA).

The Tier I and Tier II requirements provided in these manuals were satisfied for this project by documents completed by USACE in October 1995 and April 1996, respectively. These documents were submitted to the IEPA Division of Water Pollution Control and the USEPA Planning and Management Division. IEPA approval of the Tier I and Tier II evaluations was provided in correspondence dated November 28, 1995 and May 30, 1996 respectively (see **Appendix A**). Since no substantial changes have occurred in sediment quality or potential contaminant sources since the preparation of these documents, they continue to remain valid.

The area proposed for future dredging is the same as prior years, in the Approach Channel and Advance Maintenance Area (**Figure 1**). The region extends approximately 1400 ft east from the east end of the north breakwater, and extends about 650 ft south toward the east-west line extension from the U.S. South Pier. The total area being considered for future dredging operations is approximately 910,000 (1400 X 650) sq. ft. This area is within the federal navigation channel and the Advance Maintenance Area. Soundings will be performed prior to dredging to determine precise regions of shoaling.

Between 1995 and 1998, sediment was disposed of in an area 1 mile south of Waukegan Harbor (Disposal Location 1) as shown on **Figure 2**. In 2003, this disposal location was moved further away from the shore, shifting the western-most edge of the site from 1,000 to 2,000 feet out from the shoreline. This new boundary for Disposal Location 1 has been used from 2003 to the present. From 1999 to 2002 and in 2005, 2008 and 2009, dredged material was used as beach nourishment at two different locations along Illinois Beach State Park (IBSP) (Disposal Locations 2 and 3) as presented on **Figure 3**. In the most recent dredging year (2012) 71,400 cubic yards of mechanically dredged material were placed in Disposal Location 1 and 36,300 cubic yards were placed in Disposal Location 2. Disposal Locations 1, 2, and 3 are potential sediment disposal sites for the next dredging event.

2. Water Quality Monitoring during Dredging Operations

Water samples are taken in Lake Michigan during sediment disposal operations for the purpose of monitoring water quality. Water quality monitoring samples were collected during dredging as required by Special Condition #7 of Permit # 2005-LM-2830 dated February 1, 2005 and its three revisions dated June 28, 2005; April 1, 2008; and March 6, 2009.

Samples were taken twice weekly during the first week of dredging, and weekly thereafter for the duration of dredging operations. Disposal samples are taken 500' downstream of the discharge point at one hour and four hours after sediment is disposed. For the 2012 operation, downstream was determined to be south of the discharge point. A background sample is also collected at 1,000' upstream of the disposal on the same day and in the same time frame as the disposal samples. At each location (disposal and background) samples were collected at the surface and at mid-depth of the water column. See **Water Quality Monitoring Maps #1 – 11** for the locations of samples for each sampling event and specific GPS points. Amount of

sediment disposed at each discharge point can be found in the field logs included in **Appendix B**. Details of the sampling and results are given below.

2.1 Water Quality Monitoring Methods

Water quality monitoring sample collection was performed from 23 May 2012 through 09 July 2012. Exact dates for the sample collections can be viewed in **Table 3**.

Table 3: Water Quality Monitoring Sampling Dates

Date of Collection	Sample Types
May 23, 2012	Background Water Samples Blind Duplicate
June 2, 2012	Disposal Site Water Samples Background Water Samples Blind Duplicate <i>Area 2</i> <i>Background Water Samples</i> <i>Blind Duplicate</i>
June 3, 2012	Disposal Site Water Samples Background Water Samples Blind Duplicate
June 8, 2012	<i>Area 2</i> <i>Disposal Site Water Samples</i> <i>Background Water Samples</i> <i>Blind Duplicate</i>
June 17, 2012	<i>Area 2</i> <i>Disposal Site Water Samples</i> <i>Background Water Samples</i> <i>Blind Duplicate</i>
June 21, 2012	Disposal Site Water Samples Background Water Samples Blind Duplicate
June 27, 2012	Disposal Site Water Samples Background Water Samples Blind Duplicate
July 3, 2012	Disposal Site Water Samples Background Water Samples Blind Duplicate
July 5, 2012	Disposal Site Water Samples Background Water Samples Blind Duplicate
July 9, 2012	Disposal Site Water Samples Background Water Samples Blind Duplicate

Except as noted, sampling was conducted at Area 1

Water quality monitoring samples were collected and evaluated for chloride, ammonia, phosphorus, hardness, total suspended solids (TSS), pH, and temperature. Of these parameters chloride, ammonia, phosphorus, and TSS results are the focus for this dredging event. **Figures 2 and 3** show the sediment disposal areas used in 2012, Disposal Locations 1 and 2.

2.2 Water Quality Monitoring Results

Background water samples are included in the review of all analytical results. Analytical results from the laboratory are included as **Appendix B**.

Concentrations of ammonia were evaluated for collected samples. According to Special Condition #11 ammonia concentration is not to exceed 0.02 mg/L or the background concentrations measured during monitoring. Total average per day results were below 0.02 mg/L except on 6/17/2012 and 6/21/2012. The background sample result was above 0.02 mg/L on 6/2/2012. To assess impacts of the dredging on Lake Michigan the Analyse-It statistical software was used for analysis. Daily average and background sample results were compared using the Mann-Whitney test and Kruskal-Wallis test. Neither test showed a statistically significant difference (within a 95% confidence interval) between daily average and background concentrations. **Figure 4** and **Table 4** both display the daily average concentration of ammonia for all samples collected and analyzed. Surface and mid-depth concentrations can be seen in **Tables 5 and 6**. Graphical comparisons are shown in **Figures 5 and 6**. Based on the data there is no evidence that Waukegan Harbor sediment disposal is impacting ammonia concentrations at the disposal site.

Concentrations of phosphorus were evaluated for collected samples. According to Special Condition #11 phosphorus concentration is not to exceed 0.007 mg/L or the background concentrations measured during monitoring. Total average per day results were all above 0.007 mg/L. All background samples were above 0.007 mg/L except on 6/2/2012 and 7/3/2012. Total average per day results were above the day's background on 6/3/2012, 6/21/2012 and 7/3/2012. To assess impacts of the dredging on Lake Michigan the Analyse-It statistical software was used for analysis. Daily average and background sample results were compared using the Mann-Whitney test and Kruskal-Wallis test. Neither test showed a statistically significant difference (within a 95% confidence interval) between daily average and background concentrations. **Figure 7** and **Table 7** both display the daily average concentration of phosphorus for all samples collected and analyzed. Surface and mid-depth concentrations can be seen in **Tables 8 and 9**. Graphical comparisons are shown in **Figures 8 and 9**. Based on the data there is no evidence that Waukegan Harbor sediment disposal is impacting phosphorus concentrations at the disposal site.

Concentrations of chloride were evaluated for collected samples. According to Special Condition #11 chloride concentration is not to exceed 12 mg/L or the background concentrations measured during monitoring. Total average per day results were all below 12 mg/L except on 6/27/2012. The background sample result was above 12 mg/L on 5/23/2012. To assess impacts of the dredging on Lake Michigan the Analyse-It statistical software was used for analysis. The total daily average result on 6/27/2012 is greater than 1.5 times the interquartile range (IQR) and

can be considered an outlier. Daily average and background sample results were compared using the Mann-Whitney test and Kruskal-Wallis test. Neither test showed a statistically significant difference (within a 95% confidence interval) between daily average and background concentrations. **Figure 10** and **Table 10** both display the daily average concentration of chloride for all samples collected and analyzed. Surface and mid-depth concentrations can be seen in **Tables 11** and **12**. Graphical comparisons are shown in **Figures 11** and **12**. Based on the data there is no evidence that Waukegan Harbor sediment disposal is impacting chloride concentrations at the disposal site.

Concentrations of total suspended solids were evaluated for collected samples. There is no Water Quality Standard for TSS. National Pollutant Discharge Elimination System (NPDES) issues permits with TSS limits based on the industry, location, etc. These limits can range from but are not limited to 12 mg/L and up to 40 mg/L. None of the samples collected during sediment disposal exceeded 12 mg/L. The daily average TSS concentrations of water samples collected for this dredging event ranged from 0.40 mg/L to 2.30 mg/L. The average background TSS concentrations of water samples ranged from non-detect (reporting limit 0.40 mg/L) to 2.00 mg/L. To assess impacts of the dredging on Lake Michigan the Analyse-It statistical software was used for analysis. Daily average and background sample results were compared using the Mann-Whitney test and Kruskal-Wallis test. Neither test showed a statistically significant difference (within a 95% confidence interval) between daily average and background concentrations. Average daily and background TSS concentrations are shown in **Table 13** and **Figure 13**. Surface and mid-depth concentrations can be seen in **Tables 14** and **15** respectively. Graphical comparisons of surface and mid-depth results are shown in **Figures 14** and **15** respectively. Based on this data there is no evidence that Waukegan Harbor sediment disposal is impacting TSS concentrations at the disposal site.

2.3 Conclusion Regarding Monitoring

Water Quality Monitoring during sediment disposal for Waukegan Harbor Approach Channel was completed. Statistical comparisons between background and monitoring sample results did not indicate any difference between the data sets. Based on the results, sediment disposal operations are not having an impact on water quality in Lake Michigan.

3. Sediment Sampling for Future Dredging

In accordance with Special Condition #5, sampling and analysis must be conducted prior to each dredging event for a minimum of three samples from the dredge cut. The purpose of this sampling is to obtain and characterize material that is representative of the dredge area, in advance of the next dredging operation. On 12 July 2012, the following samples were collected; three sediment samples from the Waukegan Harbor Advance Maintenance Area, and two water samples and three sediment samples from the Illinois Beach State Park reference site.

3.1 Determining Advance Maintenance Area Sample Locations

The EPA publication “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods”, commonly referred to as SW-846, is the EPA’s official compendium of analytical and sampling

methods that have been evaluated and approved for use in complying with the RCRA regulations. SW-846 functions primarily as a guidance document setting forth acceptable, although not required, methods for the regulated and regulatory communities to use in responding to RCRA-related sampling and analysis requirements. SW-846 is commonly used as a reference for other non-RCRA projects due to its conservative qualities and universal applicability to environmental work. Both the Inland and Great Lakes Testing Manuals include SW-846 as a reference in their texts, which means it is a suitable reference for dredging projects such as the work at Waukegan Harbor. To obtain sampling accuracy, SW-846 recommends the use of a variety of random sampling methods depending on the characteristics of the sampling area. Chapter 9 of SW-846, titled “Sampling Plan,” describes simple random sampling as follows:

“If a batch of waste is randomly heterogeneous with regard to its chemical characteristics and that random chemical heterogeneity remains constant from batch to batch, accuracy and appropriate precision can usually be achieved by simple random sampling. In that type of sampling, all units in the population (essentially all locations or points in all batches of waste from which a sample could be collected) are identified and a suitable number of samples is randomly selected from the population.”

Random chemical heterogeneity implies that any contamination may occur at any point within the sample location; there is no bias for sampling from one point or another. This fits the description of the Advance Maintenance Area and Approach Channel. The sediment in these areas is deemed generally homogeneous and any contamination could occur at any point.

SW-846 describes the selection of sampling locations using a random sampling grid. The following excerpt was taken from Chapter 9 of SW-846:

“One of the commonest methods of selecting a random sample is to divide the population by an imaginary grid, assign a series of consecutive numbers to the units of the grid, and select the numbers (units) to be sampled through the use of a random-numbers tables (such a table can be found in any text on basic statistics). It is important to emphasize that a haphazardly selected sample is not a suitable substitute for a randomly selected sample. That is because there is no assurance that a person performing undisciplined sampling will not consciously or subconsciously favor the selection of certain units of the population, thus causing the sample to be unrepresentative of the population.”

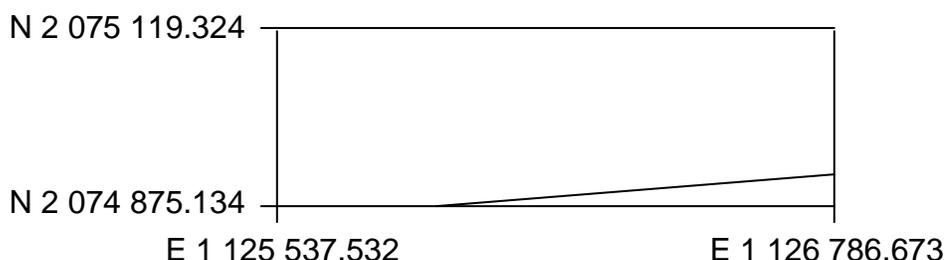
Further guidance for random sampling was found in the EPA document “Methods for Evaluating the Attainment of Cleanup Standards Volume 1: Soils and Solid Media”. This document details among other things, a method for determining sample locations for the simple random sampling method.

Before exact sample locations could be determined the area from which the samples would be taken had to be determined. Because of historical dredging work, temporal movement of sediments in the area is known. The littoral drift along the West Coast of Lake Michigan is in

the southerly direction, meaning that sediments accumulate in the northerly Advance Maintenance Area prior to the southerly Approach Channel. Prior to dredging, soundings are made of these two regions and areas of shoaling requiring dredging are determined. For recent dredging events, most of this shoaling has occurred in the Advance Maintenance Area, which is why sampling has been relegated to this region.

After the sampling areas were determined the next step was to establish a grid of the sampling area. Using the EPA guidance document listed above, a grid was established for the Advance Maintenance Area using the state plane coordinates. **Diagram 1** below is a representation of the sampling grid that was used:

Diagram 1: Sampling Area Grid



Once the sampling grid was established, the set of equations listed below were used to determine the coordinates for the sampling points:

$$X = X_{\min} + (X_{\max} - X_{\min}) * RAND$$

$$Y = Y_{\min} + (Y_{\max} - Y_{\min}) * RAND$$

Where X and Y are the coordinates, X_{\min} and X_{\max} are the limits of the grid on the X axis (1 125 537.532 to 1 126 786.673), and Y_{\min} and Y_{\max} are the limits of the Y axis (2 074 875.134 to 2 075 119.324). RAND is a random number between 0 and 1 and is generated from a random number generator function in Microsoft Excel. Viewing **Diagram 1**, it is apparent that the Advance Maintenance Area does not fit squarely into the grid. The lower right hand corner is inset slightly, which leaves open the possibility of a generated sample coordinate being located outside of the Advance Maintenance Area. The EPA guidance document suggests that generated sample coordinates that fall outside of the intended sample boundary simply be omitted and another set of coordinates generated.

Prior to the event, sufficient shoaling for sampling was identified and a list of 25 possible points was generated (See **Table 16** below). A large number of sampling locations is necessary in case access is limited to a certain area or in case shoaling is not present in some of the locations. Historical patterns of sediment accumulation are known, however exact conditions can vary. This entire list of points was plotted (see **Figure 16**) to see if any of the points were located outside of the sampling area. Points which fell in the area outside of the Advance Maintenance Area were omitted.

Table 16: List of Possible Sample Locations – Advance Maintenance Area

	Longitude	Latitude
Point A*	-87.80862590	42.36187607
Point B	-87.80915489	42.36258259
Point C	-87.80889604	42.36238027
Point D	-87.80943500	42.36225881
Point E*	-87.80834541	42.36204519
Point F	-87.80909934	42.36214456
Point G	-87.80983009	42.36246220
Point H	-87.80893995	42.36211270
Point I	-87.80955246	42.36250927
Point J	-87.80840786	42.36226719
Point K	-87.80754469	42.36217204
Point L	-87.80864441	42.36213776
Point M	-87.81026632	42.36247402
Point N	-87.81028841	42.36245193
Point O	-87.80877388	42.36253109
Point P	-87.81033272	42.36208832
Point Q*	-87.80969571	42.36190270
Point R	-87.80956296	42.36227318
Point S*	-87.81018662	42.36194184
Point T*	-87.80977160	42.36181166
Point U	-87.81041302	42.36216849
Point V	-87.80862534	42.36223685
Point W*	-87.80976376	42.36184866
Point X*	-87.80900157	42.36189880
Point Y	-87.81029720	42.36234699

Note: * Sample point located outside of sampling area and eliminated

3.2 Advance Maintenance Area Sediment Samples

Three sediment samples were collected from three random locations inside the Advance Maintenance Area on 12 July 2012. Possible sample locations were determined prior to the sampling event using a scientific method recommended by the USEPA and detailed in the previous section. Points which fell outside of the Advance Maintenance Area were eliminated from consideration. Additionally sediment samples for the next dredging could not come from a location which was dredged as a part of the 2012 dredging project. **Figure 16** shows the locations of the 25 points, with the final sample locations labeled as Points K, V and L.

The sampling locations were approached using a Global Positioning System (GPS) unit with an accuracy of 15 feet. The coordinates at which the samples were collected may vary slightly from the coordinates originally chosen. In each instance, the sampling team positioned the sampling

bucket as close as possible to the specified sampling location however wind and current at the time can cause some drift of the sampling vessel. The three harbor locations that were used for this sampling event are listed in **Table 17**.

Table 17: Actual Sample Locations – Advance Maintenance Area

Sample	Corresponding Point
Dredging Sediment – Sample #1	Point K
Dredging Sediment – Sample #2	Point V
Dredging Sediment – Sample #3	Point L

After arriving at each sample location, the dredging or sample depth was determined. Dredging in the Advance Maintenance Area and Approach Channel of Waukegan Harbor is authorized to a depth of -22 feet LWD, plus there is potentially an additional two feet that may be dredged due to the allowance for over-depth dredging. Since the sediment samples need to represent the composition of the dredged material, samples were collected to approximately -24 feet LWD to include the potential for over-depth dredging.

Composite samples were collected using a mechanical dredging bucket. The dredging bucket was lowered to the sediment surface where it collected a bucket of sediment. The bucket was then raised to the deck of the barge where representative samples were collected and placed in a large stainless steel mixing bowl. When the sampling was complete, the bucket was emptied away from the original sampling spot and, if necessary, it was lowered again to the site of the original sample where it collected additional sediment. This procedure was repeated until the bottom of the dredging depth was reached. All sampling points required multiple buckets of material be retrieved to reach -24 feet LWD. The samples that were collected at each depth were then mixed in the stainless steel bowl and measured into sample jars. **Figures 17-19** show photos of the samples from the Advance Maintenance Area.

3.3 Illinois Beach State Park Sediment Samples

Three sediment grab samples were collected at the IBSP reference site north of the North Point Marina (see **Figure 3**). The *Great Lakes Dredged Material Testing and Evaluation Manual* recommends selecting a reference site separate from the disposal area when the disposal area has already been used. The intent is to obtain sediment samples that are representative of the general area where disposal will occur, but to avoid sampling disposed dredged material from a previous dredging event. These samples were taken approximately 300 feet from each other near to the water’s edge. A hand scoop was used to collect the samples from the top of the sediment surface. **Table 18** shows the collection locations of the three reference samples, as given by a hand-held GPS with an accuracy of approximately 15 feet.

Table 18: IBSP Reference Sample Locations

Sample	Longitude	Latitude
Beach Sediment #1	-87.802056	42.490417
Beach Sediment #2	-87.802444	42.491250
Beach Sediment #3	-87.802667	42.492000

In all of the samples that were collected the sediment was brown sand. No visual contamination or noticeable odor was present in the samples. Samples collected from each location were homogenized using decontaminated stainless steel mixing equipment, and placed in containers provided by the analytical laboratory.

3.4 Illinois Beach State Park Water Samples

Two water samples (Beach Water 1 and Beach Water 2) were collected from one location at the Illinois Beach State Park reference site. These samples are part of Special Condition #5 for supernatant testing requirements for open water placement of dredged material.

Dredging sediment from a waterway can generate concern about the release of contaminants to the water column. A supernatant test involves mixing sediment and site water, allowing the particles to settle, and analyzing the supernate for contaminants. Supernate is the liquid above the sediment that has settled out. The supernatant test on the samples taken in 2012 was conducted twice; once at “zero hours” equivalent to just after mixing, and once at four hours after mixing. Sample Beach Water 2 was used for the supernatant test. The sediment used was a composite of the three Advance Maintenance Area sampling locations. The second water sample (Beach Water 1) was the reference water sample and was analyzed for the same parameters. Water temperature on site was recorded as 16.7 °C and pH was 8.09.

3.5 Sediment Sampling Results

All six sediment samples were analyzed for PCBs (Method 8082), asbestos (polarized light microscopy (PLM) and transmission electron microscopy (TEM)), and grain size (in accordance with the protocol required by the IEPA for Section 39 water quality certification). Results for the PCB and asbestos analysis can be found in **Table 19**. The complete lab report containing all analytical results is located in **Appendix B**.

Table 19: Sediment PCB and Asbestos Results

	Dredging Sediment			Beach Sediment			PCB Reporting Limit (mg/kg) ²
	1	2	3	1	2	3	
PCB-1016	ND ¹	ND	ND	ND	ND	ND	0.0214
PCB-1221	ND	ND	ND	ND	ND	ND	0.0214
PCB-1232	ND	ND	ND	ND	ND	ND	0.0214
PCB-1242	ND	ND	ND	ND	ND	ND	0.0214
PCB-1248	ND	ND	0.0163	ND	ND	ND	0.0214
PCB-1254	ND	ND	ND	ND	ND	ND	0.0214
PCB-1260	ND	ND	ND	ND	ND	ND	0.0214
Asbestos-PLM (%)	ND	ND	ND	ND	ND	ND	
Asbestos-TEM (%)	ND	ND	ND	ND	ND	ND	

Note:

- 1) ND indicates the contaminants were not present above the stated reporting limit
- 2) PCB Reporting Limit shown is highest value when reporting limit varied between samples

3.6 Sediment PCB Analysis

As part of a Tier 1 analysis performed by USACE in 1995, data were collected from past sampling events in the Advance Maintenance Area and Approach Channel and a mean concentration for PCBs was computed. In determining the mean concentration, non-detect data was assumed to be equal to the reporting limit. The average total PCB concentration of the historic samples, which includes samples from 1985-1995, was calculated to be 0.2 mg/kg, with individual values as high as 0.6 mg/kg total PCBs (USACE 1995). **Table 2** contains more recent PCB results for sediment collected from the Advance Maintenance Area and Approach Channel between 1997 and 2010. As shown in **Table 19**, all sediment samples from the recent 2012 event were non-detect for each PCB aroclor except Dredging Sediment Sample #3 for PCB-1248, which at 0.0163 mg/kg is below the calculated historic mean of 0.2 mg/kg and well below the TSCA-regulated level of 50 mg/kg for PCB-contaminated material.

3.7 Sediment Asbestos Analysis

Due to asbestos findings around the IBSP, USACE began to analyze samples for asbestos in 1997. Results from the sampling events in 1997-1998 and 2001-2009 have shown no evidence of asbestos (USACE 2009). One sample from both the 1999 and 2000 sessions detected a trace amount of asbestos, but not at a concentration high enough to classify it as asbestos containing material (ACM).

As mentioned previously, the sediment samples were analyzed using two asbestos analytical methods: PLM and TEM. The PLM method evaluates the sediment for asbestos containing building material and asbestos fibers/bundles/matrices and has the ability to detect fibers greater than or equal to 5 microns. The TEM method uses a more sophisticated technology that can analyze fibers greater than or equal to 0.5 microns. None of the samples analyzed using the PLM and TEM methods showed signs of asbestos.

3.8 Grain Size Analysis

According to Title 35 of the Illinois Administrative Code (Subtitle C, Chapter 2, Part 395), a particle size analysis is required to evaluate the potential for water pollution due to the discharge of dredge and fill. According to Special Condition #6, particle size tests that show 20% or more material passing through a #230 U.S. Standard sieve require notice to IEPA. All of the samples collected during this sampling event show less than 20% of material passing such a sieve. Dredging sediment samples had results consistent with background beach sample results (see **Table 20**).

Table 20: Sediment Grain Size Analysis

	Dredging Sediment			Background Beach Sediment		
	1	2	3	1	2	3
% particles smaller than #230 sieve	6.26	1.38	2.66	0.2	0.4	0.3

3.9 Water Sampling Results

Both water samples were analyzed for total suspended solids (TSS), total volatile solids (TVS), total dissolved solids (TDS), ammonia-nitrogen (as N), phosphorus (as P), sulfate, chloride, lead (total), zinc (total), and total polychlorinated biphenyls (PCBs). Sample Beach Water #1 is the reference water sample. Zero hour and four hour supernatant tests were run with sample Beach Water #2. Results for these analyses can be found in **Table 21**. The complete lab report containing all analytical results is located in **Appendix B**.

Table 21: Water Sample Results

	Beach Water #2 (Elutriate)		Beach Water #1 (Ref.)	Lab Reporting Limit
	Zero Hour	Four Hour		
Total Suspended Solids (TSS)	128000 mg/L	131 mg/L	ND	0.4 mg/L
Total Volatile Solids (TVS)	12500 mg/L	164000 mg/L	18.0 mg/L	1.0 mg/L
Total Dissolved Solids (TDS)	853 mg/L	280 mg/L	161 mg/L	0.333 mg/L
phosphorus (as P)	0.244 mg/L	0.160 mg/L	0.0110 mg/L	0.005 mg/L
ammonia-nitrogen (as N)	0.375 mg/L	0.195 mg/L	0.0156 mg/L	0.01 mg/L
sulfate	26 mg/L	26 mg/L	29 mg/L	1.0 mg/L
chloride	10.8 mg/L	9.45 mg/L	10.4 mg/L	0.5 mg/L
lead (total)	0.0453 mg/L	0.00398 mg/L	0.00011 mg/L	0.0001 mg/L
zinc (total)	0.116 mg/L	0.0131 mg/L	ND	0.003 mg/L
PCB-1016	ND	ND ¹	ND	0.143 ug/L
PCB-1221	ND	ND	ND	0.143 ug/L
PCB-1232	ND	ND	ND	0.143 ug/L
PCB-1242	ND	ND	ND	0.143 ug/L
PCB-1248	ND	ND	ND	0.143 ug/L
PCB-1254	ND	ND	ND	0.143 ug/L
PCB-1260	ND	ND	ND	0.143 ug/L

Note: 1) ND indicates the contaminants were not present above the stated reporting limit

Special Condition #7 lists limits for the 4-hr supernatant test for ammonia-nitrogen (as N), chloride, phosphorus, total PCBs and total suspended solids (TSS). **Table 22** shows these amounts. As stated in the condition, if the 4-hr supernatant test results exceed the levels shown, then monitoring during the next dredging event needs to be conducted for those parameters.

Table 22: IEPA Permit Limits for 4-hr Supernatant Test

	IEPA Permit Limits
Total PCBs	0.1 ug/L
phosphorus (as P)	0.007 mg/L
ammonia-nitrogen (as N)	0.02 mg/L
chloride	12 mg/L
Total Suspended Solids	15 mg/L

When comparing **Table 21 (Water Sample Results)** with **Table 22 (IEPA Permit Limits for 4-hr Supernatant Test)**, total PCBs and chloride were below the IEPA permit limit. Because total PCB supernatant results were below the listed amounts and consistently non-detect during monitoring, it is not anticipated that this parameter will be monitored for the next dredging event. Chloride 4-hr supernatant results were below the IEPA permit limit; however since a few monitoring events had results above background, USACE will continue to monitor for chloride for the next dredging event. Based on these results, it is anticipated that phosphorus, ammonia-nitrogen (as N), chloride, and total suspended solids will be monitored in accordance with the permit for the next dredging event.

4. Conclusion

Sampling was conducted to obtain and characterize material that is representative of the dredge area, in advance of the next dredging operation. The results of this sampling event show no level of contamination that would cause environmental impacts related to water quality. The historical and current data show that the sediment and elutriate results have been consistent over time. Water quality impacts have not been noted in the past. Based on the similarity of current results with historical data, water quality impacts are not anticipated. Therefore, sediments in the Approach Channel and Advance Maintenance Area should be acceptable for disposal off shore of IBSP, or at the open water disposal site south of Waukegan Harbor.

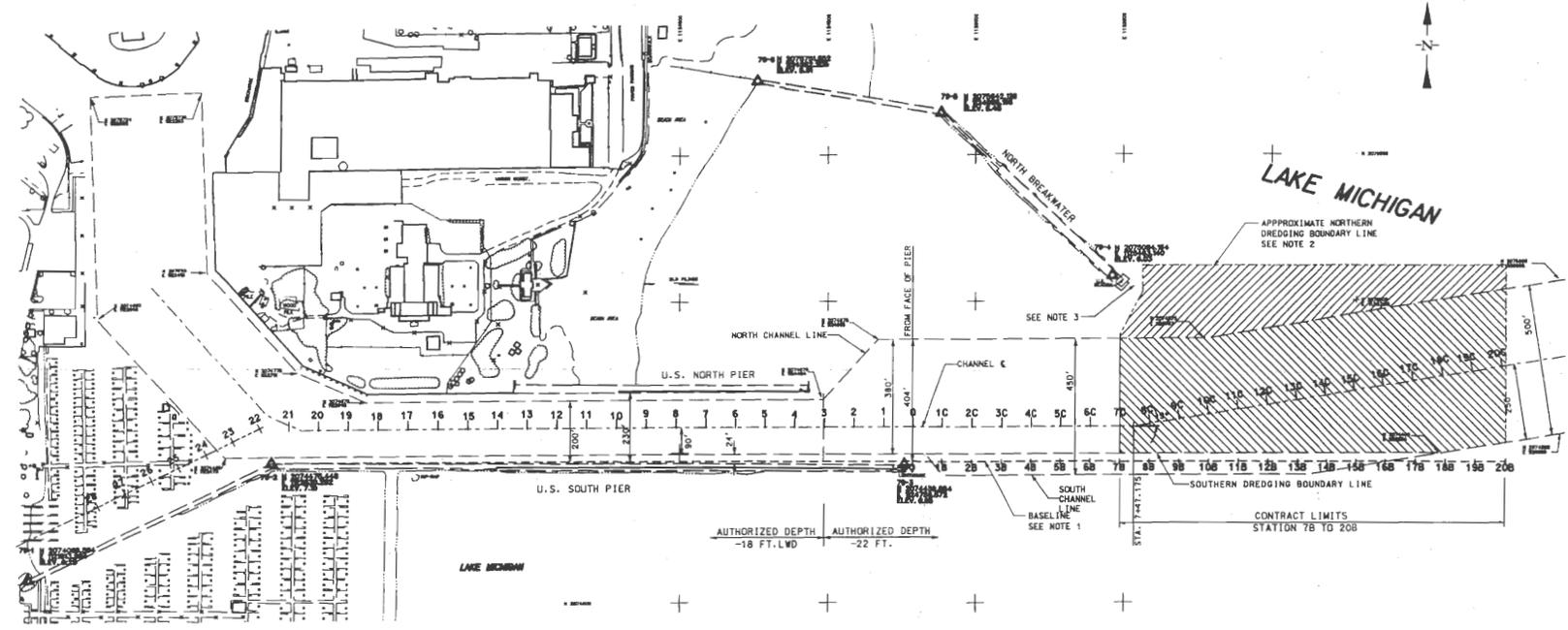
5. References

USACE. Waukegan Harbor Approach Channel Dredging: Tier 1 Sediment Evaluation. Chicago, Illinois. October 1995.

35 Illinois Administrative Code. Environmental Regulations for the State of Illinois.

Figures and Tables

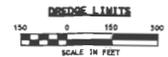
FIGURE 1: WAUKEGAN HARBOR ADVANCE MAINTENANCE AND MAINTENANCE AREAS WAUKEGAN, ILLINOIS



DATUM AND BENCHMARKS
 ALL ELEVATIONS ARE IN FEET AND ARE REFERENCED TO LOW WATER DATUM (LWD), LAKE MICHIGAN. 0.0 FEET LWD HAS AN ELEVATION OF 577.84 FEET (INCLUDES +0.34' CORRECTION FACTOR) ABOVE THE REFERENCE PLANE AT RIMOUSKI, QUEBEC, INTERNATIONAL GREAT LAKES DATUM (IGLD) 1985. ALL COORDINATES ARE REFERENCED TO ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, 1983 NORTH AMERICAN DATUM (FT).

- NOTES:**
1. THE BASELINE IS OFFSET 2.3+ FT. NORTH OF THE NORTH FACE OF THE SOUTH PIER. STATION 0+00 IS THE EAST FACE OF THE SOUTH PIER.
 2. THE NORTHERN MOST DREDGING BOUNDARY LINE IS SHOWN FOR REFERENCE ONLY. THIS LINE WILL BE ADJUSTED BY THE COR BASED ON THE PRIOR SURVEYS.
 3. NO DREDGING IS TO BE PERFORMED WITHIN 50 FEET OF THE NORTH BREAKWATER.

SURVEY CONTROL			
POINT	NORTHING	EASTING	ELEV.
79-1	2074089.564	1121813.884	6.25
79-2	2074475.448	1122630.282	7.10
79-3	2074459.884	1124758.572	6.95
79-4	2075084.164	1125463.140	6.03
79-5	2075642.128	1124885.196	6.48
79-6	2075751.652	1124262.205	5.61



- LEGEND/SYMBOLS**
- CHANNEL LINE
 - CHANNEL C
 - DREDGING BOUNDARY LINE
 - BASELINE
 - ADVANCE MAINTENANCE AREA
 - MAINTENANCE AREA

DESIGNED BY: J. J. ...
 DRAWN BY: ...
 CHECKED BY: ...
 DATE: SEPTEMBER 2004
 PROJECT: WAUKEGAN HARBOR
 SHEET: 1 OF 3

U.S. ARMY ENGINEER DISTRICT
 CORPS OF ENGINEERS
 CHICAGO, ILLINOIS

WAUKEGAN HARBOR
 ADVANCE MAINTENANCE AND MAINTENANCE AREAS
 WAUKEGAN, ILLINOIS
 DREDGE LIMITS
 SHEET REFERENCE NUMBER:
 SHEET 1 OF 3

Figure 2: Disposal Location 1



This sediment disposal site (Disposal Location 1) is located 1 mile south of Waukegan Harbor. It was originally located approximately 1000 feet offshore, and was used for dredging operations between 1995 and 1998. In 2003 the area was shifted 1000 feet lakeward, and has been used for every dredging event since then.

Figure 3: Disposal Locations 2 & 3



Disposal Locations 2 and 3 have been used in the past for beach nourishment at Illinois Beach State Park (IBSP). Disposal Location 2 was used between 1999 and 2001, and in 2005, 2008, 2009 and 2012. Disposal Location 3 was used in 2002. These sites are potential future disposal locations.

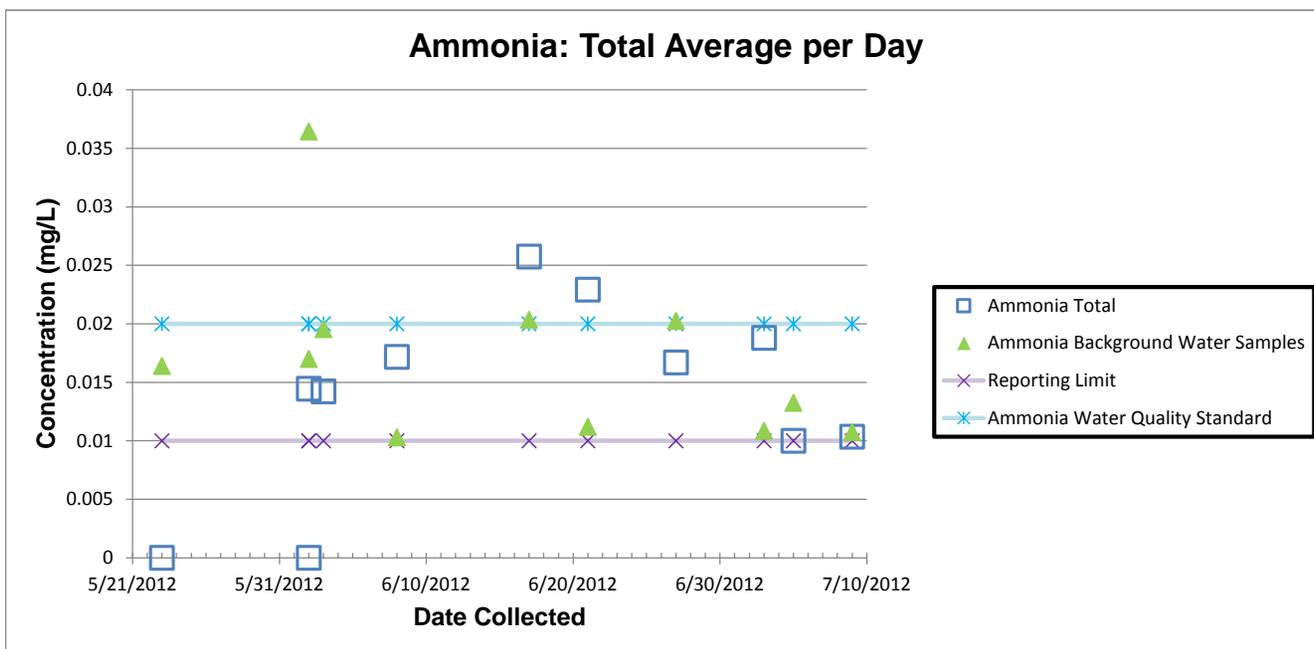


Figure 4: Ammonia Concentrations - Daily Average (3)

Table 4: Concentrations of Ammonia - Total Daily Average (mg/L)

Date Collected	Ammonia Total	Ammonia Background Water Samples	Reporting Limit	Ammonia Water Quality Standard(2)
5/23/2012	NA(1)	0.016	0.01	0.02
6/2/2012	NA	0.036	0.01	0.02
6/2/2012	0.014	0.017	0.01	0.02
6/3/2012	0.014	0.020	0.01	0.02
6/8/2012	0.017	0.010	0.01	0.02
6/17/2012	0.026	0.020	0.01	0.02
6/21/2012	0.023	0.011	0.01	0.02
6/27/2012	0.017	0.020	0.01	0.02
7/3/2012	0.019	0.011	0.01	0.02
7/5/2012	ND	0.013	0.01	0.02
7/9/2012	0.011	0.011	0.01	0.02

(1) NA - Not Applicable. Sample not collected

(2) Water Quality Standard from Environmental Regulations for the State of Illinois, Title 35 of the Illinois Administrative Code

(3) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

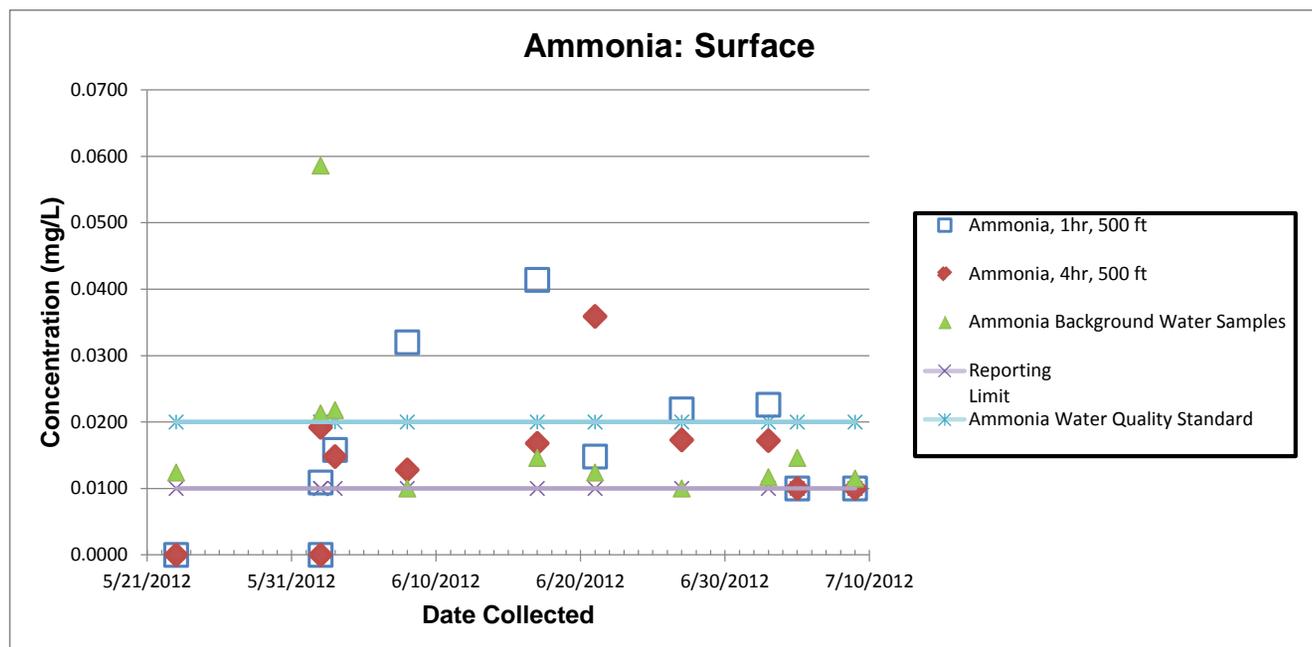


Figure 5: Ammonia Concentrations - Surface Collections (3)

Table 5: Concentrations of Ammonia - Surface Collections (mg/L)

Date Collected	Ammonia, 1hr, 500 ft	Ammonia, 4hr, 500 ft	Ammonia Background Water Samples	Reporting Limit	Ammonia Water Quality Standard(2)
5/23/2012	NA(1)	NA	0.012	0.01	0.02
6/2/2012	NA	NA	0.059	0.01	0.02
6/2/2012	0.0109	0.019	0.021	0.01	0.02
6/3/2012	0.0158	0.015	0.022	0.01	0.02
6/8/2012	0.032	0.013	ND	0.01	0.02
6/17/2012	0.041	0.017	0.015	0.01	0.02
6/21/2012	0.015	0.036	0.012	0.01	0.02
6/27/2012	0.022	0.017	ND	0.01	0.02
7/3/2012	0.023	0.017	0.012	0.01	0.02
7/5/2012	ND	ND	0.015	0.01	0.02
7/9/2012	ND	ND	0.012	0.01	0.02

(1) NA - Not Applicable. Sample not collected

(2) Water Quality Standard from Environmental Regulations for the State of Illinois, Title 35 of the Illinois Administrative Code

(3) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

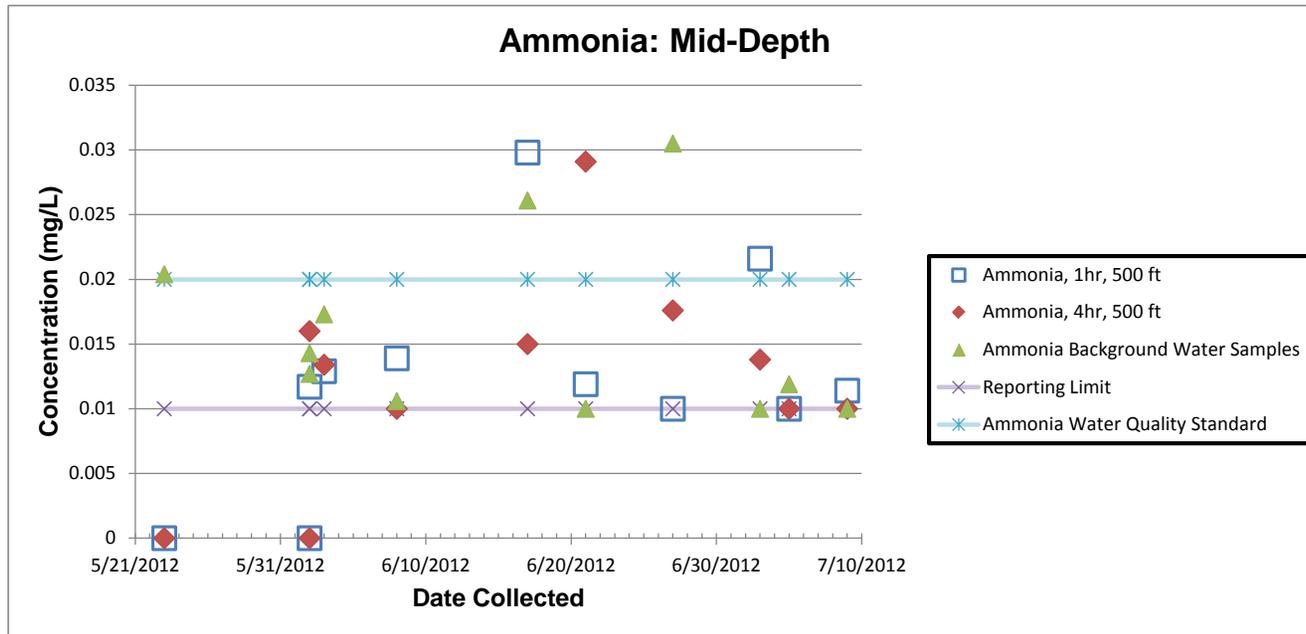


Figure 6: Ammonia Concentrations - Mid-Depth Collections (3)

Table 6: Concentrations of Ammonia - Mid-Depth Collections (mg/L)

Date Collected	Ammonia, 1hr, 500 ft	Ammonia, 4hr, 500 ft	Ammonia Background Water Samples	Reporting Limit	Ammonia Water Quality Standard
5/23/2012	NA(1)	NA	0.020	0.01	0.02
6/2/2012	NA	NA	0.014	0.01	0.02
6/2/2012	0.0117	0.016	0.013	0.01	0.02
6/3/2012	0.0129	0.013	0.017	0.01	0.02
6/8/2012	0.014	ND	0.011	0.01	0.02
6/17/2012	0.030	0.015	0.026	0.01	0.02
6/21/2012	0.012	0.029	ND	0.01	0.02
6/27/2012	ND	0.018	0.031	0.01	0.02
7/3/2012	0.022	0.014	ND	0.01	0.02
7/5/2012	ND	ND	0.012	0.01	0.02
7/9/2012	0.011	ND	ND	0.01	0.02

(1) NA - Not Applicable. Sample not collected

(2) Water Quality Standard from Environmental Regulations for the State of Illinois, Title 35 of the Illinois Administrative Code

(3) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

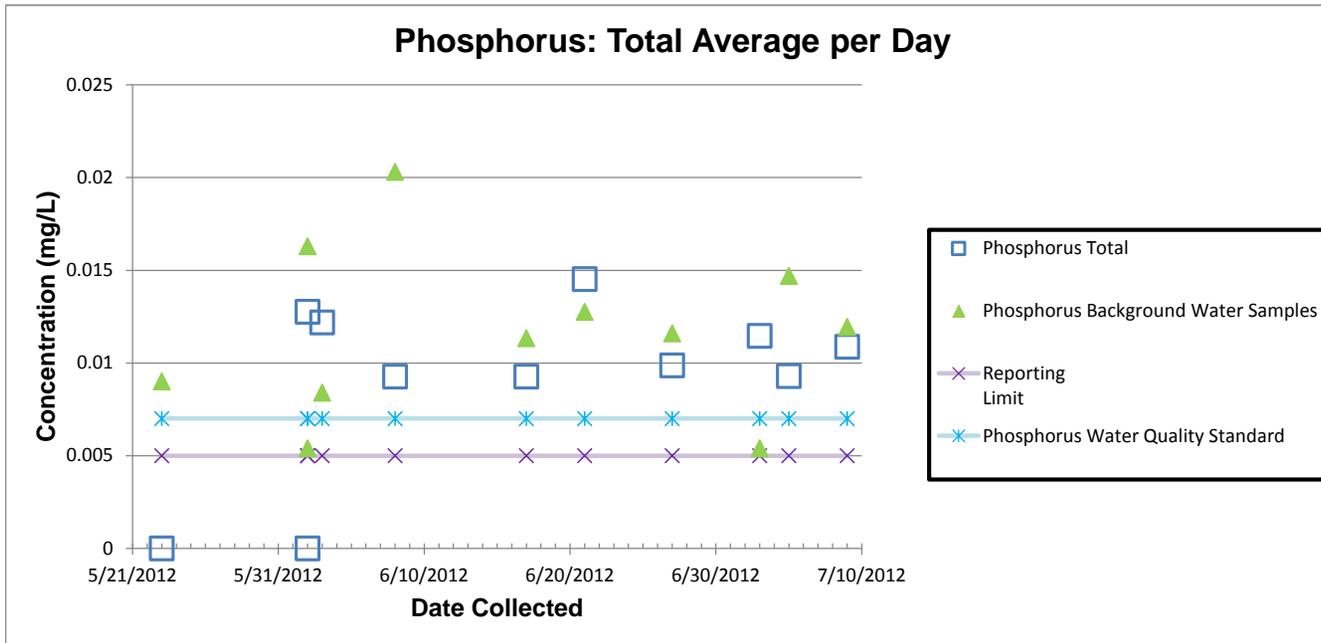


Figure 7: Phosphorus Concentrations - Daily Average (3)

Table 7: Concentrations of Phosphorus - Total Daily Average (mg/L)

Date Collected	Phosphorus Total	Phosphorus Background Water Samples	Reporting Limit	Phosphorus Water Quality Standard(2)
5/23/2012	NA(1)	0.00901	0.00500	0.007
6/2/2012	NA	0.00580	0.00500	0.007
6/2/2012	0.01276	0.01630	0.00500	0.007
6/3/2012	0.01219	0.00840	0.00500	0.007
6/8/2012	0.00927	0.02031	0.00500	0.007
6/17/2012	0.00927	0.01134	0.00500	0.007
6/21/2012	0.01453	0.01276	0.00500	0.007
6/27/2012	0.00987	0.01160	0.00500	0.007
7/3/2012	0.01146	0.00580	0.00500	0.007
7/5/2012	0.00930	0.02440	0.00500	0.007
7/9/2012	0.01088	0.01195	0.00500	0.007

(1) NA - Not Applicable. Sample not collected

(2) Water Quality Standard from Environmental Regulations for the State of Illinois, Title 35 of the Illinois Administrative Code

(3) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

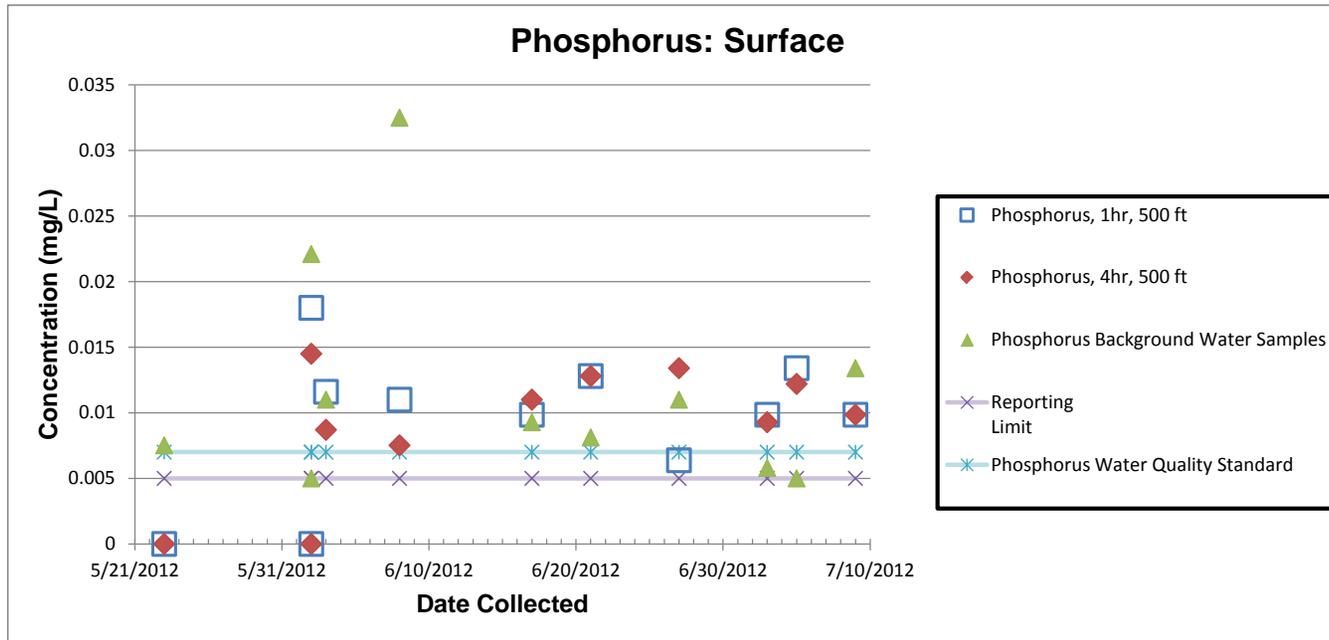


Figure 8: Phosphorus Concentrations - Surface Collections (3)

Table 8: Concentrations of Phosphorus - Surface Collections (mg/L)

Date Collected	Phosphorus , 1hr, 500 ft	Phosphorus , 4hr, 500 ft	Phosphorus Background Water Samples	Reportin g Limit	Phosphorus Water Quality Standard(2)
5/23/2012	NA(1)	NA	0.00752	0.00500	0.007
6/2/2012	NA	NA	ND	0.00500	0.007
6/2/2012	0.01800	0.01450	0.02210	0.00500	0.007
6/3/2012	0.01160	0.00870	0.01100	0.00500	0.007
6/8/2012	0.01100	0.00752	0.03250	0.00500	0.007
6/17/2012	0.00985	0.01100	0.00928	0.00500	0.007
6/21/2012	0.01280	0.01280	0.00812	0.00500	0.007
6/27/2012	0.00638	0.01340	0.01100	0.00500	0.007
7/3/2012	0.00985	0.00928	0.00580	0.00500	0.007
7/5/2012	0.01340	0.01220	ND	0.00500	0.007
7/9/2012	0.00985	0.00985	0.01340	0.00500	0.007

(1) NA - Not Applicable. Sample not collected

(2) Water Quality Standard from Environmental Regulations for the State of Illinois, Title 35 of the Illinois Administrative Code

(3) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

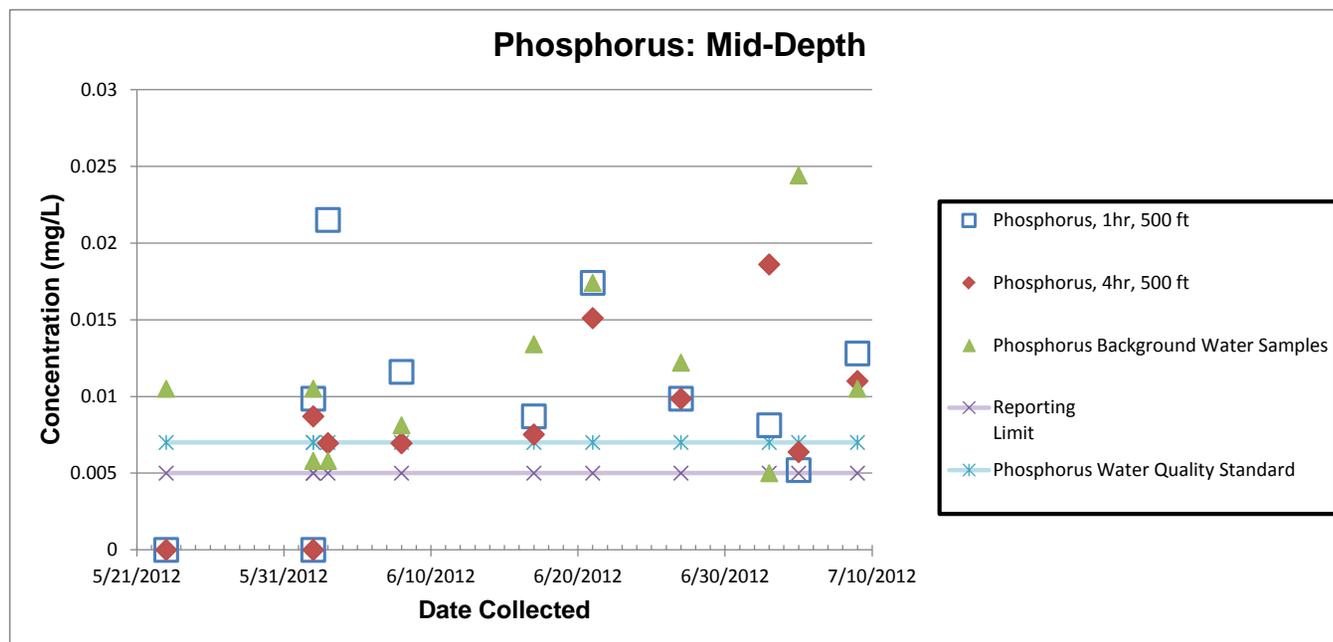


Figure 9: Phosphorus Concentrations - Mid-Depth Collections (3)

Table 9: Concentrations of Phosphorus - Mid-Depth Collections (mg/L)

Date Collected	Phosphorus , 1hr, 500 ft	Phosphorus , 4hr, 500 ft	Phosphorus Background Water Samples	Reportin g Limit	Phosphorus Water Quality Standard(2)
5/23/2012	NA(1)	NA	0.01050	0.00500	0.007
6/2/2012	NA	NA	0.00580	0.00500	0.007
6/2/2012	0.00985	0.00870	0.01050	0.00500	0.007
6/3/2012	0.02150	0.00695	0.00580	0.00500	0.007
6/8/2012	0.01160	0.00695	0.00812	0.00500	0.007
6/17/2012	0.00870	0.00752	0.01340	0.00500	0.007
6/21/2012	0.01740	0.01510	0.01740	0.00500	0.007
6/27/2012	0.00985	0.00985	0.01220	0.00500	0.007
7/3/2012	0.00812	0.01860	ND	0.00500	0.007
7/5/2012	0.00520	0.00638	0.02440	0.00500	0.007
7/9/2012	0.01280	0.01100	0.01050	0.00500	0.007

(1) NA - Not Applicable. Sample not collected

(2) Water Quality Standard from Environmental Regulations for the State of Illinois, Title 35 of the Illinois Administrative Code

(3) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

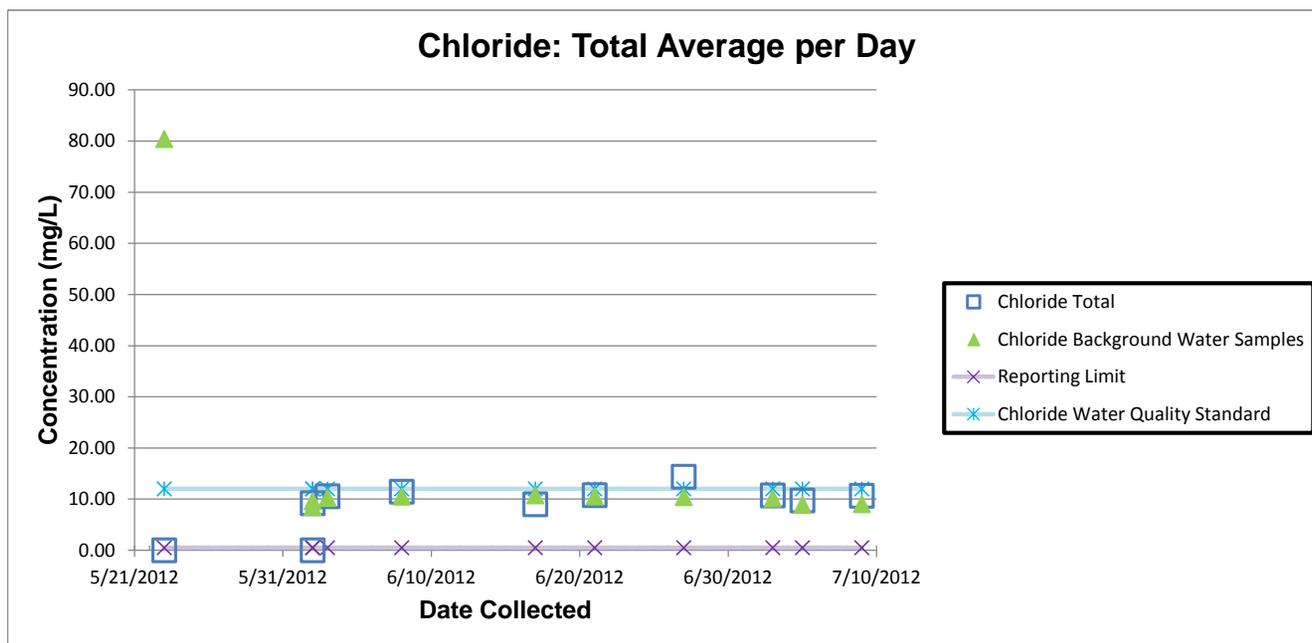


Figure 10: Chloride Concentrations - Daily Average (3)

Table 10: Concentrations of Chloride - Total Daily Average (mg/L)

Date Collected	Chloride Total	Chloride Background Water Samples	Reporting Limit	Chloride Water Quality Standard(2)
5/23/2012	NA(1)	80.41	0.5	12
6/2/2012	NA	8.51	0.5	12
6/2/2012	9.20	9.61	0.5	12
6/3/2012	10.56	10.23	0.5	12
6/8/2012	11.45	10.50	0.5	12
6/17/2012	9.00	10.75	0.5	12
6/21/2012	10.78	10.55	0.5	12
6/27/2012	14.38	10.40	0.5	12
7/3/2012	10.72	10.15	0.5	12
7/5/2012	9.74	8.93	0.5	12
7/9/2012	10.66	9.03	0.5	12

(1) NA - Not Applicable. Sample not collected

(2) Water Quality Standard from Environmental Regulations for the State of Illinois, Title 35 of the Illinois Administrative Code

(3) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

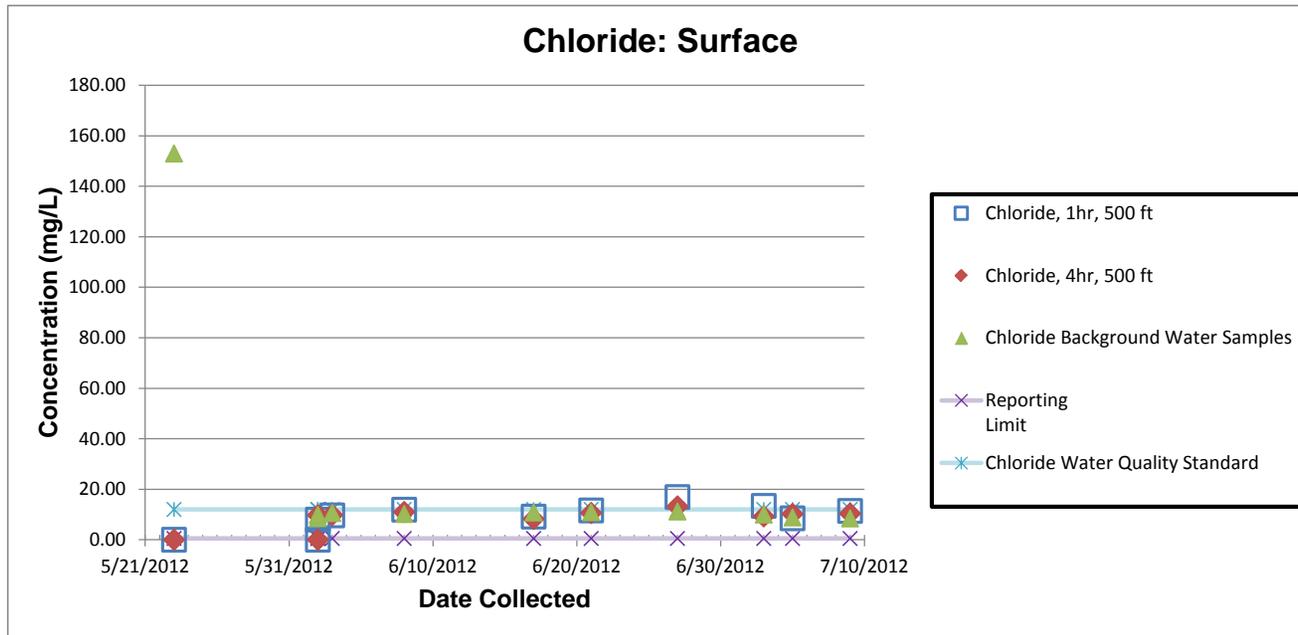


Figure 11: Chloride Concentrations - Surface Collections (3)

Table 11: Concentrations of Chloride - Surface Collections (mg/L)

Date Collected	Chloride, 1hr, 500 ft	Chloride, 4hr, 500 ft	Chloride Background Water Samples	Reporting Limit	Chloride Water Quality Standard(2)
5/23/2012	NA(1)	NA	153.00	0.5	12
6/2/2012	NA	NA	8.57	0.5	12
6/2/2012	7.97	9.71	9.86	0.5	12
6/3/2012	9.65	9.80	10.60	0.5	12
6/8/2012	11.90	11.00	10.20	0.5	12
6/17/2012	9.16	8.26	10.80	0.5	12
6/21/2012	11.60	10.60	10.90	0.5	12
6/27/2012	16.90	13.20	11.20	0.5	12
7/3/2012	13.40	9.26	10.00	0.5	12
7/5/2012	8.49	10.20	8.85	0.5	12
7/9/2012	11.40	10.40	8.46	0.5	12

(1) NA - Not Applicable. Sample not collected

(2) Water Quality Standard from Environmental Regulations for the State of Illinois, Title 35 of the Illinois Administrative Code

(3) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

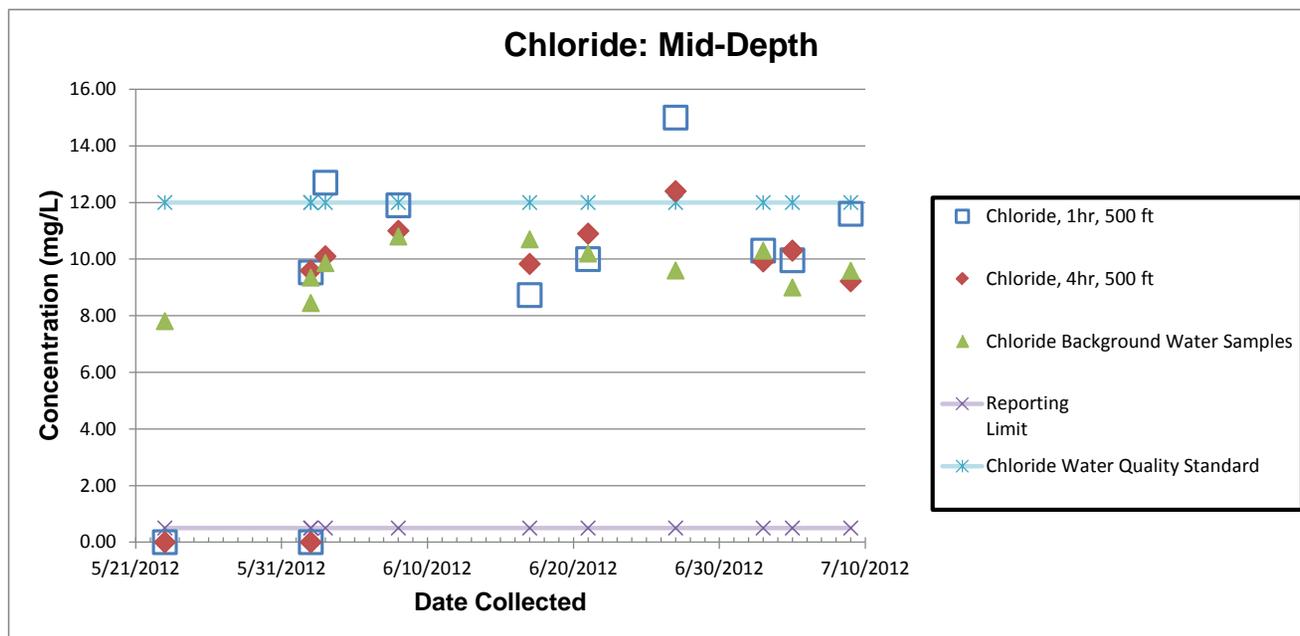


Figure 12: Chloride Concentrations - Mid-Depth Collections (3)

Table 12: Concentrations of Chloride - Mid-Depth Collections (mg/L)

Date Collected	Chloride, 1hr, 500 ft	Chloride, 4hr, 500 ft	Chloride Background Water Samples	Reporting Limit	Chloride Water Quality Standard(2)
5/23/2012	NA(1)	NA	7.81	0.5	12
6/2/2012	NA	NA	8.45	0.5	12
6/2/2012	9.53	9.59	9.35	0.5	12
6/3/2012	12.70	10.10	9.86	0.5	12
6/8/2012	11.90	11.00	10.80	0.5	12
6/17/2012	8.73	9.83	10.70	0.5	12
6/21/2012	10.00	10.90	10.20	0.5	12
6/27/2012	15.00	12.40	9.60	0.5	12
7/3/2012	10.30	9.92	10.30	0.5	12
7/5/2012	9.96	10.30	9.00	0.5	12
7/9/2012	11.60	9.22	9.59	0.5	12

(1) NA - Not Applicable. Sample not collected

(2) Water Quality Standard from Environmental Regulations for the State of Illinois, Title 35 of the Illinois Administrative Code

(3) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

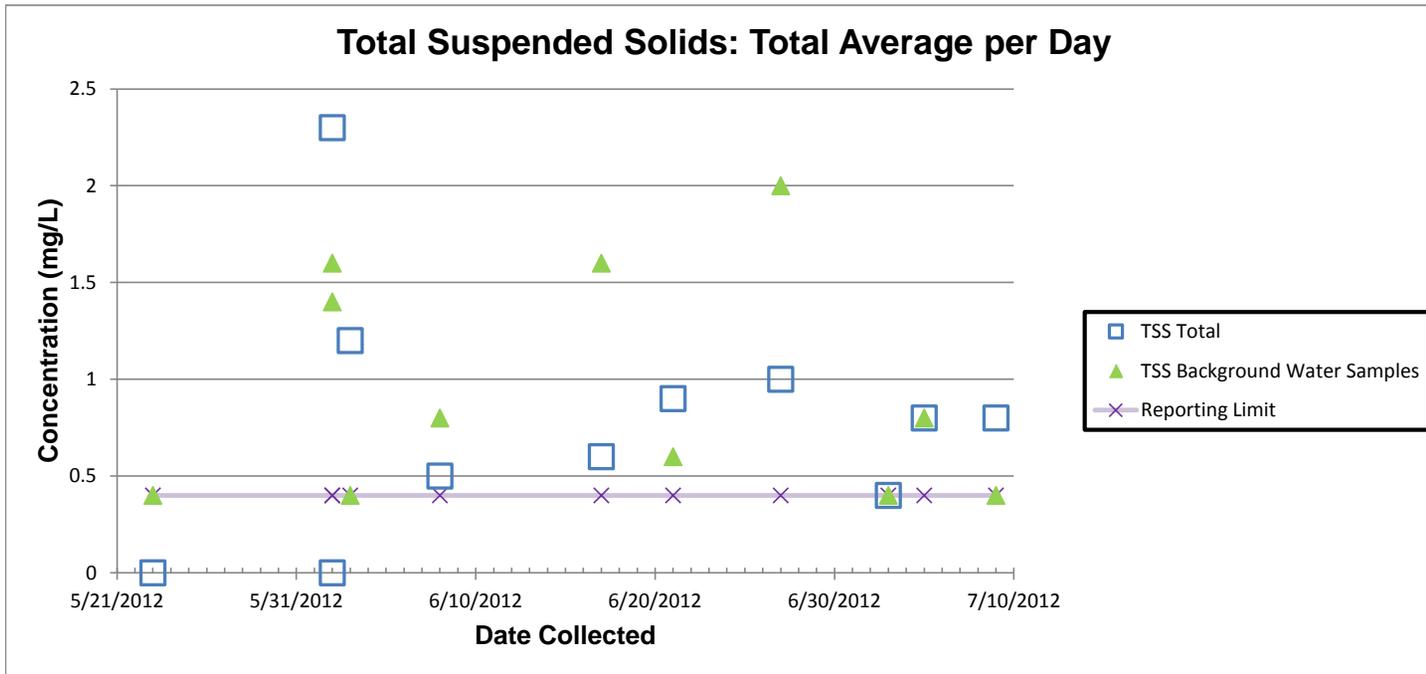


Figure 13: Total Suspended Solids Concentrations - Daily Average (2)

Table 13: Concentrations of Total Suspended Solids - Total Daily Average (mg/L)

Date Collected	TSS Total	TSS Background Water Samples	Reporting Limit
5/23/2012	NA(1)	0.40	0.40
6/2/2012	NA	1.40	0.40
6/2/2012	2.30	1.60	0.40
6/3/2012	1.20	0.40	0.40
6/8/2012	0.60	0.80	0.40
6/17/2012	0.60	1.60	0.40
6/21/2012	0.90	0.80	0.40
6/27/2012	1.00	2.00	0.40
7/3/2012	0.40	ND	0.40
7/5/2012	0.80	0.80	0.40
7/9/2012	1.20	ND	0.40

(1) NA - Not Applicable. Sample not collected

(2) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

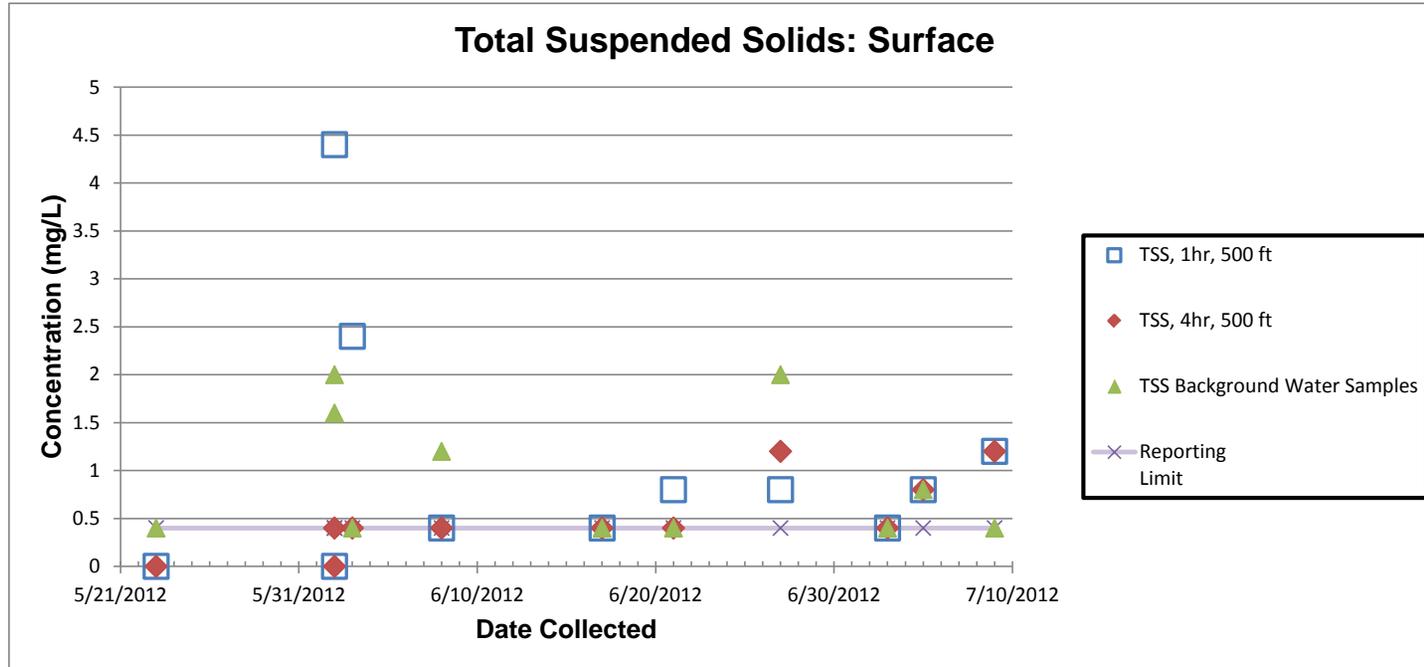


Figure 14: Total Suspended Solids Concentrations - Surface Collections (2)

Table 14: Concentrations of Total Suspended Solids - Surface Collections (mg/L)

Date Collected	TSS, 1hr, 500 ft	TSS, 4hr, 500 ft	TSS Background Water Samples	Reporting Limit
5/23/2012	NA(1)	NA	0.40	0.40
6/2/2012	NA	NA	2.00	0.40
6/2/2012	4.40	0.40	1.60	0.40
6/3/2012	2.40	0.40	0.40	0.40
6/8/2012	0.40	ND	1.20	0.40
6/17/2012	0.40	0.40	0.40	0.40
6/21/2012	0.80	0.40	ND	0.40
6/27/2012	0.80	1.20	2.00	0.40
7/3/2012	0.40	ND	ND	0.40
7/5/2012	0.80	0.80	0.80	0.40
7/9/2012	1.20	1.20	ND	0.40

(1) NA - Not Applicable. Sample not collected

(2) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

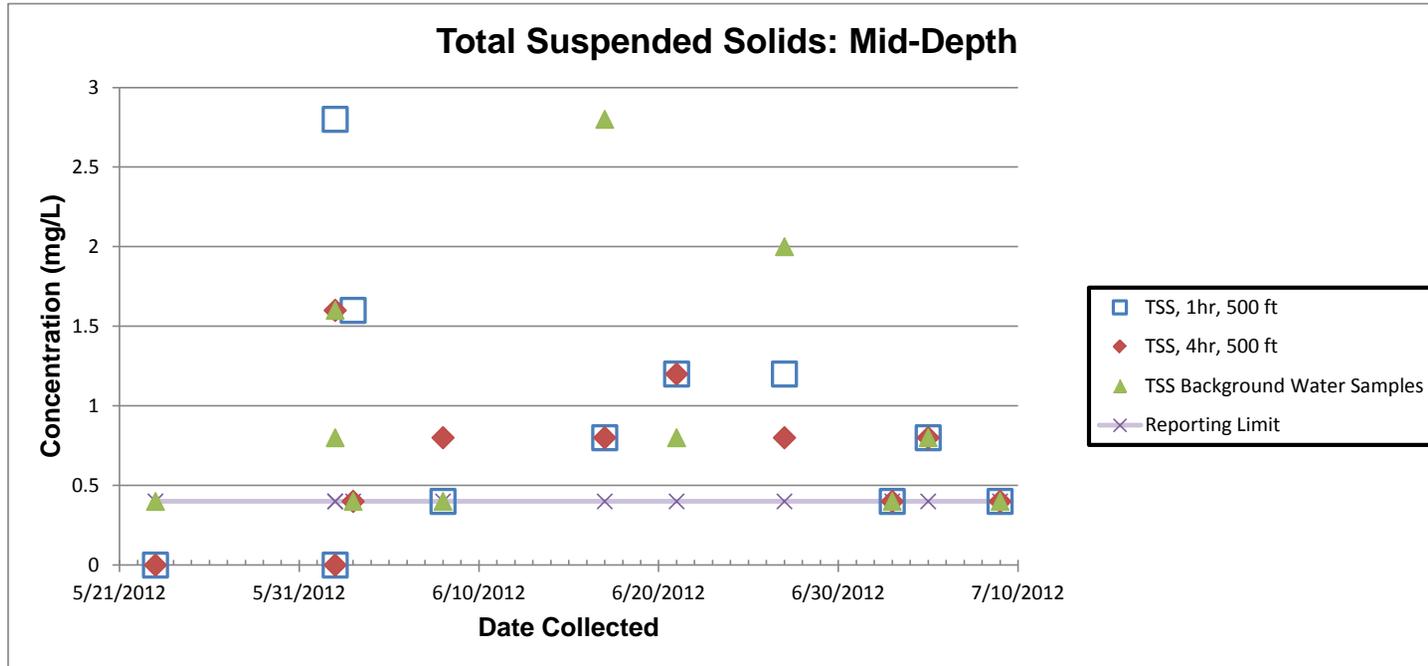


Figure 15: Total Suspended Solids Concentrations - Mid-Depth Collections (2)

Table 15: Concentrations of Total Suspended Solids - Mid-Depth Collections (mg/L)

Date Collected	TSS, 1hr, 500 ft	TSS, 4hr, 500 ft	TSS Background Water Samples	Reporting Limit
5/23/2012	NA(1)	NA	ND	0.40
6/2/2012	NA	NA	0.80	0.40
6/2/2012	2.80	1.60	1.60	0.40
6/3/2012	1.60	ND	0.40	0.40
6/8/2012	0.40	0.80	0.40	0.40
6/17/2012	0.80	0.80	2.80	0.40
6/21/2012	1.20	1.20	0.80	0.40
6/27/2012	1.20	0.80	2.00	0.40
7/3/2012	ND	0.40	ND	0.40
7/5/2012	0.80	0.80	0.80	0.40
7/9/2012	ND	ND	ND	0.40

(1) NA - Not Applicable. Sample not collected

(2) Concentrations that are ND - Not Detected are shown as the Reporting Limit on the figure

Figure 17: Dredging Sediment – Sample #1



Figure 18: Dredging Sediment – Sample #2



Figure 19: Dredging Sediment – Sample #3

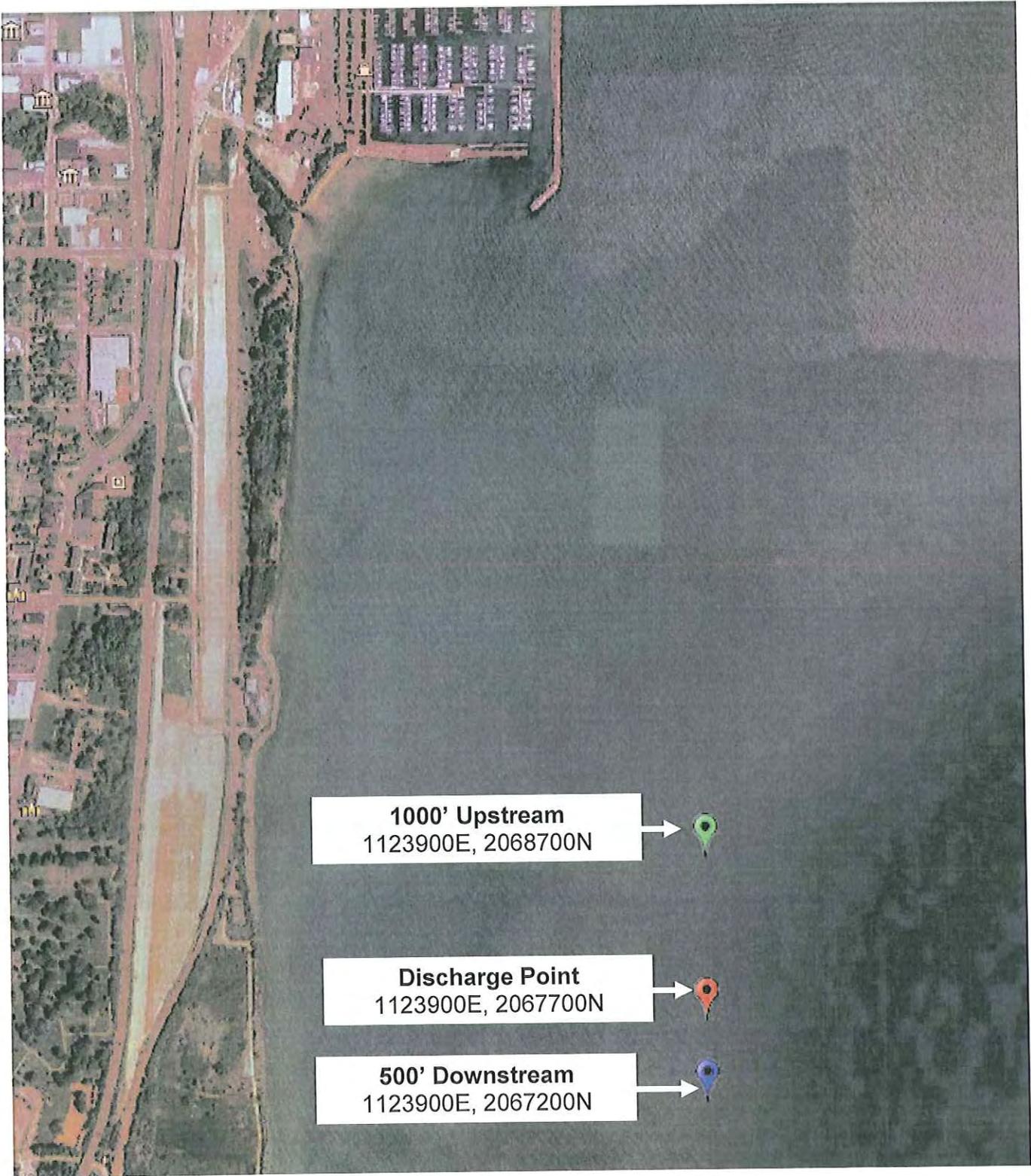


Water Quality Monitoring Maps

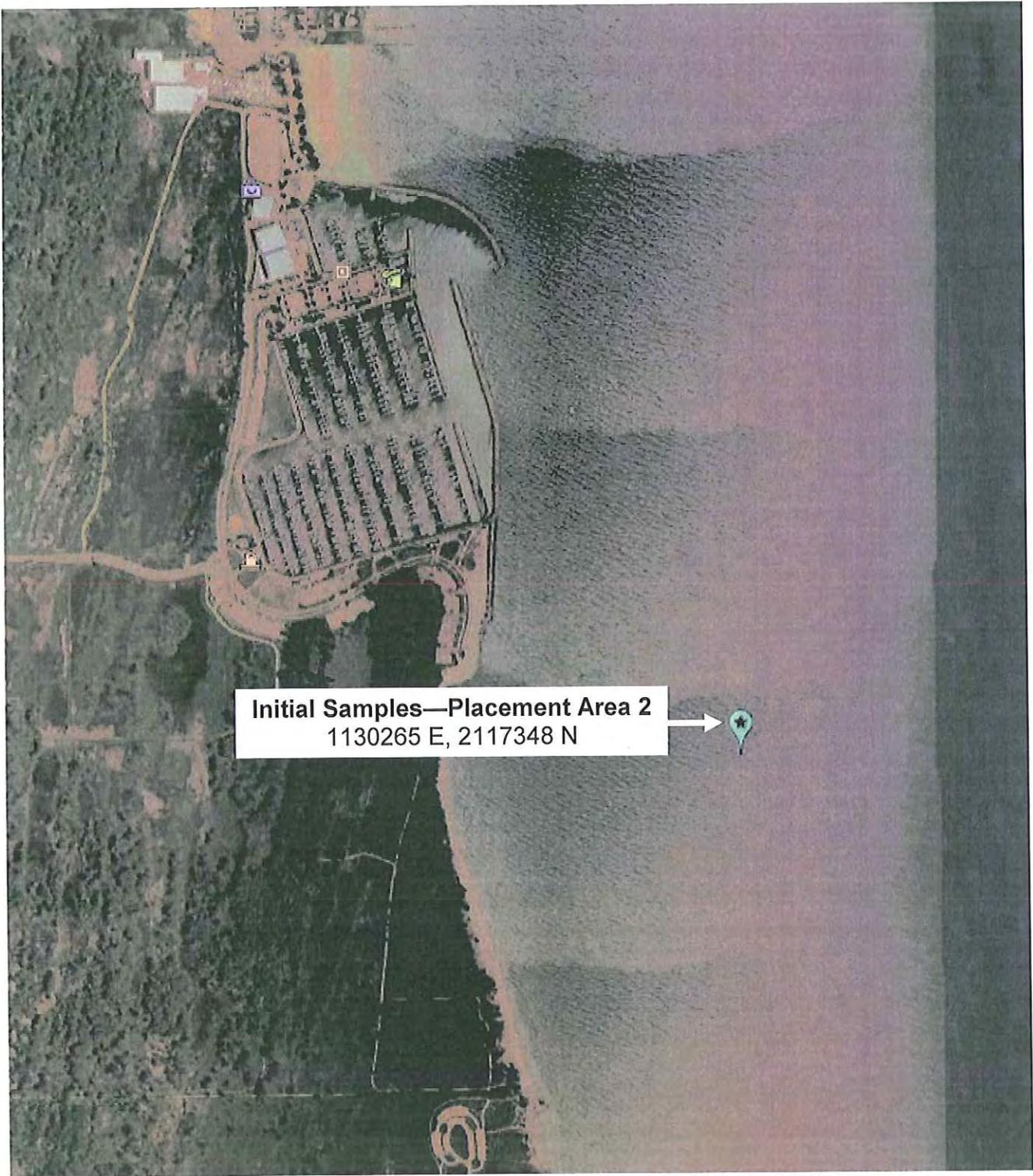
Initial Samples—Placement Area 1
05/23/12



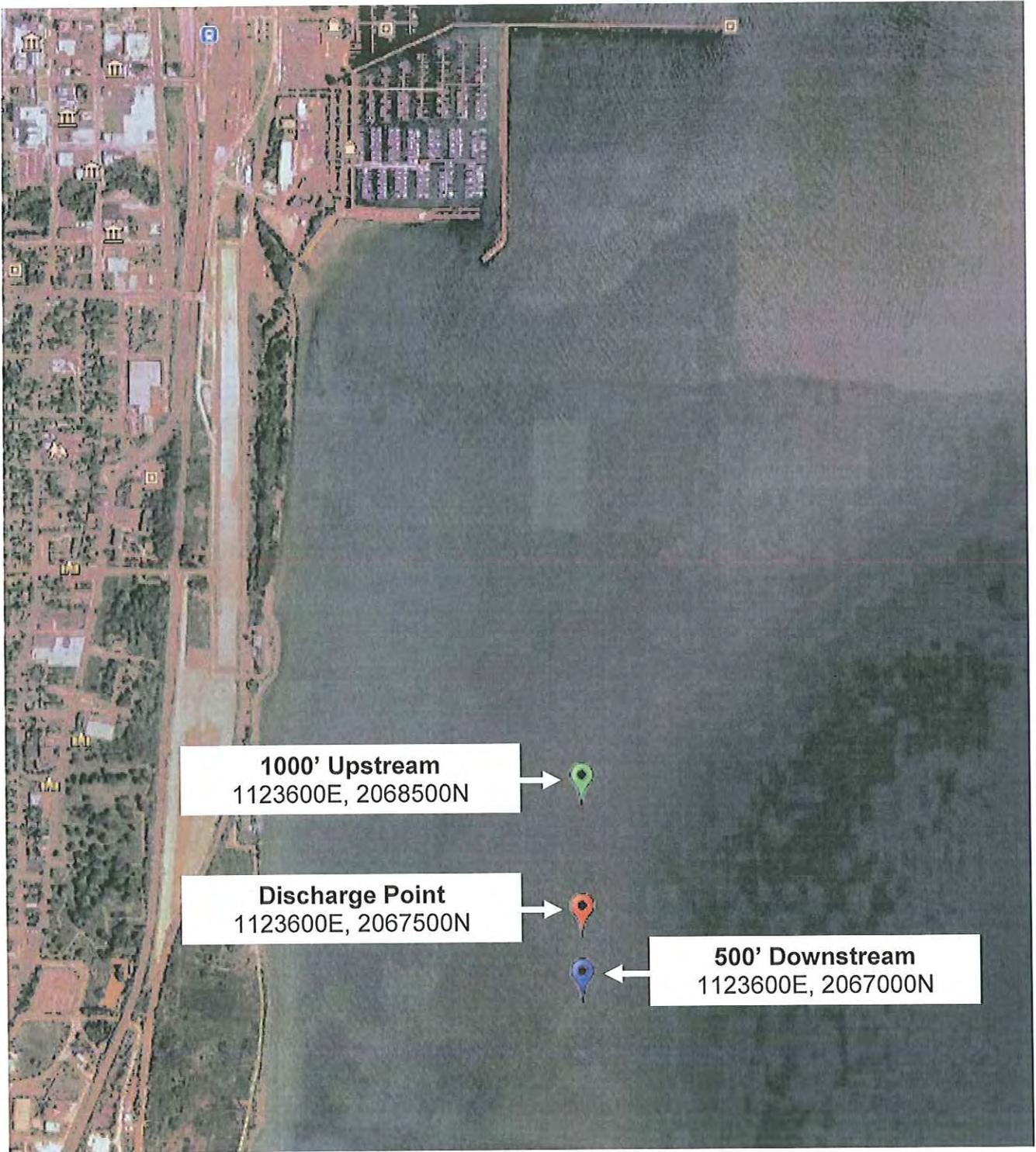
Week 1, Event 1
06/02/2012



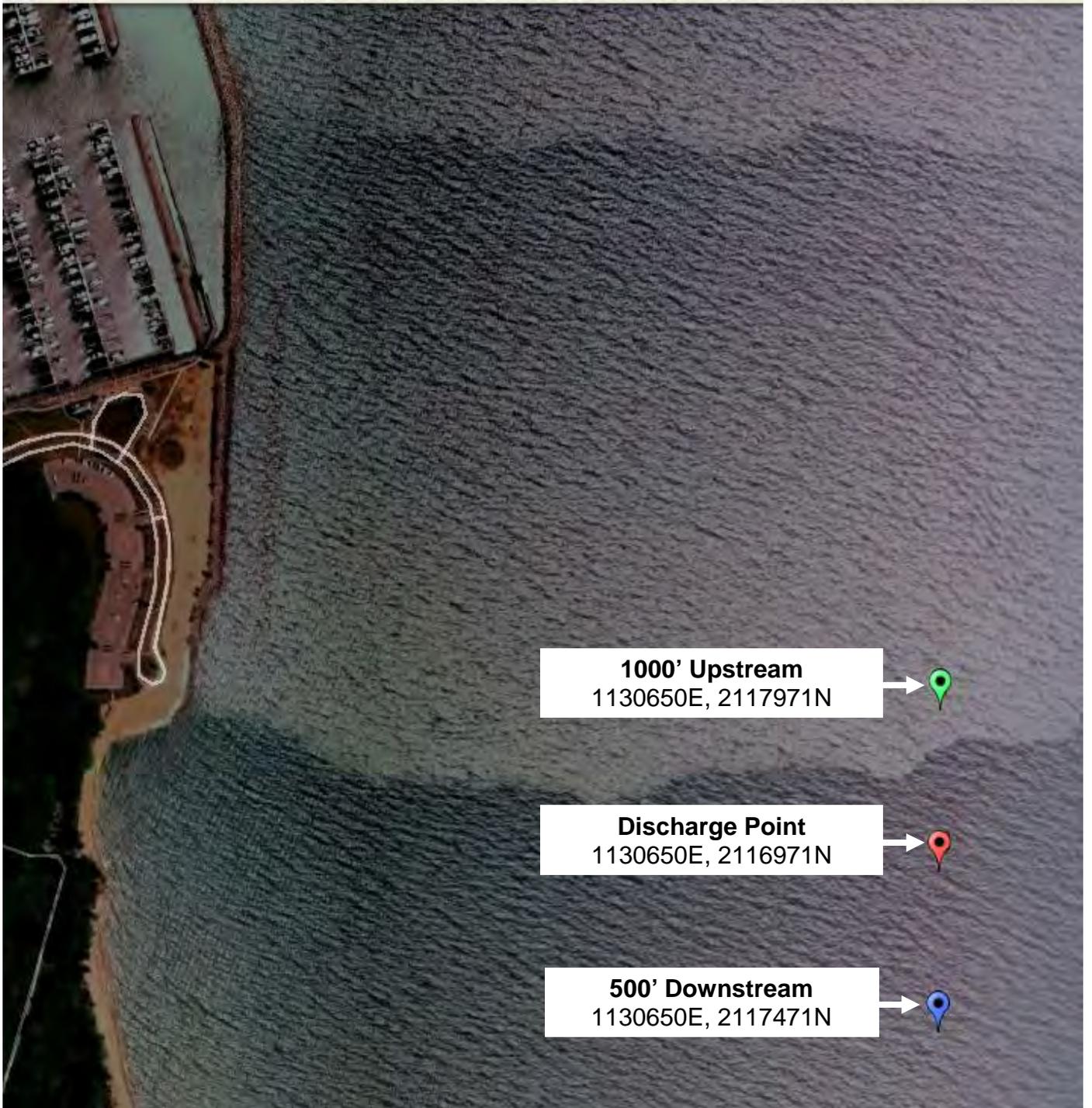
Initial Samples—Placement Area 2
06/02/12



Week 1, Event 2
06/03/2012



Week 2, Event 1
06/08/2012



1000' Upstream
1130650E, 2117971N



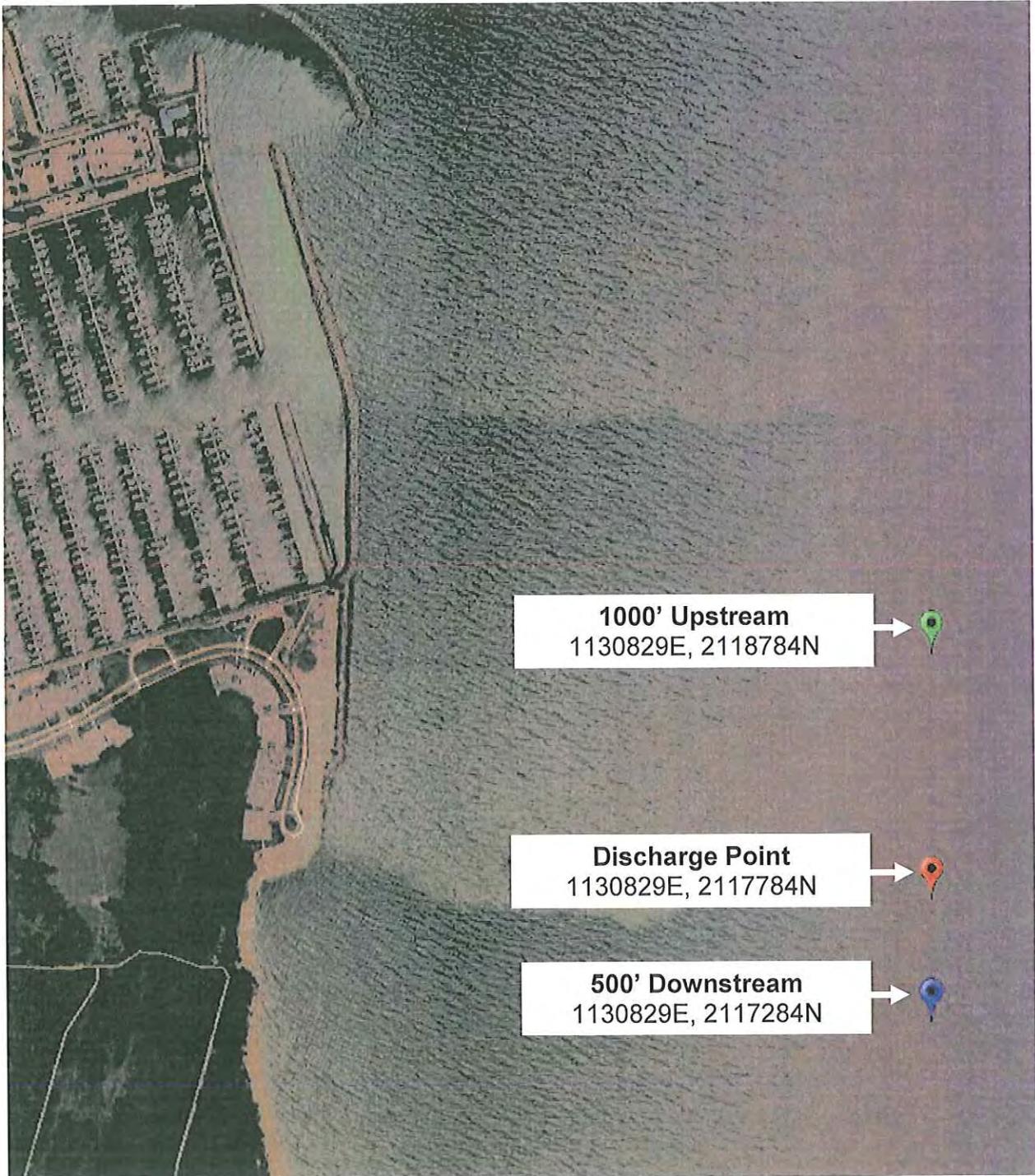
Discharge Point
1130650E, 2116971N



500' Downstream
1130650E, 2117471N



Week 3, Event 1
06/17/2012



1000' Upstream
1130829E, 2118784N



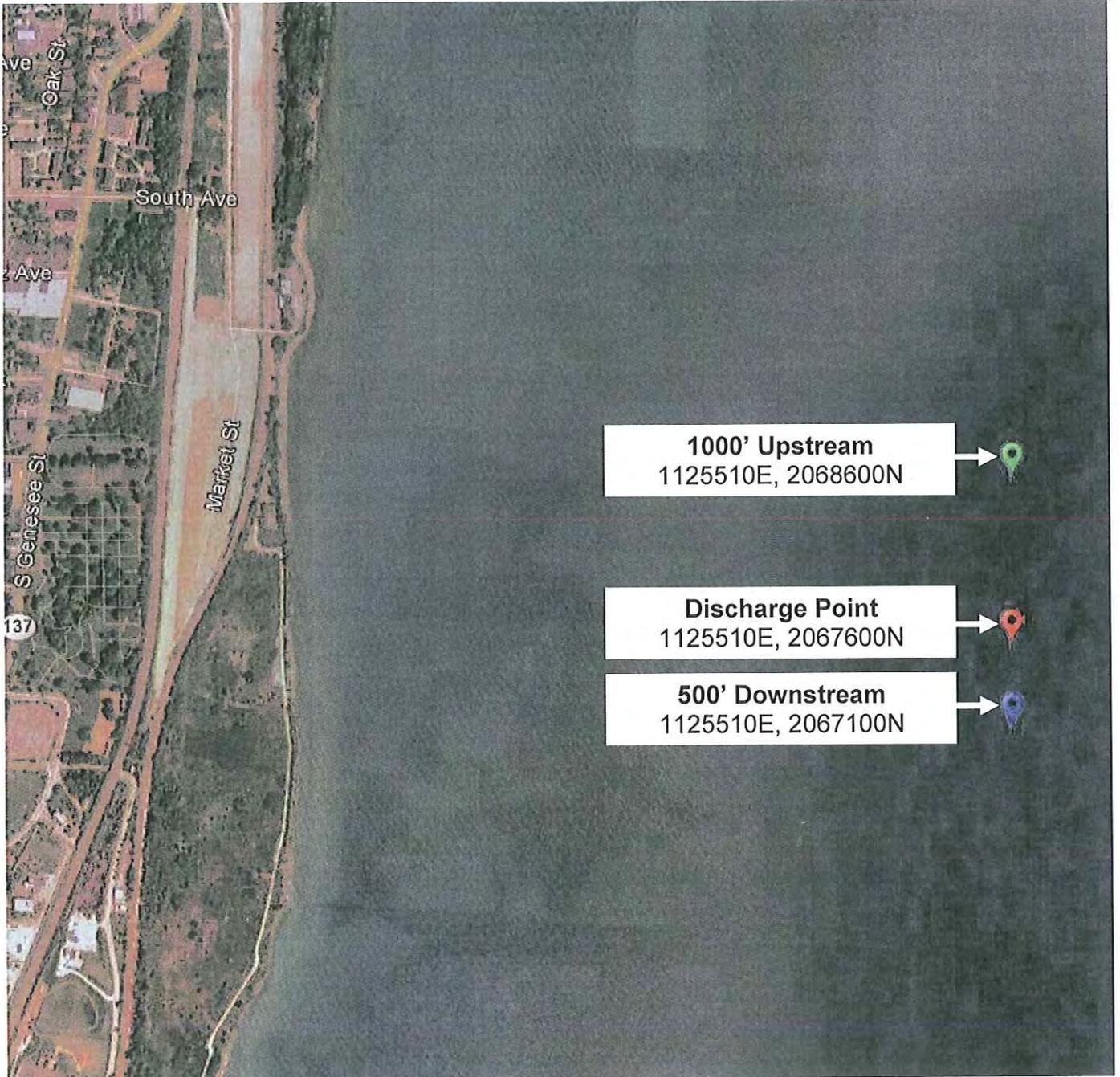
Discharge Point
1130829E, 2117784N



500' Downstream
1130829E, 2117284N



Week 4, Event 1
06/21/2012

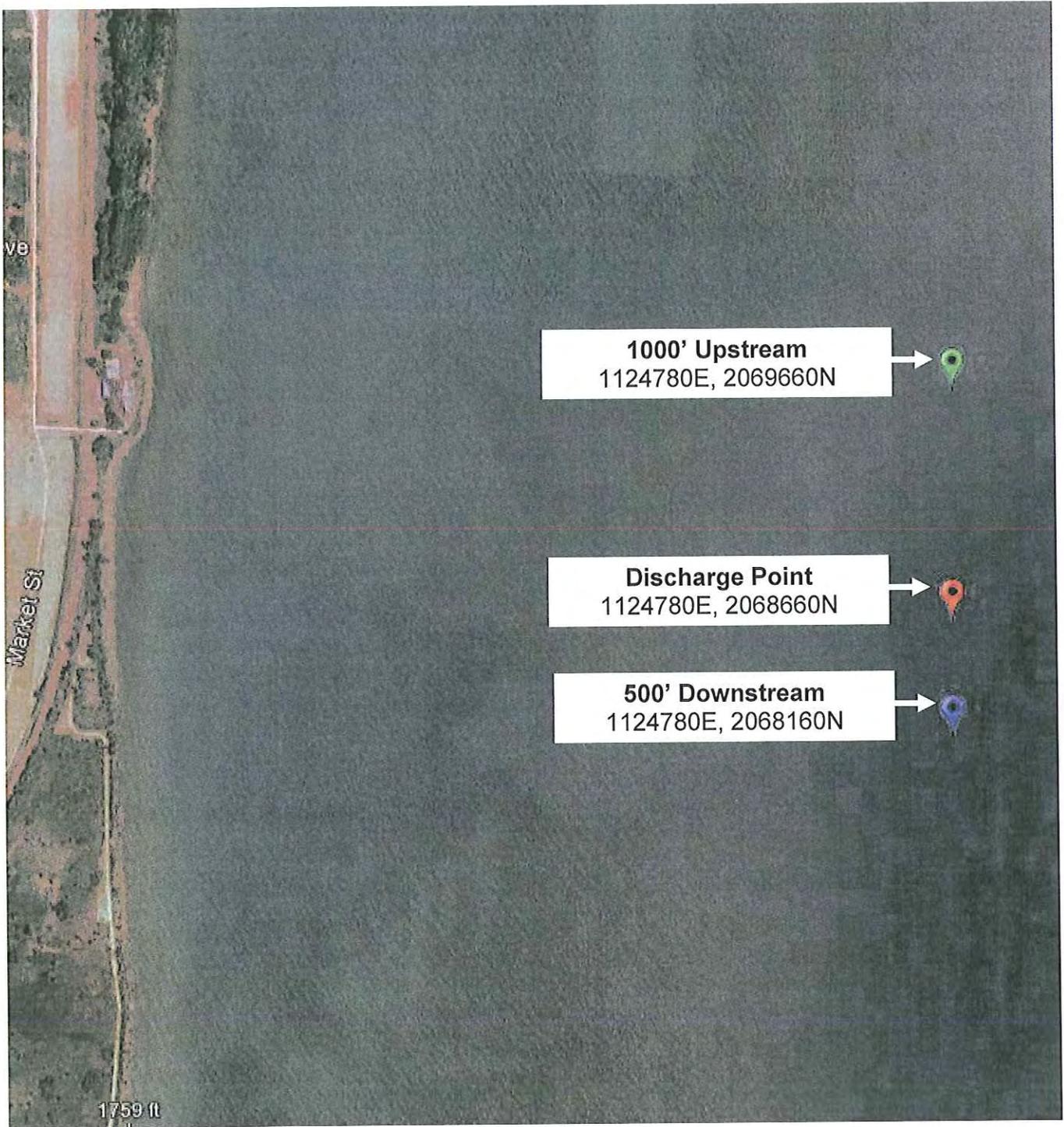


Week 5, Event 1

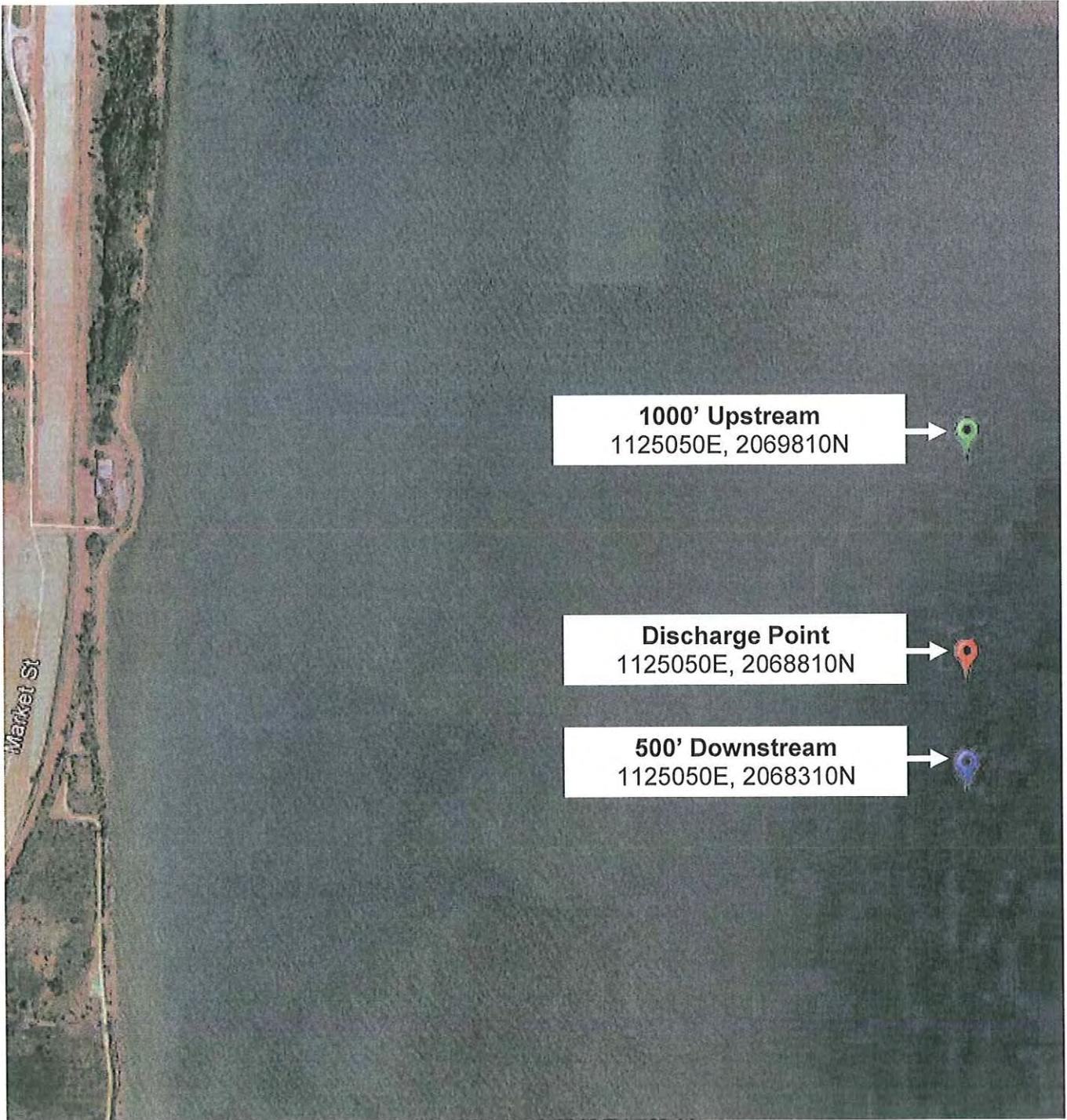
06/27/2012



FY12
Week 1, Event 1
07/03/2012



FY12
Week 1, Event 2
07/05/2012



**FY12
Week 2, Event 1
07/09/12**



**Appendix A
and
Appendix B**

(on enclosed CD)

Appendix A

Permits



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

PAT QUINN, GOVERNOR

JOHN J. KIM, INTERIM DIRECTOR

217/782-3362

June 29, 2012

Mike Nguyen
Technical Services Division
Hydraulics and Environmental Engineering Section
Chicago District, U.S. Army Corps of Engineers
111 North Canal Street
Chicago, IL 60606-7206

Re: Chicago District, U.S. Army Corps of Engineers,– Waukegan Harbor Approach Channel and
Advanced Maintenance Area
Permit # 2005-LM-2830-4
Log # C-0102-12 and 0552-2012

Gentlemen:

This Agency has reviewed the request dated May 9, 2012 for approval of a one time temporary increase in the annual limit of sediment material that may be dredged from the Waukegan Harbor advanced area and approach channel. We also received your report dated Jan 13, 2011 regarding sediment analysis for the dredge event. The original approval for annual dredging of up to 75,000 cubic yards was issued on February 1, 2005 under Section 401 of the Clean Water Act and Section 39 of the Illinois Environmental Protection Act. Supplemental permits for this project were issued by the Illinois Environmental Protection Agency on June 28, 2005, April 1, 2008 and March 6, 2009. We offer the following comments in response to your request to modify the certification/permit.

The proposed dredging including the one time temporary increase of 40,000 cubic yards, up to the total annual amount of 115,000 cubic yards, is hereby approved for the 2012 dredging season. The approved dredging shall be conducted in accordance with conditions 1 through 16 of permit 2005-LM-2830-3 issued March 6, 2009.

Sincerely,

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:DLH:DRG:C-0102-12_401 WQC with LM determination_06Jun12.docx

cc: IEPA, Records Unit
IEPA, DWPC, FOS, DesPlaines
IDNR, OWR, Chicago
USEPA, Region 5
Binds
DRG



Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
<http://dnr.state.il.us>

Pat Quinn, Governor
Marc Miller, Director

May 29, 2012

Ms. Margaret Rauwerdink
U.S. Army Corps of Engineers
Chicago District
111 N. Canal Street, 6th Floor
Chicago, IL 60606-7206

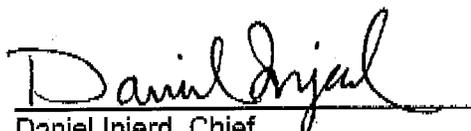
RE: Request to increase the permitted (IDNR/OWR Permit No. LM2005003)
amount of dredged material from the Waukegan Harbor approach channel

Dear Ms. Rauwerdink:

In a letter dated May 9, 2012, the U.S. Army Corps of Engineers has requested that the amount of material dredged annually from the Waukegan Harbor approach channel authorized by IDNR/OWR Permit No. LM2005003 be increased from 75,000 to 115,000 cubic yards for the 2012 dredging. The Department has reviewed your request and by this letter has granted your request.

This work is subject to all the terms and special conditions of Permit No. LM2005003 (copy enclosed) and is not valid until the IEPA has granted their approval. This revision does not exempt you from receiving any other required federal, state, or local permits.

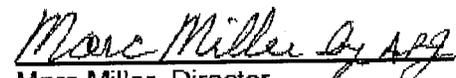
RECOMMENDED:


Daniel Injerd, Chief
Lake Michigan Management Section

APPROVAL RECOMMENDED:


Arlan R. Juhl, P.E., Director
Office of Water Resources

APPROVED:


Marc Miller, Director
Department of Natural Resources

Enclosure
cc: IEPA (Allan Keller)



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 - (217) 782-2829
 JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 - (312) 814-6026

DOUGLAS P. SCOTT, DIRECTOR

217/782-3362

March 6, 2009

Mike Nguyen
 Planning Programs and Project Management Division
 Project Management Branch
 Chicago District
 U.S. Army Corps of Engineers
 111 North Canal Street
 Chicago, IL 60606-7206

Re: Chicago District, U. S. Army Corps of Engineers – Waukegan Harbor Approach Channel and
 Advanced Maintenance Area
 Permit # 2005 -LM-2830-3
 Log # 2095-2009

Gentlemen:

This Agency has reviewed the information in your letter and supporting documentation dated December 22, 2008 concerning the referenced project. The original application was received on January 24, 2003 for annual dredging of up to 75,000 cubic yards of sediment from the Waukegan Harbor Approach Channel and Advanced Maintenance Area in Lake Michigan and approved under Section 401 of the Clean Water Act and Section 39 of the Illinois Environmental Protection Act on February 1, 2005. Supplemental permits for this project were issued by the Illinois EPA on June 28, 2005 and April 1, 2008. We offer the following comments in response to your request to modify the certification/permit.

The annual mechanical maintenance dredging of Waukegan Harbor Approach Channel and Advanced Maintenance Area specified in your letter of December 24, 2009 is hereby approved in accordance with the following specified conditions .

Conditions 1 through 11 of the final determination Log Nos. 2005-LM-2830, 2005-LM-2830-1, and 2005-LM-2830-2 have been replaced with the following:

1. The applicant shall not cause:
 - a. violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C: Water Pollution Rules and Regulation;
 - b. water pollution defined and prohibited by the Illinois Environmental Protection Act;
 - c. violation of applicable provisions of the Illinois Environmental Protection Act; or
 - d. interference with water use practices near public recreation areas or water supply intakes.

2. The applicant shall provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.

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Log No. 2095-2009

3. For open water disposal, the dredge material shall be placed in the water in a manner to minimize re-suspension of sediment material and contaminants by utilizing techniques including careful placement methods, disposal during favorable weather conditions that minimize turbulence and transport of suspended contaminants and other methods such as turbidity curtains should be used as necessary to minimize re-suspension of sediment material.
4. The applicant shall not place or discharge dredge material into Lake Michigan or into waters of the State for beach nourishment or other purposes without written approval from the Illinois EPA for the particular dredge cut location. For any new proposed dredge area not previously approved by the Illinois EPA, the applicant shall provide the data and information of Condition 5 prior to the initial dredging event for the dredge cut location.
5. Prior to each dredging event or placement of dredged material during the term of this authorization, the following sampling and analysis shall be conducted on a representative number of samples from the dredge cut (minimum of 3 samples analyzed separately):
 - a. A particle size distribution.
 - b. Analysis of asbestos by the following appropriate method(s):
 - i) For material to be placed below the Ordinary High Water Mark (OHWM), Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM) methods shall be used for asbestos testing. All samples shall be analyzed by each asbestos test method.
 - ii) For each new dredge material source location, for material to be placed on the beach or in waters for beach nourishment, the modified Superfund method as described in Condition 8 shall be conducted at least one time for each dredge area location. After the initial modified Superfund testing is conducted, any future Superfund testing requirements for dredge material at that same location will be determined after Illinois EPA review considering existing data, regulations, Illinois Pollution Control Board orders or judicial orders regarding asbestos. The advanced maintenance area and approach channel location tested in the report of the Illinois Attorney General's Task Force on Asbestos Contamination at Illinois Beach State Park and in Lake Michigan dated June 20, 2006 fulfills this condition 4 (c).
 - c. For hydraulic dredging or open water placement of dredged material, analysis of the supernatant to be reported in mass per volume for the following parameters: total suspended solids (TSS), total volatile solids (TVS), ammonia-nitrogen (as N), phosphorus (as P), total dissolved solids (TDS), sulfate, chloride, lead (total), zinc (total), and total polychlorinated biphenyls (PCBs).
 - d. For hydraulic dredging or open water placement of dredged material, analysis of the supernatant shall be based on a zero (0) and four (4) hour settling periods and reported in mass per volume.
6. Should any of the results from condition 5 meet the following, the applicant shall submit the results to the Agency for approval 90 days prior to proposed dredging.
 - a. Material with greater than 20% passing a #230 U.S. sieve.
 - b. Material with greater than 1% ACM reported from the PLM or TEM test.
 - c. Material tested for asbestos using the Superfund method that exceeds a mean value of 6.23 Ms/g PM₁₀ and a 95% upper confidence limit (UCL) of 12.58 Ms/g PM₁₀ for the 12 or more samples using the sum of the Protocol and NIOSH 7402 test methods of condition 8.
 - d. Material for new dredge cut locations not previously reviewed and approved for dredge material discharge.
 - e. The submittal shall include a map with sampling locations and the methods/procedures including reporting limits for the parameters analyzed. The laboratory analysis sheets shall be included in the submittal. The reporting limits shall be in compliance with condition 9.

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Log No. 2095-2009

7. If the 4 hour supernatant test results of the dredge material exceed the following, monitoring shall be conducted in the case of open water disposal of the dredged materials: 0.02 mg/L ammonia-nitrogen (as N), 12 mg/L chloride, 0.007 mg/L phosphorus, 0.1 ug/L total PCBs and 15 mg/L of total suspended solids (TSS). The following parameters shall be monitored on a twice weekly basis in the first week of the dredging event and weekly thereafter and reported in mg/L: total suspended solids (TSS), ammonia-nitrogen (as N), phosphorus (as P), chloride and total PCBs. The sampling shall be conducted in accordance with the following:
- A sample of the water quality at the dredge disposal site shall be collected prior to the start of dredging activities, at surface and mid-depth elevations consisting of water hardness, water pH, and water temperature in addition to the above listed parameters.
 - Samples shall be collected at surface and mid-depth elevations at a representative location approximately 500 feet from the discharge point.
 - Samples shall be taken at each location, at approximately one (1) hour and four (4) hours after a representative hopper barge of dredge material is deposited in the lake or hydraulic discharge begins.
8. For new dredge cut locations as specified in Special Condition 4 and 5, for areas to be dredged from Lake Michigan for material to be placed on the beach or in waters for beach nourishment, the applicant shall submit sediment sample results at a minimum of 12 sites for each potential nutrient sand source. Samples shall be prepared in accordance with the most current version of the Superfund Method for the Determination of Releasable Asbestos in Soils and Bulk Materials (U.S. EPA 540-R-97-028, 1997) and modified in the Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material (Berman and Kolk, May 2000) and additional modifications necessary to obtain the necessary samples of PM₁₀ in accordance with the Illinois Attorney General's Task Force Report. Sampling shall utilize a grid sampling system with equally spaced samples. Samples analyzed for asbestos shall be analyzed by Transmission Electron Microscopy (TEM) and for both the NIOSH 7402 (PCME) method and Protocol Structures method. The aforementioned sampling and analysis shall be conducted in accordance with the recommendations specified in the document entitled "Illinois Beach State Park (IBSP): Determination of Asbestos Contamination in Sand Used for Beach Nourishment, Final Recommendations," dated December 29, 2003, prepared by the University of Illinois at Chicago, Center of Excellence in Environmental Health, Health Hazard Evaluation Program for the Illinois Attorney General's Task Force that was formed to address asbestos contaminated at Illinois Beach State Park (IBSP). An initial report for the initial dredging event containing the sampling results, methods, locations and depths, laboratory analysis reports and a discussion of the findings shall be submitted to the Agency. The Illinois EPA will reevaluate the need for future sampling, analysis and reporting, and will issue necessary additional conditions based upon the results of the sampling, analysis and reports required by this condition.
9. All parameters tested in accordance with condition 5, 7 and 8 shall be tested by methods in accordance with 40CFR136 with reporting limits that do not exceed the following values:
- | | |
|---|-------------------------|
| a. Ammonia-Nitrogen (as N) | 0.02 mg/L |
| b. Chloride | 12 mg/L |
| c. Lead (total) | 0.05 mg/L |
| d. Phosphorus | 0.007 mg/L |
| e. Sulfate | 24 mg/L |
| f. Total Dissolved Solids (TDS) | 180 mg/L |
| g. Zinc (total) | 0.159 mg/L |
| h. Polarized Light Microscopy (PLM) | 1% ACM |
| i. Transmission Electron Microscopy (TEM) | 1% ACM |
| j. Superfund Method | 2 Ms/g PM ₁₀ |
| k. Total polychlorinated biphenyls (PCBs) | 0.1 ug/L |
| l. Total Suspended Solids | 15 mg/L |
10. Any material with PLM or TEM values exceeding 1% of asbestos containing material (ACM) shall be disposed in a properly permitted landfill.

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Log No. 2095-2009

11. The permittee shall monitor in accordance with condition 7. The permittee shall operate the dredge and disposal such that the surface water at 500 feet from the discharge point does not exceed 0.02 mg/L ammonia-nitrogen (as N), 12 mg/L chloride, 0.05 mg/L lead (total), 0.007 mg/L phosphorus, 24 mg/L sulfate, 180 mg/L total dissolved solids (TDS), 0.159 mg/L zinc (total), and 0.1 ug/L total polychlorinated biphenyls (PCBs) or does not exceed the background concentrations measured under condition 7 and otherwise complies with the water quality standards of 35 Ill. Adm. Code, Subtitle C.
12. For sediment testing results that are not approved by IEPA prior to dredging all test results and sampling information obtained under condition 5 shall be submitted to the IEPA 60 days after completion of the dredging event in a dredging event report. Surface water monitoring results of condition 7, drawings depicting the location of each collected surface water sample point, the volume of dredge material discharged, method of dredging (e.g.) mechanical or hydraulic, the depth of water at the dredge disposal location and the dredge disposal location shall be submitted in a dredging event report 60 days after completion of each dredging event. The dredging event report shall provide the data and method of determining downstream surface water sampling locations. The date, time, location, and individual(s) who performed the sampling shall be included in the sediment and surface water testing reports. The laboratory analysis sheets shall be included in the reports. The date and time that discharge begins and ends for the barge load or the hydraulic dredging event shall be recorded and included in the dredging event report. If no dredging occurs in a calendar year a report shall be submitted to IEPA by January 15th of the following year indicating no dredge material discharge occurred.
13. The Illinois EPA may reopen and revise this certification and final determination based on the findings, recommendations and health risk criteria developed by and published in the final report of the Illinois Attorney General's Task Force on asbestos contamination at Illinois Beach State Park and in Lake Michigan, or due to new additional information regarding asbestos contamination of dredge materials and beaches, or to conform to new state or federal regulations, Illinois Pollution Control Board orders or judicial orders.
14. For any hydraulically dredged material placed in a constructed upland area, a construction and operation permit issued by the Agency under 35 Il. Adm. Code Section 309.202 and 309.203 must be obtained and any conditions thereof complied with.
15. The mechanical dredging and dredge material placement in the waters of Lake Michigan for 2009 is approved based on the sampling plan and sediment results submitted prior to the issuance of this approval. The mechanical dredging and dredge material placement in the waters of Lake Michigan is approved for future dredging events in accordance with the terms of this certification/permit.

Page No. 5
Log No. 2095-2009

16. Sediment testing results of condition 5 must be submitted for approval by IEPA prior to any proposed hydraulic dredging and discharge of dredge material to waters of the State. The submittal must include documentation that shows that the proposed hydraulic dredge material discharge to waters of the State will meet water quality standards.

Sincerely,



Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK::DLH/20952009lm.doc

cc:IEPA, Records Unit
IEPA, DWPC, FOS, Des Plaines
CoE, Chicago District
IDNR, OWR, Chicago
USEPA, Region 5



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 – (217) 782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 – (312) 814-6026

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/782-3362

April 1, 2008

Jennifer Raber
Planning, Programs and Project Management Division
Chicago District
Corps of Engineers
111 North Canal Street
Chicago, IL 60606-7206

Re: Chicago District, U.S. Army Corps of Engineers – Waukegan Harbor Approach Channel and Advanced Maintenance Area
Permit # 2005-LM-2830-2
Log # LM 0228-08

Dear Ms. Raber:

This Agency has reviewed the information contained in your letter of November 16, 2007 concerning the referenced project. The original application was received on January 24, 2003 for annual dredging of up to 75,000 cubic yards of sediment from the Waukegan Harbor Approach Channel and Advanced Maintenance Area in Lake Michigan and approved under Section 401 of the Clean Water Act and Section 39 of the Illinois Environmental Protection Act on February 1, 2005. Supplemental permit for this project was issued by the Illinois EPA on June 28, 2005. We offer the following comments in response to your request to modify that certification/permit.

The dredging specified in your letter is hereby approved, as required under Special Condition 8 of Permit # 2005-LM-2830-1 issued June 28, 2005 and in accordance with the following conditions:

Condition 3 of Permit # 2005-LM-2830-1 has been revised as follows:

3. Beginning with the 2009 dredge season, each dredging event or placement of dredged material during the term of this authorization, the following sampling and analysis shall be conducted:
 - a. A representative number of samples from the dredge cut.
 - b. A particle size distribution for each sample.
 - c. Analysis of asbestos by the following appropriate method(s):
 - i) For material to be placed below the Ordinary High Water Mark (OHWM), Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM) methods shall be used for asbestos testing. All samples shall be analyzed by each asbestos test method.
 - ii) For each dredge material source location, for material to be placed on the beach or in waters for beach nourishment, the modified Superfund method as described in Condition 7 shall be conducted at least one time. After the initial modified Superfund testing is conducted, any future Superfund testing requirements for that material at that same location will be determined considering existing data, regulations, Illinois Pollution Control Board orders or judicial orders regarding asbestos.

- d. For hydraulic dredging or open water placement of dredged material, analysis of the supernatant to be reported in mass per volume for the following parameters: total suspended solids (TSS), total volatile solids (TVS), ammonia-nitrogen (as N), phosphorus (as P), total dissolved solids (TDS), sulfate, chloride, lead (total), zinc (total) and total polychlorinated biphenyls (PCBs).
- e. For hydraulic dredging or open water placement of dredged material, analysis of the supernatant shall be based on a zero (0) and four (4) hour settling periods and reported in mass per volume.
- f. The analyses required herein shall be consistent with the sampling plan required in Condition 6.

Condition 5 of Permit # 2005-LM-2830 has been modified as follows:

- 5. Beginning with the 2009 dredge season, monitoring shall be conducted in the case of open water disposal of dredged materials. The following parameters shall be monitored on a daily basis and reported in mass per volume: total suspended solids (TSS), total dissolved solids (TDS), lead (total), zinc (total), ammonia-nitrogen (as N), phosphorus (as P), sulfate, and chloride and total polychlorinated biphenyls (PCBs). The sampling shall be conducted in accordance with the following:
 - a. A sample of the water quality at the dredge disposal site shall be collected prior to the start of dredging activities, at surface and mid-depth elevations consisting of water hardness, water pH, and water temperature in addition to the above listed parameters.
 - b. Samples shall be collected at surface and mid-depth elevations at two representative locations, one at approximately 500 feet from the discharge point and one at approximately 100 feet from the discharge point.
 - c. Samples shall be taken at each location daily, at approximately one (1) hour and four (4) hours after a representative hopper barge of dredge material is deposited in the lake or hydraulic discharge begins.
 - d. Monitoring results, drawings depicting the location of each collected sample point, the volume of dredge material discharged and the dredge disposal location shall be submitted in a report within one month following the collection of samples. The monitoring report shall provide the data and method of determining downstream sample locations. The date, time, location, and individual(s) who performed the sampling shall be included in the monitoring reports. The laboratory analysis sheets shall be included in the monitoring reports. The date and time that discharge begins and ends for the barge load monitored or the hydraulic dredging event monitored shall be recorded and included in the monitoring report.

Condition 7 of Permit # 2005-LM-2830 has been modified as follows:

- 7. For areas to be dredged from Lake Michigan for material to be placed on the beach or in waters for beach nourishment, the applicant shall submit sediment sample results at a minimum of 12 sites for each potential nutrient sand source. Samples shall be prepared in accordance with the most current version of the Superfund Method for the Determination of Releasable Asbestos in Soils and Bulk Materials (U.S. EPA 540-R-97-028, 1997) and modified in the Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material (Berman and Kolk, May 2000) and additional modifications necessary to obtain the necessary samples of PM₁₀ in accordance with the Illinois Attorney General's Task Force Report. Sampling shall utilize a grid sampling system with equally spaced samples. Samples analyzed for asbestos shall be analyzed by Transmission Electron Microscopy (TEM). The aforementioned sampling and analysis shall be conducted in accordance with the recommendations specified in the document entitled "Illinois Beach State Park (IBSP): Determination of Asbestos Contamination in Sand Used for Beach Nourishment, Final Recommendations," dated December 29, 2003, prepared by the University of Illinois at Chicago, Center of Excellence in Environmental Health, Health Hazard Evaluation Program for the Illinois Attorney General's Task Force that was formed to address asbestos contaminated at Illinois Beach State Park (IBSP). An initial report for the initial dredging event containing the sampling results, methods, locations and depths, laboratory analysis reports and a discussion of the findings shall be submitted to the Agency at least 90 days prior to the dredging event. The Illinois EPA will reevaluate the need for future sampling, analysis and reporting, and will issue necessary additional conditions based upon the results of the sampling, analysis and reports required by this condition.

The following Condition 10 shall be added to Permit #2005-LM-2830:

10. For open water disposal, the dredge material shall be placed in the water in a manner to minimize re-suspension of sediment material and contaminants by utilizing techniques including careful placement methods, disposal during favorable weather conditions that minimize turbulence and transport of suspended contaminants and implementation of other necessary practices such as turbidity curtains.

The following Condition 11 shall be added to Permit #2005-LM-2830:

11. For the 2008 dredge season, monitoring shall be conducted in the case of open water disposal of dredged materials. The following parameters shall be monitored on a weekly basis and reported in mass per volume: total suspended solids (TSS), ammonia-nitrogen (as N), and phosphorus (as P). The sampling shall be conducted in accordance with the following:
 - a. A sample of the water quality at the dredge disposal site shall be collected prior to the start of dredging activities, at surface and mid-depth elevations consisting of water hardness, water pH, and water temperature in addition to the above listed parameters.
 - b. Samples shall be collected at surface and mid-depth elevations at two representative locations, one at approximately 500 feet from the discharge point and one at approximately 100 feet from the discharge point.
 - c. Samples shall be taken at each location weekly, at approximately one (1) hour and four (4) hours after a representative hopper barge of dredge material is deposited in the lake or hydraulic discharge begins.
 - d. Monitoring results, drawings depicting the location of each collected sample point, the volume of dredge material discharged and the dredge disposal location shall be submitted in a report within one month following the collection of samples. The monitoring report shall provide the data and method of determining downstream sample locations. The date, time, location, and individual(s) who performed the sampling shall be included in the monitoring reports. The laboratory analysis sheets shall be included in the monitoring reports. The date and time that discharge begins and ends for the barge load monitored or the hydraulic dredging event monitored shall be recorded and included in the monitoring report.

Sincerely,



Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:DLH:JRA

cc: IEPA, Records Unit
IEPA, DWPC, FOS, Des Plaines
CoE, Chicago District
IDNR, OWR, Chicago



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 -- (217) 782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300. CHICAGO, IL 60601 -- (312) 814-6026

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/782-3362

FEB 28 2007

Monica Ott
Project Manager
Chicago District
Corps of Engineers
111 North Canal Street, 6th floor
Chicago, Illinois 60606

Re: Quality Assurance Project Plan/Field Sampling Plan for the Advanced Maintenance Area and Approach Channel of the Waukegan Harbor, Waukegan, Illinois, Winter 2007

Dear Ms. Ott:

The Agency has reviewed the Quality Assurance Project Plan/Field Sampling Plan (QAPP/FSP) dated November 8, 2006 for the sampling proposed for the Advanced Maintenance Area and Approach Channel of the Waukegan Harbor scheduled for this Winter or Spring 2007. The QAPP/FSP is hereby approved under condition 6 of Permit # 2005-LM-2830-1 (Log # 4582-05) issued by the Illinois EPA on June 28, 2005.

The Illinois EPA awaits the submittal of the Contamination Determination based on the data obtained in accordance with the QAPP/FSP as required by conditions 3 and 8 of Permit # 2005-LM-2830-1 (Log # 4582-05) and condition 4 of Permit # 2005-LM-2830 (Log # 2830-04) issued February 1, 2005. Upon review of the submitted data the Illinois EPA will issue necessary additional conditions to insure compliance with 35 Il. Adm. Code 302.504 and 302.515.

If you have any questions on this matter, please contact Dan Heacock of my staff at the above telephone number and address.

Very truly yours,

Bruce J. Yurdin
Manager, Watershed Management Section
Bureau of Water

BJY:DLH/waukeganqapp2007.doc

cc: IEPA, Records Unit
 IEPA, DWPC, FOS, Des Plaines
 USEPA, Region 5
 COE, Chicago District
 Mr. Kallen Mrozek, COE, Chicago District
 IDNR, OWR, Chicago



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276, 217-782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601, 312-814-6026

ROD R. BLAGOJEVICH, GOVERNOR RENEE CIPRIANO, DIRECTOR

217/782-3362

JUN 28 2005

Ms. Monica Ott
Project Manager
Chicago District, Corps of Engineers
111 North Canal Street, Suite 600
Chicago, Illinois 60606-7206

Re: Chicago District, U.S. Army Corps of Engineers – Waukegan Harbor Approach Channel and
Advanced Maintenance Area
Permit # 2005-LM-2830-1
Log # 4582-05

Dear Ms. Ott:

The information submitted in your correspondence dated May 26, 2005, received by the Illinois EPA on May 31, 2005, along with the Quality Assurance Project Plan/Field Sampling Plan (QAPP/FSP) dated August 2004 and the Contaminant Determination dated November 2004 for the Waukegan Harbor Approach Channel and Advanced Maintenance Area received by the Illinois EPA on September 1, 2004 and December 6, 2004, respectively (hereafter referred to as "submitted documents"), satisfy the requirements of conditions 7 and 8 of the water quality certification and final determination issued February 1, 2005 (Permit # 2005-LM-2830) for the 2005 dredging event described in those submitted documents. Dredging events subsequent to the 2005 dredging event described in the submitted documents will need to be conducted in accordance with the conditions found in Permit #2005-LM-2830 issued February 1, 2005 and in accordance with the following conditions:

Condition 3 of Permit #2005-LM-2830 has been revised as follows:

3. Prior to each dredging event conducted during the term of this authorization, sediment analysis shall be conducted for a representative number of core samples from the dredge cut. Analysis shall be conducted for particle size distribution, total polychlorinated biphenyls (PCBs), asbestos and, for hydraulic dredging, supernatant contaminants. Polarized Light Microscopy (PLM) and the Transmission Electron Microscopy (TEM) methods shall be used for asbestos testing. All samples shall be analyzed by each asbestos test method. Analysis of the supernatant shall be based on a zero and four (4) hour settling periods. Parameters analyzed shall include total suspended solids, total volatile solids, ammonia-nitrogen (as N), pH, temperature, phosphorus (as P), total dissolved solids, sulfate, chloride, lead and zinc. The analyses required herein shall be consistent with the Quality Assurance Project Plan/Field Sampling Plan required in Condition 6 below.

Condition 6 of Permit #2005-LM-2830 has been revised as follows:

6. Ninety (90) days prior to sampling, the applicant shall provide a Quality Assurance Project Plan/Field Sampling Plan (QAPP/FSP) for the Waukegan Harbor Advanced Maintenance Area and Approach Channel sediment sampling with regard to the sampling required in Condition 3 above for each dredging event. The QAPP/FSP shall include a review of historical sediment data from the Advanced Maintenance Area and Approach Channel of Waukegan Harbor as well as the proposed methods and procedures for sampling, sampling frequency, parameters to be analyzed in the sediment, methods and procedures of analysis and sample location selection.

Condition 7 of Permit #2005-LM-2830 has been revised as follows:

7. The Illinois EPA will reevaluate the need for future sampling, analysis and reporting, and will issue necessary conditions based upon the results of the sampling, analysis and reports required by this final determination.

Condition 8 of Permit #2005-LM-2830 has been revised as follows:

8. The applicant shall not place or discharge material dredged from the Waukegan Harbor Approach Channel and Advanced Maintenance Area into Lake Michigan or into waters of the State for beach nourishment or other purposes without requesting and receiving written approval from the Illinois EPA prior to such operations. Prior to any dredging event the applicant shall provide data and information to meet the requirements of Condition 3. Illinois EPA will review the data and information and will issue, conditionally issue or deny approval of disposal within Lake Michigan or other waters of the State for each dredging event.

Condition 9 has been added to Permit #2005-LM-2830 as follows:

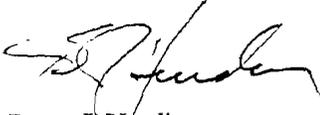
9. The Illinois EPA may reopen and revise this final determination based on the findings, recommendations and health risk criteria developed by and published in the final report of the Illinois Attorney General's Task Force on asbestos contamination at Illinois Beach State Park and in Lake Michigan, or to conform to new state or federal regulations, Illinois Pollution Control Board orders or judicial orders.

We note that the proposed dredging will be conducted by mechanical methods. Should other methods be used, however, additional analysis, reporting and procedures for monitoring the lake at the disposal site(s) during the alternative operations are specified in the conditions of Permit #2005-LM-2830 and in this modification of Permit #2005-LM-2830.

Page No. 3
Log No. 4582-05

If you have any questions on these matters, please contact David Ginder at the address or telephone number listed above.

Sincerely,



Bruce J. Yurdin
Manager, Watershed Management Section
Bureau of Water

BY:DPG:2830-041.doc

cc: IEPA, Records Unit
IEPA, DWPC, FOS, Des Plaines
Mr. Dan Injerd, IDNR, OWR, Chicago
Mr. Todd Rettig, INDR
Mr. John Rogner, USFWS
Binds



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276, 217-782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601, 312-814-6026

ROD R. BLAGOJEVICH, GOVERNOR RENEE CIPRIANO, DIRECTOR

217/782-3362

FEB 01 2005

Illinois Department of Natural Resources
Office of Water Resources
36 S. Wabash Avenue, Suite 1415
Chicago, IL 60603

Chicago District Corps of Engineers
111 North Canal Street, 6th Floor
Chicago, IL 60606

Re: Chicago District, U.S. Army Corps of Engineers - Waukegan Harbor Approach Channel and
Advanced Maintenance Area
Permit # 2005-LM-2830
Log # 2830-04

Gentlemen:

This Agency received a request on January 24, 2003 from the Chicago District of the U.S. Army Corps of Engineers requesting necessary comments concerning the annual maintenance dredging of up to 75,000 cubic yards of sediment from the Waukegan Harbor Approach Channel and Advanced Maintenance Area in Lake Michigan commencing with the 2005 dredging season. We offer the following comments.

Based on the information included in this submittal, it is our engineering judgment that the proposed project may be completed without causing water pollution as defined in the Illinois Environmental Protection Act, provided the project is carefully planned and supervised.

These comments are directed at the effect on water quality of the construction procedures involved in the above described project and are not an approval of any discharge resulting from the completed facility, nor an approval of the design of the facility. These comments do not supplant any permit responsibilities of the applicant toward the Agency.

This Agency hereby issues certification under Section 401 of the Clean Water Act (PL 95-217) and final determination under Section 39 of the Illinois Environmental Protection Act, subject to the applicant's compliance with the following conditions:

1. The applicant shall not cause:
 - a. violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C: Water Pollution Rules and Regulations;
 - b. water pollution defined and prohibited by the Illinois Environmental Protection Act; or

ROCKFORD - 4302 North Main Street, Rockford, IL 61103 - (815) 987-7760 • DES PLAINES - 9511 W. Harrison St., Des Plaines, IL 60016 - (847) 294-4000
ELGIN - 595 South State, Elgin, IL 60123 - (847) 608-3131 • PEORIA - 5415 N. University St., Peoria, IL 61614 - (309) 693-5463
BUREAU OF LAND - PEORIA - 7620 N. University St., Peoria, IL 61614 - (309) 693-5462 • CHAMPAIGN - 2125 South First Street, Champaign, IL 61820 - (217) 278-5800
SPRINGFIELD - 4500 S. Sixth Street Rd., Springfield, IL 62706 - (217) 786-6892 • COLLINSVILLE - 2009 Mall Street, Collinsville, IL 62234 - (618) 346-5120
MARION - 2309 W. Main St., Suite 116, Marion, IL 62959 - (618) 993-7200

- c. interference with water use practices near public recreation areas or water supply intakes.
2. The applicant shall provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.
3. Prior to each dredging event conducted during the term of this authorization, sediment analysis shall be conducted for a representative number of core samples from the dredge cut. Analysis shall be conducted for particle size distribution, total polychlorinated biphenyls (PCBs), asbestos and, for hydraulic dredging, supernatant contaminants. Samples analyzed for asbestos shall be analyzed by Transmission Electron Microscopy (TEM). Analysis of the supernatant shall be based on a zero and four (4) hour settling periods. Parameters analyzed shall include total suspended solids, total volatile solids, ammonia-nitrogen (as N), pH, temperature, phosphorus (as P), total dissolved solids, sulfate, chloride, lead and zinc. The analyses required herein shall be consistent with the Quality Assurance Project Plan/Field Sampling Plan required in Condition 6 below.
4. All test results from Condition 3 shall be submitted to the Agency prior to each dredging event. Results must indicate compliance with 35 Ill. Adm. Code 302.503, 302.504, 302.515 and 302.535. Upon review of these data the Agency will issue necessary additional conditions to insure compliance with these standards.
5. Monitoring shall be conducted in the case of hydraulic dredging. Monitoring of total suspended solids, total dissolved solids, ammonia-nitrogen (as N), pH, temperature, phosphorus (as P), sulfate and chloride shall be conducted on a daily basis. Samples shall be collected at surface, mid-depth and bottom elevations at four representative locations, two at approximately 600 feet from the discharge pipe and two at approximately 100 feet from the discharge pipe. Monitoring results and the locations of all collected samples shall be submitted within one month following the collection of samples.
6. The applicant shall provide a Quality Assurance Project Plan/Field Sampling Plan (QAPP/FSP) for the Waukegan Harbor Advanced Maintenance Area and Approach Channel sediment sampling with regard to the sampling required in Condition 3 above for each dredging event. The QAPP/FSP shall include a review of historical sediment data from the Advanced Maintenance Area and Approach Channel of Waukegan Harbor as well as the proposed methods and procedures for sampling, sampling frequency, parameters to be sampled in the sediment and sample location selection.
7. Prior to the next dredging event (starting with sampling collected for the 2005 dredging season), the applicant shall submit sediment sample results at a minimum of 12 sites from each potential nutrient sand source and from each of two background locations. Samples shall be prepared in accordance with the most current version of the Superfund Method for the Determination of Releasable Asbestos in Soils and Bulk Materials (U.S. EPA 540-R-97-028, 1997). Sampling shall utilize a grid sampling system with equally spaced samples. Samples analyzed for asbestos shall be analyzed by Transmission Electron Microscopy (TEM). The aforementioned sampling and analysis shall be conducted in accordance with the recommendations specified in the document entitled "Illinois Beach State Park (IBSP): Determination of Asbestos Contamination in Sand Used for Beach Nourishment, Final Recommendations", dated December 29, 2003, prepared by the University of Illinois at Chicago, Center of Excellence in Environmental Health, Health Hazard Evaluation Program for the Illinois Attorney General's Task Force that was formed to address asbestos contamination at Illinois Beach State Park (IBSP). An initial report for the next dredging event containing the sampling results, methods, locations and depths, laboratory analysis reports and a discussion of the findings shall be submitted to the Agency at least 90 days prior to the next dredging event. The Illinois EPA will reevaluate the need for future sampling, analysis and reporting, and will issue necessary additional conditions based upon the results of the sampling, analysis and reports required by this condition.

8. The applicant shall not place or discharge material dredged from the Waukegan Harbor Approach Channel and Advanced Maintenance Area into Lake Michigan or into waters of the State for beach nourishment or other purposes without requesting and receiving written approval from the Illinois EPA prior to such operations. Prior to any dredging event the applicant shall provide data and information to meet the requirements of Conditions 3 and 7. Illinois EPA will review the data and information relative to the findings, recommendations and health risk criteria developed by and published in the final report of the Illinois Attorney General's Task Force on asbestos contamination at Illinois Beach State Park and in Lake Michigan. Illinois EPA will issue, conditionally issue or deny approval of disposal within Lake Michigan or other waters of the State for each dredging event on this basis.

This certification and final determination expires on December 31, 2014.

Required sampling and analysis may be completed by the applicant or its contractor or designee. In fact, the Illinois EPA understands that the Illinois Department of Natural Resources may be completing the sampling and analysis required under this permit, on behalf of the applicant. So long as required sample analysis reports are received by the Illinois EPA, such an arrangement satisfies the applicant's obligations under this permit.

This final determination replaces the final determinations issued June 5, 2003 (Permit # 2003-LM-3067) and April 14, 2004 (Permit # 2003-LM-3067-1).

This certification and final determination becomes effective when the Department of the Army, Corps of Engineers, and the Illinois Department of Natural Resources, Office of Water Resources, includes the above conditions # 1 through # 8 as conditions of the requested permit issued pursuant to Section 404 of PL 95-217, and Section 39 of the Illinois Environmental Protection Act and Chapter 19, par.65, Ill. Rev. Stat.

This certification and final determination does not grant immunity from any enforcement action found necessary by this Agency to meet its responsibilities in prevention, abatement, and control of water pollution.

Sincerely,



Bruce J. Yurdin
Manager, Watershed Management Section
Bureau of Water

BY:DPG:2830-04.doc

cc: IEPA, Records Unit
IEPA, DWPC, FOS, Des Plaines
USEPA, Region 5
Binds
Ms. Monica Ott, CoE, Chicago District

**PERMIT NO. LM2005003**

DATE: February 22, 2005

State of Illinois
Department of Natural Resources, Office of Water Resources
and
Environmental Protection Agency

Permission is hereby granted to: **U.S. Army Corps of Engineers**
Chicago District
111 N. Canal Street, Suite 600
Chicago, IL 60606-7205

TEN YEAR MAINTENANCE DREDGING

To dredge up to 75,000 cubic yards of sand annually from the Waukegan Harbor approach channel and Advance Maintenance Area and dispose of in Lake Michigan in the Southeast Quarter of Section 22, Township 45 North, Range 12 East, of the 3rd Principal Meridian in Lake County.

In accordance with an undated application and the plans and specifications entitled:

WAUKEGAN HARBOR MAINTENANCE DREDGING, SHEETS, G-01, C-01, AND C-02, DATED DECEMBER 2002, RECEIVED FEBRUARY 3, 2003.

PROPOSED DISPOSAL AREAS: STATE PARK AND FOUNDRY SITE, ONE SHEET, UNDATED, RECEIVED FEBRUARY 3, 2003.

Examined and Recommended:

Daniel Injerd, Chief
Lake Michigan Management Section

Approval Recommended:

Gary R. Clark, Director
Office of Water Resources

Approved:

Joel Brunsvold, Director
Department of Natural Resources

This PERMIT is subject to the terms and special conditions contained herein and in the attached NOTICE OF FINAL DETERMINATION of the Illinois Environmental Protection Agency. This PERMIT is not valid unless a NOTICE OF FINAL DETERMINATION of the Illinois Environmental Protection Agency as required by Section 39(a) of the Environmental Protection Act is attached.

PERMIT NO. LM2005003**THIS PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS:**

- 1) This permit is granted in accordance with the Rivers, Lakes and Streams Act, "615 ILCS 5," and the Environmental Protection Act "415 ILCS 5/1."
- 2) This permit does not convey title to the permittee or recognize title of the permittee to any submerged or other lands, and furthermore, does not convey, lease or provide any right or rights of occupancy or use of the public or private property on which the activity or any part thereof will be located, or otherwise grant to the permittee any right or interest in or to the property, whether the property is owned or possessed by the State of Illinois or by any private or public party or parties.
- 3) This permit does not release the permittee from liability for damage to persons or property resulting from the work covered by this permit, and does not authorize any injury to private property or invasion of private rights.
- 4) This permit does not relieve the permittee of the responsibility to obtain other federal, state or local authorizations required for the construction of the permitted activity; and if the permittee is required by law to obtain approvals from any federal or other state agency to do the work, this permit is not effective until the federal and state approvals are obtained.
- 5) The permittee shall, at the permittee's own expense, remove all temporary piling, cofferdams, false work, and material incidental to the construction of the project from Lake Michigan. If the permittee fails to remove such structures or materials, the Department may have removal made at the expense of the permittee.
- 6) In public waters, if future need for public navigation or other public interest by the state or federal government necessitates changes in any part of the structure or structures, such changes shall be made by and at the expense of the permittee or the permittee's successors as required by the Department or other properly constituted agency, within sixty (60) days from receipt of written notice of the necessity from the Department or other agency, unless a longer period of time is specifically authorized.
- 7) The execution and details of the work authorized shall be subject to the review and approval of the Department and/or the Agency. Department and Agency personnel shall have the right of access to accomplish this purpose.
- 8) Starting work on the activity authorized will be considered full acceptance by the permittee of the terms and conditions of the permit.
- 9) The Department and Agency in issuing this permit have relied upon the statements and representations made by the permittee; if any substantive statement or representation made by the permittee is found to be false, this permit will be revoked and when revoked, all rights of the permittee under the permit are voided.
- 10) The permittee and the permittee's successors shall make no claim whatsoever to any interest in any accretions caused by the activity.
- 11) In issuing this permit, the Department and Agency do not ensure the adequacy of the design or structural strength of the structure or improvement.
- 12) Noncompliance with the conditions of this permit will be considered grounds for revocation.
- 13) If the construction activity here permitted is not completed on or before **December 31, 2015**, this permit shall cease and be null and void. When all work is constructed, the permittee shall notify the Department so that a final inspection can be completed.

THIS PERMIT IS SUBJECT TO FURTHER SPECIAL CONDITIONS AS FOLLOWS:

- A. Conditions 1-8 of the Illinois Environmental Protection Agency's February 1, 2005 final determination letter.
- B. Notify the City of North Chicago and Abbot Laboratories each year prior to commencement of dredging.
- C. Notify the Department annually of the amount of material dredged and the disposal location.



State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

*WAS → ED - J
files*

Mary A. Gade, Director
217/782-0610

2200 Churchill Road, Springfield, IL 62794-9276
→ ED-HE

May 30, 1996

Mr. Joseph D. Jacobazzi, P.E.
Chief, Engineering Division
Chicago District Corps of Engineers
111 North Canal Street
Chicago, IL 60606

Re: Waukegan Harbor Approach Channel and Advanced Maintenance Area: Tier 2 Evaluation
Permit # 1992-LM-0347

Dear Mr. Jacobazzi:

We have reviewed the Tier 2 evaluation for the maintenance dredging of the Waukegan Harbor approach channel and advanced maintenance area, submitted on April 22, 1996. The April 12, 1996 Tier 2 Report includes sediment data from the advanced maintenance area. Sediments were analyzed for grain size, PCBs and elutriate concentrations for various heavy metals, nutrients and other contaminant indicators. These analyses were consistent with the required testing procedures specified in the Section 401 certification 1992-LM-0347 issued for the approach channel dredging, issued on May 4, 1992.

We concur with the findings and conclusions of the Tier 2 Report. While several metal and nutrient constituents indicate the potential for exceedences, we believe the use of mechanical dredge, as proposed, and the further effects of dilution in the immediate disposal area, will mitigate these potential water quality impacts. Therefore, the Section 401 water quality certification cited above is hereby modified to include the advanced maintenance area specified in the Tier 2 Report. Subsequent dredging of this area is subject to the conditions of this certification.

If you have any questions on this matter, please contact Bruce Yurdin of my staff.

Very truly yours,

Thomas G. McSwiggin, P.E.
Manager, Permit Section
Division of Water Pollution Control

cc: DWPC, FOS, Maywood
IDNR, OWR, Chicago



State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

~~10~~
Gade

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/782-0610

November 28, 1995

Mr. Joseph D. Jacobazzi, P.E.
Chief, Engineering Division
Chicago District Corps of Engineers
111 North Canal Street
Chicago, IL 60606

Re: Waukegan Harbor Approach Channel, Tier 1 Evaluation
Log# C-1562-95

Dear Mr. Jacobazzi:

We have reviewed the Tier 1 Sediment Evaluation for the maintenance dredging of the Waukegan Harbor approach channel, provided on November 3, 1995. The Tier 1 report concludes that the approach channel sediment should be tested for grain size and for total constituent (bulk) and elutriate concentrations for various heavy metals, nutrients, PCBs and other contaminant indicators.

We concur with the conclusions of the Tier 1 evaluation, and find it consistent with our views on the current contaminant concentration status of the Waukegan Harbor sediments.

Section 1.7 of the Tier 1 report, in documenting the various possible sources of contamination of the approach channel sediment, does not include potential contributions, past or present, from the OMC's north ditch, a drainage ditch on the northern boundary of the OMC properties. This ditch was used for an extended period to convey wastewater and stormwater runoff from the OMC site to Lake Michigan. The outfall for the north ditch is north (up drift) of the approach channel of the harbor.

Thank you for this opportunity to comment on the Corps of Engineers' evaluation of the sediment conditions at Waukegan Harbor. If you have any questions on this matter, please contact me.

Sincerely,

Bruce J. Yurdin
Manager, Watershed Unit
Permit Section
Division of Water Pollution Control

cc: DWPC, FOS, Maywood

Appendix B

Laboratory Information



July 13, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1205B19

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 3 sample(s) on 05/23/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,



Melissa Amador
Project Manager





Client: Ryba Marine Construction Co.

Date: July 13, 2012

Project: Waukegan Harbor Approach Channel Dredgin

PO #:

WorkOrder: 1205B19

QC Level:

Temperature of samples upon receipt at SLI: 4 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:

This report supersedes the report dated 6/1/12.



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1205B19

Client Sample ID: Initial Sample Area 1 - Surface

Matrix: SURFACE WATER

Lab ID: 1205B19-001

Date Received: 05/23/2012 2:00 PM

Collection Date: 05/23/2012 10:15 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	153	0.500		mg/L	1	05/24/2012 3:57 PM	R23345
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.63			pH			
Temperature	15.1			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO3)	126	0.050	c	mg/L	1	05/31/2012 6:00 PM	9462
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH3 F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0124	0.0100	J	mg/L	1	05/29/2012 3:59 PM	R23446
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00752	0.00500	J	mg/L	1	05/31/2012 1:59 PM	9536
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	05/25/2012 4:40 PM	R23384

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1205B19

Client Sample ID: Initial Sample Area 1 - Mid-depth

Matrix: SURFACE WATER

Lab ID: 1205B19-002

Date Received: 05/23/2012 2:00 PM

Collection Date: 05/23/2012 10:26 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	7.81	0.500		mg/L	1	05/24/2012 3:57 PM	R23345
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	7.99			pH			
Temperature	14.4			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	130	0.050	c	mg/L	1	05/31/2012 6:00 PM	9462
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0204	0.0100		mg/L	1	05/29/2012 3:59 PM	R23446
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0105	0.00500	J	mg/L	1	05/31/2012 1:59 PM	9536
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	ND	0.400		mg/L	1	05/25/2012 4:40 PM	R23384

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1205B19

Client Sample ID: Blind Duplicate

Matrix: SURFACE WATER

Lab ID: 1205B19-003

Date Received: 05/23/2012 2:00 PM

Collection Date: 05/23/2012 10:26 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	8.35	0.500		mg/L	1	05/24/2012 3:57 PM	R23345
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	7.71			pH			
Temperature	14.3			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	132	0.050	c	mg/L	1	05/31/2012 6:00 PM	9462
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0133	0.0100	J	mg/L	1	05/29/2012 3:59 PM	R23446
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00752	0.00500	J	mg/L	1	05/31/2012 1:59 PM	9536
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	ND	0.400		mg/L	1	05/25/2012 4:40 PM	R23384

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 13, 2012
Lab Order: 1205B19

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1205B19-001B	05/23/12 10:15:00 A	9536	P_WW_LOWPR	PHOSPHORUS, TOTAL		05/31/12
1205B19-001C		9462	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		05/24/12
1205B19-002B	05/23/12 10:26:00 A	9536	P_WW_LOWPR	PHOSPHORUS, TOTAL		05/31/12
1205B19-002C		9462	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		05/24/12
1205B19-003B		9536	P_WW_LOWPR	PHOSPHORUS, TOTAL		05/31/12
1205B19-003C		9462	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		05/24/12



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QC SUMMARY REPORT

WO#: **1205B19**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23345CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345
Client ID: CCB	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502524
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: R23345CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345
Client ID: CCV	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502525
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	95.3	5.00	100.0	0	95.3 90 110

Sample ID: R23345ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345
Client ID: ICV	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502526
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	97.0	5.00	100.0	0	97.0 90 110

Sample ID: MB-R23345	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345
Client ID: PBW	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502527
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: LCS-R23345	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345
Client ID: LCSW	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502528
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	103	5.00	100.0	0	103 85 115

Qualifiers:

%X Value exceeds Maximum Contaminant Level	E Estimated, detected above quantitation range	H Holding times for preparation or analysis exceeded
M Manual Integration used to determine area response	ND Not Detected at the Reporting Limit	P Second column confirmation exceeds
R RPD outside accepted recovery limits	RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1205B19
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23345CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345						
Client ID: CCV	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502536						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98.3	5.00	100.0	0	98.3	90	110				

Sample ID: R23345CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345						
Client ID: CCB	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502537						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R23345CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345						
Client ID: CCV	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502587						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	5.00	100.0	0	100	90	110				

Sample ID: R23345CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345						
Client ID: CCB	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502588						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R23345CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345						
Client ID: CCV	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502591						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	97.3	5.00	100.0	0	97.3	90	110				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1205B19**
13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23345CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345						
Client ID: CCB	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502592						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1205B19**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R23446	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23446
Client ID: PBW	Batch ID: R23446	TestNo: A4500-NH3 D		Analysis Date: 05/29/12	SeqNo: 504311
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

ND 0.0200

Sample ID: R23446ICV	SampType: ICV	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23446
Client ID: ICV	Batch ID: R23446	TestNo: A4500-NH3 D		Analysis Date: 05/29/12	SeqNo: 504312
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.450 0.0200 0.5000 0 90.1 90 110

Sample ID: 1205B19-001BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23446
Client ID: Initial Sample Area	Batch ID: R23446	TestNo: A4500-NH3 D		Analysis Date: 05/29/12	SeqNo: 504314
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.438 0.0200 0.5000 0.01239 85.0 80 120

Sample ID: 1205B19-001BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23446
Client ID: Initial Sample Area	Batch ID: R23446	TestNo: A4500-NH3 D		Analysis Date: 05/29/12	SeqNo: 504315
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.430 0.0200 0.5000 0.01239 83.5 80 120 0.4375 1.71 20

Sample ID: R23446CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23446
Client ID: CCB	Batch ID: R23446	TestNo: A4500-NH3 D		Analysis Date: 05/29/12	SeqNo: 504320
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

ND 0.0200

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1205B19**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: LCS-9536	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 05/31/12	RunNo: 23531
Client ID: LCSW	Batch ID: 9536	TestNo: A4500-P BE A4500-P BE		Analysis Date: 05/31/12	SeqNo: 505651
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0517	0.0120	0.05000	0	103 85 115

Sample ID: MB-9536	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 05/31/12	RunNo: 23531
Client ID: PBW	Batch ID: 9536	TestNo: A4500-P BE A4500-P BE		Analysis Date: 05/31/12	SeqNo: 505652
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	ND	0.0120			
Total Phosphorus(as PO4)	ND	0.0367			

Sample ID: 1205B19-001BMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 05/31/12	RunNo: 23531
Client ID: Initial Sample Area	Batch ID: 9536	TestNo: A4500-P BE A4500-P BE		Analysis Date: 05/31/12	SeqNo: 505654
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0564	0.0120	0.05000	0.007525	97.7 80 120

Sample ID: 1205B19-001BMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 05/31/12	RunNo: 23531
Client ID: Initial Sample Area	Batch ID: 9536	TestNo: A4500-P BE A4500-P BE		Analysis Date: 05/31/12	SeqNo: 505655
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0558	0.0120	0.05000	0.007525	96.5 80 120 0.05638 1.07 13.7

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1205B19**
13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R23384	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23384
Client ID: PBW	Batch ID: R23384	TestNo: A2540D		Analysis Date: 05/25/12	SeqNo: 503634
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Residue, Non-Filterable	ND	1.00			

Sample ID: 1205B73-001ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23384
Client ID: ZZZZZZ	Batch ID: R23384	TestNo: A2540D		Analysis Date: 05/25/12	SeqNo: 503642
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Residue, Non-Filterable	26.0	10.0			28.00 7.41 10

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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CHAIN OF CUSTODY RECORD

Electronic Version

Company Name: Ryba Marine Construction Co.
 Company Address: 629 N. Main Street / PO Box 265
 City: Cheboygan State: MI Zip: 49721
 Phone: 231-627-4333 Fax: 231-627-4890 Fax Report
 Email Address: wmoon@rybamarine.com Email Report
 Project ID / Location: Waukegan Harbor Dredging FY11
 Project Manager (Report to): Wayne Moon
 Sample Collector(s): Patricil Rodriguez

TURNAROUND TIME REQUESTED
 Normal RUSH* *Additional Rush Charges Approved.
 *Date & Time Needed:
 Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.
 Specify Regulatory Program: (Required) None/Info only
 LUST SRP SDWA
 503 Sludge NPDES MWRDGC
 Disposal Other *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED
 Enter an "X" in box below for request

TSS	Chloride	Ammonia	Phosphorus	Hardness
X	X			
		X	X	
			X	

Page 1 of 1
 PO No.
 Shipping Method: SLI
 QC Reporting Level: 1 2 3
LAB USE ONLY
 SLI Order No: 1005B19
 Sample containers supplied by customer? Yes
 Temperature of Received Samples: 4 °C
 Samples received within 24 hours of collection? Yes

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	R	Condition	Split	LAB #
	DATE	TIME			Qty	SIZE & TYPE										
1 Initial Sample Area <u>1/2</u> - Surface	<u>5/23/12</u>	<u>10:15</u>	SW	G	1	ILP	none	X	X							-001A
2 ↓					1	ILP	H2SO4			X	X					-001B
3 ↓					1	500p	HNO3				X					-001C
4 ↓																
5 Initial Sample Area <u>1/2</u> - Mid-depth	<u>5/23/12</u>	<u>10:26</u>	SW	G	1	ILP	none	X	X							-002A
6 ↓					1	ILP	H2SO4			X	X					-002B
7 ↓					1	500p	HNO3				X					-002C
8 ↓																
9 Blind Duplicate	<u>5/23/12</u>	<u>10:36</u>	SW	G	1	ILP	none	X	X							-003A
10 ↓					1	ILP	H2SO4			X	X					-003B
11 ↓					1	500p	HNO3				X					-003C
12 ↓																

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H₂SO₄, HCl, HNO₃, Methanol (MeOH), NaOH, Sodium Bisulfate (NaB), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:
 * Chicago District USACE - Waukegan Harbor Approach Channel Dredging Project FY11

- CONDITION CODES**
1. Improper/damaged container/cap
 2. Improper preservation
 3. Insufficient sample volume
 4. Headspace/air bubbles for VOCs
 5. Received past holding time
 6. Received frozen
 7. Label conflicts with COC

1. Relinquished By	Date: <u>5/23/12</u>	2. Relinquished By: <u>Patricil Rodriguez</u>	Date: <u>5/23/12</u>	3. Relinquished By	Date	4. Relinquished By	Date
Received By: <u>Patricil Rodriguez</u>	Time: <u>12:12</u>	Received By: <u>Patricil Rodriguez</u>	Time: <u>11:30</u>	Received By	Time	Received By	Time



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Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
Initial water sampling

Suburban Labs Field Sampling Technician(s) - PRINT: <i>Patrick Rodriguez</i> <i>PTT</i> <i>IRACOM</i>			
Luedtke Engineering Rep. - PRINT: <i>Wayne Moon</i>			
Weather and water conditions: <i>clear & calm</i>		Placement area (circle): <i>(1)</i> 2	
Eutech Inst. Orion Field pH Meter, pHTestr 30 Serial No.: <i>Thermo Orion 5-Star, pH, ISE, Cond, DO, Portable</i> <i>A10350</i>			
	Initial Surface	Initial Mid-depth	Blind Duplicate
Sampling Technique:	grab	Kemmerer - grab	grab
GPS coordinate (Lat./Long.) of sample collection: ¹	<i>1173540 E</i>	<i>2068843 N</i>	
GPS coordinate (state plane) of sample collection: ¹			
Water column depth to the nearest foot: ¹	<i>14''</i>		
Sampling depth to the nearest foot: (enter zero for surface water samples)	<i>0</i>	<i>7'</i>	<i>7'</i>
Date & Time of collection:	<i>5/23/12</i>	<i>5/23/12</i>	<i>5/23/12</i>
Sample appearance: (clear, tinted, dark, etc..)	<i>clear</i>	<i>CLEAR</i>	<i>CLEAR</i>
pH & Time of reading:	<i>7.3^{8:53} 10:15</i>	<i>7.99 10:26</i>	<i>7.71 10:36</i>
Temperature (degrees C):	<i>15.1</i>	<i>14.4</i>	<i>14.3</i>
Blind Duplicate sample ID:			<i>15A2M</i>
Comments:			

See also chain of custody form for bottles and preservatives

Version 0 06/16/2010

SIGNATURES:

SLI Field Tech 1:

Patrick Rodriguez

SLI Field Tech 2:

[Signature]



July 13, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1206054

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 3 sample(s) on 06/02/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,



Melissa Amador
Project Manager





Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

Case Narrative

Client: Ryba Marine Construction Co.

Date: July 13, 2012

Project: Waukegan Harbor Approach Channel Dredging

PO #:

WorkOrder: 1206054

QC Level:

Temperature of samples upon receipt at SLI: 4 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206054

Client Sample ID: Blind Duplicate

Matrix: SURFACE WATER

Lab ID: 1206054-003

Date Received: 06/02/2012 5:30 PM

Collection Date: 06/02/2012 3:12 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	7.82	0.500		mg/L	1	06/04/2012 12:11 PM	R23621
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.54			pH			
Temperature	14.8			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	136	0.050	c	mg/L	1	06/06/2012 10:30 AM	9619
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0115	0.0100	J	mg/L	1	06/06/2012 5:45 PM	R23720
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0122	0.00500		mg/L	1	06/05/2012 1:56 PM	9602
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	06/05/2012 3:00 PM	R23661

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 13, 2012
Lab Order: 1206054

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1206054-001B	06/02/12 2:59:00 PM	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206054-001C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206054-002B	06/02/12 3:08:00 PM	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206054-002C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206054-003B	06/02/12 3:12:00 PM	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206054-003C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12



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QC SUMMARY REPORT

WO#: **1206054**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23621CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621
Client ID: CCB	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507381
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: R23621CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621
Client ID: CCV	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507382
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	103	5.00	100.0	0	103 90 110
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Sample ID: R23621ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621
Client ID: ICV	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507383
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	101	5.00	100.0	0	101 90 110
----------	-----	------	-------	---	------------

Sample ID: MB-R23621	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621
Client ID: PBW	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507384
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: LCS-R23621	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621
Client ID: LCSW	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507385
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	102	5.00	100.0	0	102 85 115
----------	-----	------	-------	---	------------

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1206054
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23621CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCV	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507392						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	105	5.00	100.0	0	105	90	110				

Sample ID: R23621CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCB	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507393						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R23621CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCV	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507404						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	105	5.00	100.0	0	105	90	110				

Sample ID: R23621CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCB	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507405						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R23621CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCV	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507412						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98.7	5.00	100.0	0	98.7	90	110				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206054**

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23621CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCB	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507413						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206054**

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R23720	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720
Client ID: PBW	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509731
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	ND	0.0200			

Sample ID: R23720ICV	SampType: ICV	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720
Client ID: ICV	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509732
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.496	0.0200	0.5000	0	99.2 90 110

Sample ID: 1206054-001BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720
Client ID: Initial Sample Area	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509734
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.486	0.0200	0.5000	0.05858	85.5 80 120

Sample ID: 1206054-001BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720
Client ID: Initial Sample Area	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509735
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.486	0.0200	0.5000	0.05858	85.5 80 120 0.4859 0 20

Sample ID: BLK	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720
Client ID: PBW	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509770
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	ND	0.0200			

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206054**

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: BLK	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720						
Client ID: PBW	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509781						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	ND	0.0200									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206054**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: LCS-9602	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656
Client ID: LCSW	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508065
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) 0.0540 0.0120 0.05000 0 108 85 115

Sample ID: MB-9602	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656
Client ID: PBW	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508066
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) ND 0.0120

Sample ID: 1206054-001BMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656
Client ID: Initial Sample Area	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508085
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) 0.0534 0.0120 0.05000 0 107 80 120

Sample ID: 1206054-001BMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656
Client ID: Initial Sample Area	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508086
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) 0.0506 0.0120 0.05000 0 101 80 120 0.05345 5.58 13.7

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206054**
13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R23661	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23661						
Client ID: PBW	Batch ID: R23661	TestNo: A2540D		Analysis Date: 06/05/12	SeqNo: 508847						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	ND	1.00									

Sample ID: 1206049-001ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23661						
Client ID: ZZZZZZ	Batch ID: R23661	TestNo: A2540D		Analysis Date: 06/05/12	SeqNo: 508864						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	68.0	10.0						74.00	8.45	10	

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



SUBURBAN LABORATORIES, Inc.

4140 Litt Drive Hillside, IL 60162

Tel. 708.544.3260

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Toll Free: 800.783.LABS

www.suburbanlabs.com

CHAIN OF CUSTODY RECORD

Electronic Version

Company Name: **Ryba Marine**

Company Address: **629 N. Main Street / PO Box 265**

City: **Cheboygan** State: **MI** Zip: **49721**

Phone: _____ Fax: _____ Fax Report

Email Address: _____ Email Report

Project ID / Location: **Waukegan Harbor Dredging FY11**

Project Manager (Report to): **Wayne Moon**

Sample Collector(s): **Patrick Rodriguez**

TURNAROUND TIME REQUESTED

Normal RUSH* *Additional Rush Charges Approved.

*Date & Time Needed:
Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.

Specify Regulatory Program: (Required) None/Info only

LUST SRP SDWA
 503 Sludge NPDES MWRDGC
 Disposal Other *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED

Enter an "X" in box below for request

TSS	Chloride	Ammonia	Phosphorus	Hardness
X	X			
		X	X	
				X
		X	X	
				X
		X	X	
				X

Page 1 of 1

PO No. _____

Shipping Method: **SLI**

QC Reporting Level: 1 2 3

LAB USE ONLY

SLI Order No. **120160054**

Sample containers supplied by customer? Yes

Temperature of Received Samples: **4** °C

Samples received within 24 hours of collection? Yes

R	Condition	Split	LAB #
			-001A
			-001B
			-001C
			-002A
			-002B
			-002C
			-003A
			-003B
			-003C MA

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	R	Condition	Split	LAB #
	DATE	TIME			Qty	SIZE & TYPE										
1 Initial Sample Area 2 - Surface	6/21/12	14:59	SW	G	1	1LP	none	X	X							-001A
2 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X					-001B
3 ↓	↓	↓	↓	↓	1	500p	HNO3					X				-001C
4 ↓	↓	↓	↓	↓												
5 Initial Sample Area 2 - Mid-depth	6/21/12	15:08	SW	G	1	1LP	none	X	X							-002A
6 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X					-002B
7 ↓	↓	↓	↓	↓	1	500p	HNO3					X				-002C
8 ↓	↓	↓	↓	↓												
9 Blind Duplicate	6/21/12	15:12	SW	G	1	1LP	none	X	X							-003A
10 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X					-003B
11 ↓	↓	↓	↓	↓	1	500p	HNO3					X				-003C MA
12 ↓	↓	↓	↓	↓												

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H₂SO₄, HCl, HNO₃, Methanol (MeOH), NaOH, Sodium Bisulfate (NaBS), Na Thio

COMMENTS & SPECIAL INSTRUCTIONS:

* Chicago District USACE - Waukegan Harbor Approach Channel Dredging project 2010

- CONDITION CODES**
- Improper/damaged container/cap
 - Improper preservation
 - Insufficient sample volume
 - Headspace/air bubbles for VOCs
 - Received past holding time
 - Received frozen
 - Label conflicts with COC

1. Relinquished By: <i>[Signature]</i> Date: 6/21/12	2. Relinquished By: _____ Date: _____	3. Relinquished By: _____ Date: _____	4. Relinquished By: _____ Date: _____
Received By: <i>[Signature]</i> Time: 17:30 <input checked="" type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice



Suburban Laboratories, Inc.

4140 Litt Drive
Hillside, IL 60162-1183
P: (708) 544-3260 F: (708) 544-8587
www.SuburbanLabs.com

Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
Initial water sampling

Suburban Labs Field Sampling Technician(s) - PRINT: <i>Patrick Rodriguez</i>			
Luedtke Engineering Rep. - PRINT: <i>Ryba Wayne Moon</i>			
Weather and water conditions: <i>Clear + Windy</i>			Placement area (circle): <i>1</i> <i>2</i>
Eutech Inst. Oakton Field pH Meter, pHTestr-30 Serial No.: Thermo Orion 5-Star pH-ISE Cond. Do Portable <i>A 10350</i>			
	Initial Surface	Initial Mid-depth	Blind Duplicate
Sampling Technique:	grab	Kemmerer - grab	grab
GPS coordinate (Lat./Long.) of sample collection: ¹			
GPS coordinate (state plane) of sample collection: ¹	<i>E 113033265 N 2117348</i>		
Water column depth to the nearest foot: ¹	<i>28</i>		
Sampling depth to the nearest foot: (enter zero for surface water samples)	<i>0</i>	<i>14</i>	<i>0</i>
Date & Time of collection:	<i>6/12/12 14:59</i>	<i>6/12/12 15:08</i>	<i>6/12/12 15:12</i>
Sample appearance: (clear, tinted, dark, etc..)	<i>clear</i>	<i>clear</i>	<i>clear</i>
pH & Time of reading:	<i>8.55 14:59</i>	<i>8.56 15:08</i>	<i>8.54 15:12</i>
Temperature (degrees C):	<i>15.1</i>	<i>14.0</i>	<i>14.8</i>
Blind Duplicate sample ID:			
Comments:			

Version 0 06/16/2010

See also chain of custody form for bottles and preservatives

SIGNATURES:

SLI Field Tech 1: *Patrick Rodriguez*

SLI Field Tech 2: _____



July 13, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1206055

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 7 sample(s) on 06/02/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,



Melissa Amador
Project Manager





Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

Case Narrative

Client: Ryba Marine Construction Co.

Date: July 13, 2012

Project: Waukegan Harbor Approach Channel Dredging

PO #:

WorkOrder: 1206055

QC Level:

Temperature of samples upon receipt at SLI: 4 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206055

Client Sample ID: 1hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206055-001

Date Received: 06/02/2012 5:30 PM

Collection Date: 06/02/2012 10:17 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	7.97	0.500		mg/L	1	06/04/2012 12:11 PM	R23621
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.48			pH			
Temperature	14.2			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	142	0.050	c	mg/L	1	06/06/2012 10:30 AM	9619
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0109	0.0100	J	mg/L	1	06/06/2012 5:45 PM	R23720
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0180	0.00500		mg/L	1	06/05/2012 1:56 PM	9602
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	4.40	0.400		mg/L	1	06/05/2012 3:00 PM	R23661

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206055

Client Sample ID: 1hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206055-002

Date Received: 06/02/2012 5:30 PM

Collection Date: 06/02/2012 10:23 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.53	0.500		mg/L	1	06/04/2012 12:11 PM	R23621
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.33			pH			
Temperature	13.4			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	139	0.050	c	mg/L	1	06/06/2012 10:30 AM	9619
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0117	0.0100	J	mg/L	1	06/06/2012 5:45 PM	R23720
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00985	0.00500	J	mg/L	1	06/05/2012 1:56 PM	9602
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	2.80	0.400		mg/L	1	06/05/2012 3:00 PM	R23661

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206055

Client Sample ID: 4hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206055-004

Date Received: 06/02/2012 5:30 PM

Collection Date: 06/02/2012 1:02 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.59	0.500		mg/L	1	06/04/2012 12:11 PM	R23621
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.48			pH			
Temperature	14.0			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	136	0.050	c	mg/L	1	06/06/2012 10:30 AM	9619
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0160	0.0100	J	mg/L	1	06/06/2012 5:45 PM	R23720
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00870	0.00500	J	mg/L	1	06/05/2012 1:56 PM	9602
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	1.60	0.400	J	mg/L	1	06/05/2012 3:00 PM	R23661

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206055

Client Sample ID: 1000' Upstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206055-005

Date Received: 06/02/2012 5:30 PM

Collection Date: 06/02/2012 10:44 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.86	0.500		mg/L	1	06/04/2012 12:11 PM	R23621
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.44			pH			
Temperature	14.4			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO3)	137	0.050	c	mg/L	1	06/06/2012 10:30 AM	9619
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH3 F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0213	0.0100		mg/L	1	06/06/2012 5:45 PM	R23720
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0221	0.00500		mg/L	1	06/05/2012 1:56 PM	9602
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	1.60	0.400	J	mg/L	1	06/05/2012 3:00 PM	R23661

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206055

Client Sample ID: Blind Duplicate

Matrix: SURFACE WATER

Lab ID: 1206055-007

Date Received: 06/02/2012 5:30 PM

Collection Date: 06/02/2012 10:27 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE							
Chloride	9.59	0.500		mg/L	1	06/04/2012 12:11 PM	R23621
FIELD PARAMETERS							
pH, Field	8.38			pH			
Temperature	13.6			C			
HARDNESS, TOTAL							
Hardness, Ca/Mg (As CaCO3)	138	0.050	c	mg/L	1	06/06/2012 10:30 AM	9619
AMMONIA, BY SELECTIVE ELECTRODE							
Nitrogen, Ammonia (As N)	0.0102	0.0100	J	mg/L	1	06/06/2012 5:45 PM	R23720
PHOSPHORUS, TOTAL							
Phosphorus (As P)	0.0180	0.00500		mg/L	1	06/05/2012 1:56 PM	9602
TOTAL SUSPENDED SOLIDS							
Residue, Non-Filterable	2.00	0.400		mg/L	1	06/05/2012 3:00 PM	R23661

- Qualifiers:**
- */x Value exceeds Maximum Contaminant Level
 - c Analyte not in SLI scope of accreditation
 - G Refer to case narrative page for specific comments
 - J Analyte detected below quantitation limit (QL)
 - ND Not Detected at the Reporting Limit
 - S Spike Recovery outside accepted recovery limits
 - B Analyte detected in the associated Method Blank
 - E Estimated, detected above quantitation range
 - H Holding times for preparation or analysis exceeded
 - N Tentatively identified compounds
 - R RPD outside accepted recovery limits



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 13, 2012
Lab Order: 1206055

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1206055-001B	06/02/12 10:17:00 A	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206055-001C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206055-002B	06/02/12 10:23:00 A	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206055-002C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206055-003B	06/02/12 12:56:00 P	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206055-003C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206055-004B	06/02/12 1:02:00 PM	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206055-004C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206055-005B	06/02/12 10:44:00 A	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206055-005C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206055-006B	06/02/12 10:48:00 A	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206055-006C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206055-007B	06/02/12 10:27:00 A	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206055-007C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12



Suburban Laboratories, Inc.
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 Hillside, IL 60162
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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1206055
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23621CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621
Client ID: CCB	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507381
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: R23621CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621
Client ID: CCV	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507382
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	103	5.00	100.0	0	103 90 110
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Sample ID: R23621ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621
Client ID: ICV	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507383
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	101	5.00	100.0	0	101 90 110
----------	-----	------	-------	---	------------

Sample ID: MB-R23621	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621
Client ID: PBW	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507384
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
----------	----	------	--	--	--

Sample ID: LCS-R23621	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621
Client ID: LCSW	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507385
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	102	5.00	100.0	0	102 85 115
----------	-----	------	-------	---	------------

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1206055
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23621CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCV	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507392						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	105	5.00	100.0	0	105	90	110				

Sample ID: R23621CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCB	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507393						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R23621CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCV	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507404						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	105	5.00	100.0	0	105	90	110				

Sample ID: R23621CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCB	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507405						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R23621CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCV	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507412						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98.7	5.00	100.0	0	98.7	90	110				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



Suburban Laboratories, Inc.
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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: **1206055**

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23621CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: CCB	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507413						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1206055

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R23720	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720
Client ID: PBW	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509731
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	ND	0.0200			

Sample ID: R23720ICV	SampType: ICV	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720
Client ID: ICV	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509732
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.496	0.0200	0.5000	0	99.2 90 110

Sample ID: 1206054-001BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720
Client ID: ZZZZZ	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509734
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.486	0.0200	0.5000	0.05858	85.5 80 120

Sample ID: 1206054-001BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720
Client ID: ZZZZZ	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509735
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.486	0.0200	0.5000	0.05858	85.5 80 120 0.4859 0 20

Sample ID: BLK	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720
Client ID: PBW	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509770
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	ND	0.0200			

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



Suburban Laboratories, Inc.
 4140 Litt Dr
 Hillside, IL 60162
 TEL: 708-544-3260 FAX: 708-544-8587
 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: **1206055**

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: BLK	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720						
Client ID: PBW	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509781						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	ND	0.0200									

Qualifiers:	%X Value exceeds Maximum Contaminant Level	E Estimated, detected above quantitation range	H Holding times for preparation or analysis exceed
	M Manual Integration used to determine area response	ND Not Detected at the Reporting Limit	P Second column confirmation exceeds
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206055**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: LCS-9602	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656						
Client ID: LCSW	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508065						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	0.0540	0.0120	0.05000	0	108	85	115				

Sample ID: MB-9602	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656						
Client ID: PBW	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508066						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	ND	0.0120									

Sample ID: 1206054-001BMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656						
Client ID: ZZZZZ	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508085						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	0.0534	0.0120	0.05000	0	107	80	120				

Sample ID: 1206054-001BMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656						
Client ID: ZZZZZ	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508086						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	0.0506	0.0120	0.05000	0	101	80	120	0.05345	5.58	13.7	

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206055**
13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R23661	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23661						
Client ID: PBW	Batch ID: R23661	TestNo: A2540D		Analysis Date: 06/05/12	SeqNo: 508847						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	ND	1.00									

Sample ID: 1206049-001ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23661						
Client ID: ZZZZZZ	Batch ID: R23661	TestNo: A2540D		Analysis Date: 06/05/12	SeqNo: 508864						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	68.0	10.0						74.00	8.45	10	

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



SUBURBAN LABORATORIES, Inc.

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Fax: 708.544.8587

Toll Free: 800.783.LABS

www.suburbanlabs.com

CHAIN OF CUSTODY RECORD

Electronic Version

Company Name: **Ryba Marine**
 Company Address: **629 N. Main Street / PO Box 265**
 City: **Cheboygan** State: **MI** Zip: **49721**
 Phone: _____ Fax: _____ Fax Report
 Email Address: _____ Email Report
 Project ID / Location: **Waukegan Harbor Dredging FY11**
 Project Manager (Report to): **Wayne Moon**
 Sample Collector(s): **Francisco Rodriguez**

TURNAROUND TIME REQUESTED
 Normal RUSH* *Additional Rush Charges Approved.
 *Date & Time Needed:
 Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.
 Specify Regulatory Program: (Required) None/Info only
 LUST SRP SDWA
 503 Sludge NPDES MWRDGC
 Disposal Other *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED
 Enter an "X" in box below for request

TSS	Chloride	Ammonia	Phosphorus	Hardness
X	X	X	X	X

Page 1 of 2
 PO No. _____
 Shipping Method: **SLI**
 QC Reporting Level: 1 2 3
LAB USE ONLY
 SLI Order No. **1206055**
 Sample containers supplied by customer? Yes
 Temperature of Received Samples: **4** °C
 Samples received within 24 hours of collection? Yes

	SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	R	Condition	Split	LAB #
		DATE	TIME			Qty	SIZE & TYPE										
1	1hr-500' downstream, surface	6/7/12	10:17	SW	G	1	1LP	none	X	X							001A
2	↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X					001B
3	↓	↓	↓	↓	↓	1	500p	HNO3				X					001C
4	1hr-500' downstream, mid-depth	6/7/12	10:23	SW	G	1	1LP	none	X	X							002A
5	↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X					002B
6	↓	↓	↓	↓	↓	1	500p	HNO3				X					002C
7	4hr-500' downstream, surface	6/7/12	10:56	SW	G	1	1LP	none	X	X							003A
8	↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X					003B
9	↓	↓	↓	↓	↓	1	500p	HNO3				X					003C
10	4hr-500' downstream, mid-depth	6/7/12	13:07	SW	G	1	1LP	none	X	X							004A
11	↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X					004B
12	↓	↓	↓	↓	↓	1	500p	HNO3				X					004C

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H₂SO₄, HCl, HNO₃, Methanol (MeOH), NaOH, Sodium Bisulfate (NAB), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:
 * Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11

- CONDITION CODES**
1. Improper/damaged container/cap
 2. Improper preservation
 3. Insufficient sample volume
 4. Headspace/air bubbles for VOCs
 5. Received past holding time
 6. Received frozen
 7. Label conflicts with COC

1. Relinquished By: <i>Francisco Rodriguez</i> Date: 6/7/12	2. Relinquished By: _____ Date: _____	3. Relinquished By: _____ Date: _____	4. Relinquished By: _____ Date: _____
Received By: <i>Theresa Amador</i> Time: 17:30 <input checked="" type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice



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CHAIN OF CUSTODY RECORD

Electronic Version

Company Name Ryba Marine		TURNAROUND TIME REQUESTED <input checked="" type="checkbox"/> Normal <input type="checkbox"/> RUSH* *Additional Rush Charges Approved.		ANALYSIS & METHOD REQUESTED Enter an "X" in box below for request		Page 2 of 2											
Company Address 629 N. Main Street / PO Box 265		<input type="checkbox"/> Date & Time Needed: Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.		<table border="1"> <tr><td>TSS</td><td></td></tr> <tr><td>Chloride</td><td></td></tr> <tr><td>Ammonia</td><td></td></tr> <tr><td>Phosphorus</td><td></td></tr> <tr><td>Hardness</td><td></td></tr> </table>		TSS		Chloride		Ammonia		Phosphorus		Hardness		PO No.	
TSS																	
Chloride																	
Ammonia																	
Phosphorus																	
Hardness																	
City State Zip Cheboygan MI 49721		Specify Regulatory Program: (Required) <input type="checkbox"/> None/Info only		Shipping Method SLI		QC Reporting Level <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3											
Phone Fax <input type="checkbox"/> Fax Report		<input type="checkbox"/> LUST <input type="checkbox"/> SRP <input type="checkbox"/> SDWA		LAB USE ONLY		SLI Order No. 1306055											
Email Address <input checked="" type="checkbox"/> Email Report		<input type="checkbox"/> 503 Sludge <input type="checkbox"/> NPDES <input type="checkbox"/> MWRDGC		Sample containers supplied by customer? <input type="checkbox"/> Yes		Temperature of Received Samples 4 °C											
Project ID / Location Waukegan Harbor Dredging FY11		<input type="checkbox"/> Disposal <input checked="" type="checkbox"/> Other *Please specify in comment section below.		Samples received within 24 hours of collection? <input type="checkbox"/> Yes		R Condition Split LAB #											
Project Manager (Report to) Wayne Moon		Sample Collector(s) Patrick Rodriguez															

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness									
	DATE	TIME			Qty	SIZE & TYPE							R	Condition	Split	LAB #					
1 1000' upstream, surface	6/12/12	10:44	SW	G	1	1LP	none	X	X												
2 ↓					1	1LP	H2SO4			X	X										
3 ↓					1	500p	HNO3					X									
4 1000' upstream, mid-depth	6/12/12	10:48	SW	G	1	1LP	none	X	X												
5 ↓					1	1LP	H2SO4			X	X										
6 ↓					1	500p	HNO3					X									
7 Blind duplicate	6/12/12	10:57	SW	G	1	1LP	none	X	X												
8 ↓					1	1LP	H2SO4			X	X										
9 ↓					1	500p	HNO3					X									
10																					
11																					
12																					

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) CONTAINER: 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) PRESERVATIVE: H ₂ SO ₄ , HCl, HNO ₃ , Methanol (MeOH), NaOH, Sodium Bisulfate (NaB), NaThio	COMMENTS & SPECIAL INSTRUCTIONS: * Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11				CONDITION CODES 1. Improper/damaged container/cap 2. Improper preservation 3. Insufficient sample volume 4. Headspace/air bubbles for VOCs 5. Received past holding time 6. Received frozen 7. Label conflicts with COC			
	1. Relinquished By <i>Patrick Rodriguez</i> Date 6/12/12		2. Relinquished By _____ Date _____		3. Relinquished By _____ Date _____		4. Relinquished By _____ Date _____	
Received By <i>Patricia Amador</i> <input checked="" type="checkbox"/> Ice Time 17:30		Received By _____ <input type="checkbox"/> Ice Time _____		Received By _____ <input type="checkbox"/> Ice Time _____		Received By _____ <input type="checkbox"/> Ice Time _____		

Submission of samples subject to Terms and Conditions on back. Rev. 2/01/05 Please fill out this form completely, print, sign & submit with samples. Keep a copy for your records.



Suburban Laboratories, Inc.

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Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Suburban Labs. Field Sampling Technician(s) - PRINT: <i>Patrick Rodriguez</i>		Placement area (circle): <i>1 2</i>		Eutech Inst. Oakton Field pH Meter, pH Testr 30 Serial No.: TIEMNO Orion 5-Star PA-15E COND-DD <i>PORTABLE</i> <i>A10350</i>
Luedtke Engineering Rep. - PRINT: <i>Ryba Wayne Moon</i>		GPS coordinates of discharge point: ¹ 4220.663 8748.968 <i>1123900E 2067700N</i>		Scow name and quantity of discharge: ¹ <i>CT252 702 c.y.</i>
Weather and water conditions: <i>Clear + calm Windy</i>		Date of Discharge: <i>6/2/12</i>		Time of Discharge: ¹ <i>8:25</i>
	1hr-500' downstream Surface	1hr-500' downstream Mid-depth	4hr-500' downstream Surface	4hr-500' downstream Mid-depth
Sampling Technique:	grab	Kemmerer - grab	grab	Kemmerer - grab
GPS coordinate (Lat./Long.) of sample collection: ¹				
GPS coordinate (state plane) of sample collection: ¹	<i>1123900E 2067200N</i>		<i>1123900E 2067200N</i>	
Water column depth to the nearest foot: ¹	<i>20'</i>		<i>20'</i>	
Sampling depth to the nearest foot: (enter zero for surface water samples)	<i>0</i>	<i>10'</i>	<i>0</i>	<i>10'</i>
Date & Time of collection:	<i>6/2/12 10:17</i>	<i>6/2/12 10:23</i>	<i>6/2/12 12:56</i>	<i>6/2/12 13:02</i>
Sample appearance: (clear, tinted, dark, etc..)	<i>Clear</i>	<i>Clear</i>	<i>Clear</i>	<i>Clear</i>
pH & Time of reading:	<i>8.48 10:17</i>	<i>8.33 10:23</i>	<i>8.47 12:56</i>	<i>8.48 13:02</i>
Temperature (degrees C):	<i>14.2°C</i>	<i>13.4°C</i>	<i>15.0°C</i>	<i>14.0°C</i>
Comments:				

See also chain of custody form for bottles and preservatives



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Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Date of Discharge: <u>6/2/12</u>				
	1000' upstream Surface	1000' upstream Mid-depth	Blind Duplicate	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab		
GPS coordinate (Lat./Long.) of sample collection: ¹				
GPS coordinate (state plane) of sample collection: ¹	1173900 E	2068700 N	1173900 E 2067800 N	
Water column depth to the nearest foot: ¹	15		20'	
Sampling depth to the nearest foot: (enter zero for surface water samples)	0	7	0	
Date & Time of collection:	6/2/12 10:44	6/2/12 10:48	6/2/12 10:27	
Sample appearance: (clear, tinted, dark, etc..)	Clear	Clear	Clear	
pH & Time of reading:	8.44 10:44	8.47 10:48	8.38 10:27	
Temperature (degrees C):	14.4°C	13.7°C	13.6°C	
Blind Duplicate sample ID:				
Comments:				

See also chain of custody form for bottles and preservatives

Version 0 06/16/2010

SIGNATURES:

SLI Field Tech 1: *Tamm Rodgers*

SLI Field Tech 2: _____



July 13, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1206057

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 7 sample(s) on 06/04/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,



Melissa Amador
Project Manager





Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

Case Narrative

Client: Ryba Marine Construction Co.

Date: July 13, 2012

Project: Waukegan Harbor Approach Channel Dredgin

PO #:

WorkOrder: 1206057

QC Level:

Temperature of samples upon receipt at SLI: 4 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206057

Client Sample ID: 1hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206057-002

Date Received: 06/04/2012 7:55 AM

Collection Date: 06/03/2012 4:51 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	12.7	0.500		mg/L	1	06/04/2012 12:11 PM	R23621
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.60			pH			
Temperature	15.0			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	140	0.050	c	mg/L	1	06/06/2012 10:30 AM	9619
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0129	0.0100	J	mg/L	1	06/06/2012 5:45 PM	R23720
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0215	0.00500		mg/L	1	06/05/2012 1:56 PM	9602
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	1.60	0.400	J	mg/L	1	06/05/2012 3:15 PM	R23663

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206057

Client Sample ID: 4hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206057-003

Date Received: 06/04/2012 7:55 AM

Collection Date: 06/03/2012 7:42 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.80	0.500		mg/L	1	06/04/2012 12:11 PM	R23621
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.60			pH			
Temperature	16.7			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO3)	140	0.050	c	mg/L	1	06/06/2012 10:30 AM	9619
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH3 F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0148	0.0100	J	mg/L	1	06/06/2012 5:45 PM	R23720
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00870	0.00500	J	mg/L	1	06/05/2012 1:56 PM	9602
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	06/05/2012 3:15 PM	R23663

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206057

Client Sample ID: 4hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206057-004

Date Received: 06/04/2012 7:55 AM

Collection Date: 06/03/2012 7:48 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.1	0.500		mg/L	1	06/04/2012 12:11 PM	R23621
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.61			pH			
Temperature	15.0			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	132	0.050	c	mg/L	1	06/06/2012 10:30 AM	9619
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0134	0.0100	J	mg/L	1	06/06/2012 5:45 PM	R23720
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00695	0.00500	J	mg/L	1	06/05/2012 1:56 PM	9602
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	ND	0.400		mg/L	1	06/05/2012 3:15 PM	R23663

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206057

Client Sample ID: 1000' Upstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206057-005

Date Received: 06/04/2012 7:55 AM

Collection Date: 06/03/2012 6:55 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.6	0.500		mg/L	1	06/04/2012 12:11 PM	R23621
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.60			pH			
Temperature	16.9			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	135	0.050	c	mg/L	1	06/06/2012 10:30 AM	9619
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0218	0.0100		mg/L	1	06/06/2012 5:45 PM	R23720
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0110	0.00500	J	mg/L	1	06/05/2012 1:56 PM	9602
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	06/05/2012 3:15 PM	R23663

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206057

Client Sample ID: 1000' Upstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206057-006

Date Received: 06/04/2012 7:55 AM

Collection Date: 06/03/2012 7:00 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.86	0.500		mg/L	1	06/04/2012 12:11 PM	R23621
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.60			pH			
Temperature	14.9			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	134	0.050	c	mg/L	1	06/06/2012 10:30 AM	9619
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0173	0.0100	J	mg/L	1	06/06/2012 5:45 PM	R23720
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00580	0.00500	J	mg/L	1	06/05/2012 1:56 PM	9602
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	06/05/2012 3:15 PM	R23663

- | | |
|---|---|
| <p>Qualifiers:</p> <ul style="list-style-type: none"> */x Value exceeds Maximum Contaminant Level c Analyte not in SLI scope of accreditation G Refer to case narrative page for specific comments J Analyte detected below quantitation limit (QL) ND Not Detected at the Reporting Limit S Spike Recovery outside accepted recovery limits | <ul style="list-style-type: none"> B Analyte detected in the associated Method Blank E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded N Tentatively identified compounds R RPD outside accepted recovery limits |
|---|---|



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 13, 2012
Lab Order: 1206057

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1206057-001B	06/03/12 4:44:00 PM	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206057-001C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206057-002B	06/03/12 4:51:00 PM	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206057-002C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206057-003B	06/03/12 7:42:00 PM	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206057-003C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206057-004B	06/03/12 7:48:00 PM	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206057-004C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206057-005B	06/03/12 6:55:00 PM	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206057-005C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206057-006B	06/03/12 7:00:00 PM	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206057-006C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12
1206057-007B	06/03/12 7:05:00 PM	9602	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/05/12
1206057-007C		9619	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/05/12



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QC SUMMARY REPORT

WO#: 1206057

12-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: MB-R23621	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: PBW	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507384						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: LCS-R23621	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23621						
Client ID: LCSW	Batch ID: R23621	TestNo: A4500-CI- E		Analysis Date: 06/04/12	SeqNo: 507385						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	102	5.00	100.0	0	102	85	115				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1206057

12-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R23720	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720						
Client ID: PBW	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509731						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) ND 0.0200

Sample ID: 1206054-001BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720						
Client ID: ZZZZZ	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509734						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) 0.486 0.0200 0.5000 0.05858 85.5 80 120

Sample ID: 1206054-001BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720						
Client ID: ZZZZZ	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509735						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) 0.486 0.0200 0.5000 0.05858 85.5 80 120 0.4859 0 20

Sample ID: BLK	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720						
Client ID: PBW	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509770						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) ND 0.0200

Sample ID: BLK	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23720						
Client ID: PBW	Batch ID: R23720	TestNo: A4500-NH3 D		Analysis Date: 06/06/12	SeqNo: 509781						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) ND 0.0200

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206057**
 12-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: LCS-9602	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656						
Client ID: LCSW	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508065						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	0.0540	0.0120	0.05000	0	108	85	115				

Sample ID: MB-9602	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656						
Client ID: PBW	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508066						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	ND	0.0120									

Sample ID: 1206054-001BMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656						
Client ID: ZZZZZ	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508085						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	0.0534	0.0120	0.05000	0	107	80	120				

Sample ID: 1206054-001BMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/05/12	RunNo: 23656						
Client ID: ZZZZZ	Batch ID: 9602	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/05/12	SeqNo: 508086						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	0.0506	0.0120	0.05000	0	101	80	120	0.05345	5.58	13.7	

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206057**
12-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R23663	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23663						
Client ID: PBW	Batch ID: R23663	TestNo: A2540D		Analysis Date: 06/05/12	SeqNo: 508931						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	ND	1.00									

Sample ID: 1206090-006ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23663						
Client ID: ZZZZZZ	Batch ID: R23663	TestNo: A2540D		Analysis Date: 06/05/12	SeqNo: 508947						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	175	25.0						170.0	2.90	10	

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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CHAIN OF CUSTODY RECORD

#

Electronic Version

Company Name: **Ryba Marine**

Company Address: **629 N. Main Street / PO Box 265**

City: **Cheboygan** State: **MI** Zip: **49721**

Phone: _____ Fax: Fax Report

Email Address: Email Report

Project ID / Location: **Waukegan Harbor Dredging FY11**

Project Manager (Report to): **Wayne Moon**

Sample Collector(s): **Pat Irelan**

TURNAROUND TIME REQUESTED

Normal RUSH* *Additional Rush Charges Approved.

*Date & Time Needed:

Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.

Specify Regulatory Program: (Required) None/Info only

LUST SRP SDWA

503 Sludge NPDES MWRDGC

Disposal Other *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED

Enter an "X" in box below for request

TSS	Chloride	Ammonia	Phosphorus	Hardness
X	X			
		X	X	
				X
		X	X	
				X
	X	X		
				X
		X	X	
				X

Page 1 of 2

PO No. _____

Shipping Method: **SLI**

QC Reporting Level: 1 2 3

LAB USE ONLY

SLI Order No. **1206057**

Sample containers supplied by customer? Yes

Temperature of Received Samples: **4** °C

Samples received within 24 hours of collection? Yes

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	R	Condition	Split	LAB #
	DATE	TIME			Qty	SIZE & TYPE										
1 1hr-500' downstream, surface	6/3/12	4:47 pm	SW	G	1	1LP	none	X	X							-001A
2 ↓					1	1LP	H2SO4			X	X					-001B
3 ↓					1	500p	HNO3					X				-001C
4 1hr-500' downstream, mid-depth	6/3/12	4:51 pm	SW	G	1	1LP	none	X	X							-002A
5 ↓					1	1LP	H2SO4			X	X					-002B
6 ↓					1	500p	HNO3					X				-002C
7 4hr-500' downstream, surface	6/3/12	7:42 pm	SW	G	1	1LP	none	X	X							-003A
8 ↓					1	1LP	H2SO4			X	X					-003B
9 ↓					1	1LP	HNO3					X				-003C
10 4hr-500' downstream, mid-depth	6/3/12	7:45 pm	SW	G	1	1LP	none	X	X							-004A
11 ↓					1	1LP	H2SO4			X	X					-004B
12 ↓					1	500p	HNO3					X				-004C

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H₂SO₄, HCl, HNO₃, Methanol (MeOH), NaOH, Sodium Bisulfate (NaB), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:

* Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11

CONDITION CODES

- Improper/damaged container/cap
- Improper preservation
- Insufficient sample volume
- Headspace/air bubbles for VOCs
- Received past holding time
- Received frozen
- Label conflicts with COC

1. Relinquished By: <i>[Signature]</i> Date: 6/4/12	2. Relinquished By: <i>[Signature]</i> Date: 6/4/12	3. Relinquished By: _____ Date: _____	4. Relinquished By: _____ Date: _____
Received By: <i>[Signature]</i> Time: 6:40 <input checked="" type="checkbox"/> Ice	Received By: <i>[Signature]</i> Time: 7:45 <input checked="" type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice



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CHAIN OF CUSTODY RECORD

Electronic Version

Company Name: Ryba Marine
 Company Address: 629 N. Main Street / PO Box 265
 City: Cheboygan State: MI Zip: 49721
 Phone: Fax: Fax Report
 Email Address: Email Report
 Project ID / Location: Waukegan Harbor Dredging FY11
 Project Manager (Report to): Wayne Moon
 Sample Collector(s): *[Signature]*

TURNAROUND TIME REQUESTED
 Normal RUSH* *Additional Rush Charges Approved.
 *Date & Time Needed:
 Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.
 Specify Regulatory Program: (Required) None/Info only
 LUST SRP SDWA
 503 Sludge NPDES MWRDGC
 Disposal Other *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED
 Enter an "X" in box below for request

TSS	Chloride	Ammonia	Phosphorus	Hardness
X	X			
		X	X	
				X
X	X			
		X	X	
				X

Page 2 of 2
 PO No.
 Shipping Method: SLI
 QC Reporting Level: 1 2 3
LAB USE ONLY
 SLI Order No: 12016057
 Sample containers supplied by customer? Yes
 Temperature of Received Samples: 4 °C
 Samples received within 24 hours of collection? Yes

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	R	Condition	Split	LAB #
	DATE	TIME			Qty	SIZE & TYPE										
1 1000' upstream, surface	6/3/12	655 pm	SW	G	1	1LP	none	X	X							-005A
2					1	1LP	H2SO4			X	X					-005B
3					1	500p	HNO3					X				-005C
4 1000' upstream, mid-depth	6/3/12	700 pm	SW	G	1	1LP	none	X	X							-006A
5					1	1LP	H2SO4			X	X					-006B
6					1	500p	HNO3					X				-006C
7 Blind duplicate	6/3/12	705 pm	SW	G	1	1LP	none	X	X							-007A
8					1	1LP	H2SO4			X	X					-007B
9					1	500p	HNO3					X				-007C
10																
11																
12																

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H₂SO₄, HCl, HNO₃, Methanol (MeOH), NaOH, Sodium Bisulfate (NaB), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:
 * Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11

- CONDITION CODES**
1. Improper/damaged container/cap
 2. Improper preservation
 3. Insufficient sample volume
 4. Headspace/air bubbles for VOCs
 5. Received past holding time
 6. Received frozen
 7. Label conflicts with COC

1. Relinquished By: <i>[Signature]</i>	Date: 6/3/12	2. Relinquished By: <i>[Signature]</i>	Date: 6/3/12	3. Relinquished By: <i>[Signature]</i>	Date: 6/3/12	4. Relinquished By: <i>[Signature]</i>	Date: 6/3/12
Received By: <i>[Signature]</i>	Time: 6:42	Received By: <i>[Signature]</i>	Time: 7:55	Received By: <i>[Signature]</i>	Time: 7:55	Received By: <i>[Signature]</i>	Time: 7:55



Suburban Laboratories, Inc.

4140 Litt Drive
Hillside, IL 60162-1183
P: (708) 544-3260 F: (708) 544-8587
www.SuburbanLabs.com

Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Suburban Labs Field Sampling Technician(s) - PRINT: <i>PAI IRELAN</i>		Placement area (circle): ① 2		Eutech Inst. Oakton Field pH Meter, pHTestr 30 Serial No.: <i>Thermo Orion Star pH ICE COND DO PORTABLE A10350</i>	
Luedtke Engineering Rep. - PRINT:		GPS coordinates of discharge point: ¹ <i>E 112 36 00 N 206 7 500</i>		Scow name and quantity of discharge: ¹ <i>SCT252 1134 yds</i>	
Weather and water conditions: <i>SUNNY, WARM + CLEAR</i>		Date of Discharge: <i>6/3/12</i>		Time of Discharge: ¹ <i>3:44 pm</i>	
	1hr-500' downstream Surface	1hr-500' downstream Mid-depth	4hr-500' downstream Surface	4hr-500' downstream Mid-depth	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab	grab	Kemmerer - grab	
GPS coordinate (Lat./Long.) of sample collection: ¹	<i>E 112 36 00 N 206 7 000</i>		<i>E 112 36 00 N 206 7 000</i>		
GPS coordinate (state plane) of sample collection: ¹	<i>NAD 83</i>		<i>NAD 83</i>		
Water column depth to the nearest foot: ¹	<i>18</i>		<i>18</i>		
Sampling depth to the nearest foot: (enter zero for surface water samples)	<i>0</i>	<i>9</i>	<i>0</i>	<i>9</i>	
Date & Time of collection:	<i>6/3/12 4:44 pm</i>	<i>6/3/12 4:51 pm</i>	<i>6/3/12 7:42 pm</i>	<i>6/3/12 7:48 pm</i>	
Sample appearance: (clear, tinted, dark, etc..)	<i>CLEAR</i>	<i>CLEAR</i>	<i>CLEAR</i>	<i>CLEAR</i>	
pH & Time of reading:	<i>8.59</i>	<i>8.60</i>	<i>8.60</i>	<i>8.61</i>	
Temperature (degrees C):	<i>17.2</i>	<i>15.0</i>	<i>16.7</i>	<i>15.0</i>	
Comments:					

See also chain of custody form for bottles and preservatives



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Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
 Weekly water sampling

Date of Discharge: <u>6/3/12</u>				
	1000' upstream Surface	1000' upstream Mid-depth	Blind Duplicate	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab		
GPS coordinate (Lat./Long.) of sample collection: ¹	<u>E 1123 600 N 206° 35' 50"</u>			
GPS coordinate (state plane) of sample collection: ¹	<u>NAD-83</u>			
Water column depth to the nearest foot: ¹	<u>15</u>		<u>15</u>	
Sampling depth to the nearest foot: (enter zero for surface water samples)	<u>0</u>	<u>8</u>	<u>8</u>	
Date & Time of collection:	<u>6/3/12 6:55 pm</u>	<u>6/3/12 7:00 pm</u>	<u>6/3/12 7:05 pm</u>	
Sample appearance: (clear, tinted, dark, etc..)	<u>CLEAR</u>	<u>CLEAR</u>	<u>CLEAR</u>	
pH & Time of reading:	<u>8.60</u>	<u>8.60</u>	<u>8.60</u>	
Temperature (degrees C):	<u>16.9 14.9</u>	<u>14.9</u>	<u>14.9</u>	
Blind Duplicate sample ID:				
Comments:				

See also chain of custody form for bottles and preservatives

Version 0 06/16/2010

SIGNATURES:

SLI Field Tech 1: 

SLI Field Tech 2: _____



July 13, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1206431

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 7 sample(s) on 06/09/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,

Melissa Amador
Project Manager





Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

Case Narrative

Client: Ryba Marine Construction Co.

Date: July 13, 2012

Project: Waukegan Harbor Approach Channel Dredging

PO #:

WorkOrder: 1206431

QC Level:

Temperature of samples upon receipt at SLI: 4 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206431

Client Sample ID: 1hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206431-001

Date Received: 06/09/2012 11:30 AM

Collection Date: 06/08/2012 1:10 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	11.9	0.500		mg/L	1	06/12/2012 10:25 AM	R23882
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.58			pH			
Temperature	19.2			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO3)	123	0.050	c	mg/L	1	06/12/2012 4:30 PM	9713
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH3 F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0320	0.0100		mg/L	1	06/14/2012 10:47 AM	R23974
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0110	0.00500	J	mg/L	1	06/13/2012 2:02 PM	9748
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	06/13/2012 2:14 PM	R23937

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206431

Client Sample ID: 1hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206431-002

Date Received: 06/09/2012 11:30 AM

Collection Date: 06/08/2012 1:18 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	11.9	0.500		mg/L	1	06/12/2012 10:25 AM	R23882
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.60			pH			
Temperature	17.6			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	124	0.050	c	mg/L	1	06/12/2012 4:30 PM	9713
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0139	0.0100	J	mg/L	1	06/14/2012 10:47 AM	R23974
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0116	0.00500	J	mg/L	1	06/13/2012 2:02 PM	9748
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	06/13/2012 2:14 PM	R23937

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206431

Client Sample ID: 4hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206431-003

Date Received: 06/09/2012 11:30 AM

Collection Date: 06/08/2012 4:11 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	11.0	0.500		mg/L	1	06/12/2012 10:25 AM	R23882
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.65			pH			
Temperature	19.2			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	119	0.050	c	mg/L	1	06/12/2012 4:30 PM	9713
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0128	0.0100	J	mg/L	1	06/14/2012 10:47 AM	R23974
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00752	0.00500	J	mg/L	1	06/13/2012 2:02 PM	9748
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	ND	0.400		mg/L	1	06/13/2012 2:14 PM	R23937

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206431

Client Sample ID: 4hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206431-004

Date Received: 06/09/2012 11:30 AM

Collection Date: 06/08/2012 4:22 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	11.0	0.500		mg/L	1	06/12/2012 10:25 AM	R23882
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.63			pH			
Temperature	17.4			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	121	0.050	c	mg/L	1	06/12/2012 4:30 PM	9713
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	06/14/2012 10:47 AM	R23974
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00695	0.00500	J	mg/L	1	06/13/2012 2:02 PM	9748
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	06/13/2012 2:19 PM	R23938

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206431

Client Sample ID: 1000' Upstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206431-005

Date Received: 06/09/2012 11:30 AM

Collection Date: 06/08/2012 1:55 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.2	0.500		mg/L	1	06/12/2012 10:25 AM	R23882
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.68			pH			
Temperature	18.1			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO3)	127	0.050	c	mg/L	1	06/12/2012 4:30 PM	9713
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH3 F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	06/14/2012 10:47 AM	R23974
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0325	0.00500		mg/L	1	06/13/2012 2:02 PM	9748
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	1.20	0.400	J	mg/L	1	06/13/2012 2:19 PM	R23938

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206431

Client Sample ID: 1000' Upstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206431-006

Date Received: 06/09/2012 11:30 AM

Collection Date: 06/08/2012 2:05 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.8	0.500		mg/L	1	06/12/2012 10:25 AM	R23882
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.69			pH			
Temperature	16.9			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	128	0.050	c	mg/L	1	06/12/2012 4:30 PM	9713
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0106	0.0100	J	mg/L	1	06/14/2012 10:47 AM	R23974
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00812	0.00500	J	mg/L	1	06/13/2012 2:02 PM	9748
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	06/13/2012 2:19 PM	R23938

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206431

Client Sample ID: Blind Duplicate

Matrix: SURFACE WATER

Lab ID: 1206431-007

Date Received: 06/09/2012 11:30 AM

Collection Date: 06/08/2012 2:14 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	11.3	0.500		mg/L	1	06/12/2012 10:25 AM	R23882
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.69			pH			
Temperature	16.9			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	126	0.050	c	mg/L	1	06/12/2012 4:30 PM	9713
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	06/14/2012 10:47 AM	R23974
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00870	0.00500	J	mg/L	1	06/13/2012 2:02 PM	9748
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	2.00	0.400		mg/L	1	06/13/2012 2:19 PM	R23938

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 13, 2012
Lab Order: 1206431

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1206431-001B	06/08/12 1:10:00 PM	9748	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/13/12
1206431-001C		9713	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/11/12
1206431-002B	06/08/12 1:18:00 PM	9748	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/13/12
1206431-002C		9713	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/11/12
1206431-003B	06/08/12 4:11:00 PM	9748	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/13/12
1206431-003C		9713	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/11/12
1206431-004B	06/08/12 4:22:00 PM	9748	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/13/12
1206431-004C		9713	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/11/12
1206431-005B	06/08/12 1:55:00 PM	9748	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/13/12
1206431-005C		9713	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/11/12
1206431-006B	06/08/12 2:05:00 PM	9748	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/13/12
1206431-006C		9713	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/11/12
1206431-007B	06/08/12 2:14:00 PM	9748	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/13/12
1206431-007C		9713	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/11/12



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1206431

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23882CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23882
Client ID: CCB	Batch ID: R23882	TestNo: A4500-CI- E		Analysis Date: 06/12/12	SeqNo: 513263
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: R23882CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23882
Client ID: CCV	Batch ID: R23882	TestNo: A4500-CI- E		Analysis Date: 06/12/12	SeqNo: 513264
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	99.0	5.00	100.0	0	99.0 90 110

Sample ID: R23882ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23882
Client ID: ICV	Batch ID: R23882	TestNo: A4500-CI- E		Analysis Date: 06/12/12	SeqNo: 513265
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	101	5.00	100.0	0	101 90 110

Sample ID: MB-R23882	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23882
Client ID: PBW	Batch ID: R23882	TestNo: A4500-CI- E		Analysis Date: 06/12/12	SeqNo: 513266
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: LCS-R23882	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23882
Client ID: LCSW	Batch ID: R23882	TestNo: A4500-CI- E		Analysis Date: 06/12/12	SeqNo: 513267
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	102	5.00	100.0	0	102 85 115

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1206431

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23882CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23882						
Client ID: CCV	Batch ID: R23882	TestNo: A4500-CI- E		Analysis Date: 06/12/12	SeqNo: 513274						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	5.00	100.0	0	100	90	110				

Sample ID: R23882CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23882						
Client ID: CCB	Batch ID: R23882	TestNo: A4500-CI- E		Analysis Date: 06/12/12	SeqNo: 513275						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R23882CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23882						
Client ID: CCV	Batch ID: R23882	TestNo: A4500-CI- E		Analysis Date: 06/12/12	SeqNo: 513286						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	96.0	5.00	100.0	0	96.0	90	110				

Sample ID: R23882CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23882						
Client ID: CCB	Batch ID: R23882	TestNo: A4500-CI- E		Analysis Date: 06/12/12	SeqNo: 513287						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R23882CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23882						
Client ID: CCV	Batch ID: R23882	TestNo: A4500-CI- E		Analysis Date: 06/12/12	SeqNo: 513291						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	94.8	5.00	100.0	0	94.8	90	110				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206431**

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R23882CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23882						
Client ID: CCB	Batch ID: R23882	TestNo: A4500-CI- E		Analysis Date: 06/12/12	SeqNo: 513292						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206431**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R23974	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23974
Client ID: PBW	Batch ID: R23974	TestNo: A4500-NH3 D		Analysis Date: 06/14/12	SeqNo: 515614
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

ND 0.0200

Sample ID: R23974ICV	SampType: ICV	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23974
Client ID: ICV	Batch ID: R23974	TestNo: A4500-NH3 D		Analysis Date: 06/14/12	SeqNo: 515615
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.466 0.0200 0.5000 0 93.2 90 110

Sample ID: 1206431-001BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23974
Client ID: 1hr - 500' Downstre	Batch ID: R23974	TestNo: A4500-NH3 D		Analysis Date: 06/14/12	SeqNo: 515617
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.463 0.0200 0.5000 0.03205 86.3 80 120

Sample ID: 1206431-001BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23974
Client ID: 1hr - 500' Downstre	Batch ID: R23974	TestNo: A4500-NH3 D		Analysis Date: 06/14/12	SeqNo: 515618
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.461 0.0200 0.5000 0.03205 85.7 80 120 0.4633 0.606 20

Sample ID: R23974CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23974
Client ID: CCB	Batch ID: R23974	TestNo: A4500-NH3 D		Analysis Date: 06/14/12	SeqNo: 515626
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

ND 0.0200

Qualifiers:

%X Value exceeds Maximum Contaminant Level	E Estimated, detected above quantitation range	H Holding times for preparation or analysis exceeded
M Manual Integration used to determine area response	ND Not Detected at the Reporting Limit	P Second column confirmation exceeds
R RPD outside accepted recovery limits	RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1206431

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: LCS-9748	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/13/12	RunNo: 23942						
Client ID: LCSW	Batch ID: 9748	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/13/12	SeqNo: 514811						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	0.0529	0.0120	0.05000	0	106	85	115				

Sample ID: MB-9748	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/13/12	RunNo: 23942						
Client ID: PBW	Batch ID: 9748	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/13/12	SeqNo: 514812						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	ND	0.0120									

Sample ID: 1206431-001BMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/13/12	RunNo: 23942						
Client ID: 1hr - 500' Downstre	Batch ID: 9748	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/13/12	SeqNo: 514814						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	0.0564	0.0120	0.05000	0.01102	90.7	80	120				

Sample ID: 1206431-001BMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/13/12	RunNo: 23942						
Client ID: 1hr - 500' Downstre	Batch ID: 9748	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/13/12	SeqNo: 514815						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus (As P)	0.0575	0.0120	0.05000	0.01102	93.0	80	120	0.05638	2.02	13.7	

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206431**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R23937	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23937
Client ID: PBW	Batch ID: R23937	TestNo: A2540D		Analysis Date: 06/13/12	SeqNo: 515438
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Residue, Non-Filterable	ND	1.00			

Sample ID: 1206429-003ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23937
Client ID: ZZZZZ	Batch ID: R23937	TestNo: A2540D		Analysis Date: 06/13/12	SeqNo: 515438
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Residue, Non-Filterable	31.0	5.00		29.00	6.67 10

Sample ID: MB-R23938	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23938
Client ID: PBW	Batch ID: R23938	TestNo: A2540D		Analysis Date: 06/13/12	SeqNo: 515459
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Residue, Non-Filterable	ND	1.00			

Sample ID: 1206461-001ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23938
Client ID: ZZZZZ	Batch ID: R23938	TestNo: A2540D		Analysis Date: 06/13/12	SeqNo: 515475
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Residue, Non-Filterable	35.0	5.00		33.00	5.88 10

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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CHAIN OF CUSTODY RECORD

Electronic Version

Company Name: **Ryba Marine**

Company Address: **629 N. Main Street / PO Box 265**

City: **Cheboygan** State: **MI** Zip: **49721**

Phone: **(231) 627-4333** Fax: **(231) 627-4890** Fax Report

Email Address: **wmoon@rybamarine.com** Email Report

Project ID / Location: **Waukegan Harbor Dredging FY11**

Project Manager (Report to): **Wayne Moon**

Sample Collector(s): **POT JRELMAN**

TURNAROUND TIME REQUESTED

Normal RUSH* *Additional Rush Charges Approved.

*Date & Time Needed:

Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.

Specify Regulatory Program: (Required) None/Info only

LUST SRP SDWA

503 Sludge NPDES MWRDGC

Disposal Other *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED

Enter an "X" in box below for request

TSS	Chloride	Ammonia	Phosphorus	Hardness
X	X			
		X	X	
				X
		X	X	
				X
X	X			
		X	X	
				X

Page 1 of 2

PO No.

Shipping Method: **SLI**

QC Reporting Level: 1 2 3

LAB USE ONLY

SLI Order No: **13006431**

Sample containers supplied by customer? Yes

Temperature of Received Samples: **4** °C

Samples received within 24 hours of collection? Yes

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	CONDITION CODES				
	DATE	TIME			Qty	SIZE & TYPE							R	Condition	Split	LAB #	
1 1hr-500' downstream, surface	6/8/12	1:10 pm	SW	G	1	1LP	none	X	X								1A
2 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X						1B
3 ↓	↓	↓	↓	↓	1	500p	HNO3					X					1C
4 1hr-500' downstream, mid-depth	6/8/12	1:15 pm	SW	G	1	1LP	none	X	X								2A
5 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X						2B
6 ↓	↓	↓	↓	↓	1	500p	HNO3					X					2C
7 4hr-500' downstream, surface	6/9/12	4:11 pm	SW	G	1	1LP	none	X	X								3A
8 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X						3B
9 ↓	↓	↓	↓	↓	1	500p	HNO3					X					3C
10 4hr-500' downstream, mid-depth	6/5/12	4:22 pm	SW	G	1	1LP	none	X	X								4A
11 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X						4B
12 ↓	↓	↓	↓	↓	1	500p	HNO3					X					4C

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) CONTAINER: 2oz, 4oz, 8oz, 4Cml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) PRESERVATIVE: H2SO4, HCl, HNO3, Methanol (MeOH), NaOH, Sodium Bisulfate (NaBS), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:

* Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11

- CONDITION CODES
1. Improper/damaged container/stop
 2. Improper preservation
 3. Insufficient sample volume
 4. Headspace/air bubbles for VOCs
 5. Received past holding time
 6. Received frozen
 7. Label conflicts with COC

1. Relinquished By:	Date: 6/9/12	2. Relinquished By:	Date:	3. Relinquished By:	Date:	4. Relinquished By:	Date:
Received By: Melina Amador	Time: 11:30AM	Received By:	Time:	Received By:	Time:	Received By:	Time:



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CHAIN OF CUSTODY RECORD

Electronic Version

Company Name Ryba Marine		TURNAROUND TIME REQUESTED		ANALYSIS & METHOD REQUESTED		Page 2 of 2																						
Company Address 629 N. Main Street / PO Box 265		<input checked="" type="checkbox"/> Normal <input type="checkbox"/> RUSH* *Additional Rush Charges Approved.		Enter an "X" in box below for request		PO No.																						
City Cheboygan	State MI	Zip 49721	*Date & Time Needed:		<table border="1"> <tr><td>TSS</td><td>Chloride</td><td>Ammonia</td><td>Phosphorus</td><td>Hardness</td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>		TSS	Chloride	Ammonia	Phosphorus	Hardness																Shipping Method SLI	
TSS	Chloride	Ammonia	Phosphorus	Hardness																								
Phone	Fax	<input type="checkbox"/> Fax Report	Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.		QC Reporting Level <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3																							
Email Address		<input checked="" type="checkbox"/> Email Report	Specify Regulatory Program: (Required) <input type="checkbox"/> None/Info only		LAB USE ONLY																							
Project ID / Location Waukegan Harbor Dredging FY11		<input type="checkbox"/> LUST <input type="checkbox"/> SRP <input type="checkbox"/> SDWA		<input type="checkbox"/> 503 Sludge <input type="checkbox"/> NPDES <input type="checkbox"/> MWRDGC		SLI Order No. 1306431																						
Project Manager (Report to) Wayne Moon		<input type="checkbox"/> Disposal <input checked="" type="checkbox"/> Other *Please specify in comment section below.				Sample containers supplied by customer? <input type="checkbox"/> Yes																						
Sample Collector(s) PAT IRELAN						Temperature of Received Samples 4 °C																						

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	LAB USE ONLY					
	DATE	TIME			Qty	SIZE & TYPE							R	Condition	Split	LAB #		
1 1000' upstream, surface	6/8/12	1:55 pm	SW	G	1	1LP	none	X	X									5A
2 ↓					1	1LP	H2SO4			X	X							5B
3 ↓					1	500p	HNO3					X						5C
4 1000' upstream, mid-depth	6/8/12	2:05 pm	SW	G	1	1LP	none	X	X									6A
5 ↓					1	1LP	H2SO4			X	X							6B
6 ↓					1	500p	HNO3					X						6C
7 Blind duplicate	6/8/12	2:14 pm	SW	G	1	1LP	none	X	X									7A
8 ↓					1	1LP	H2SO4			X	X							7B
9 ↓					1	500p	HNO3					X						7C
10																		
11																		
12																		

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) CONTAINER: 2oz, 4oz, 8oz, 40m Vial, 500ml, 1 liter (L), Tube, Glass (G), Plastic (P) PRESERVATIVE: H ₂ SO ₄ , HCl, HNO ₃ , Methanol (MeOH), NaOH, Sodium Bisulfate (NaBS), NaThio	COMMENTS & SPECIAL INSTRUCTIONS: * Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11	CONDITION CODES 1. Improper/damaged container/cap 2. Improper preservation 3. Insufficient sample volume 4. Headspace/air bubbles for VOCs 5. Received past holding time 6. Received frozen 7. Label conflicts with COC
--	--	---

1. Relinquished By 	Date 6/9/12	2. Relinquished By	Date	3. Relinquished By	Date	4. Relinquished By	Date
Received By 	Time 11:30 am	Received By	<input type="checkbox"/> Ice	Received By	<input type="checkbox"/> Ice	Received By	<input type="checkbox"/> Ice



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Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Suburban Labs Field Sampling Technician(s) - PRINT: PAT IRELAN		Placement area (circle): 1 (2)		Eutech Inst. Oakton Field pH Meter, pHTestr 30 Serial No.: 8 Thermo Orion 5-Star pH-E Cond IS Portals A10350	
Luedtke Engineering Rep. - PRINT:		GPS coordinates of discharge point: ¹ E1130650 N2116971		Scow name and quantity of discharge: ¹ Scow 251 1060 yds	
Weather and water conditions: SUNNY + CLEAR (WARM)		Date of Discharge: 6/8/12		Time of Discharge: ¹ 12¹⁰ pm	
	1hr-500' downstream Surface	1hr-500' downstream Mid-depth	4hr-500' downstream Surface	4hr-500' downstream Mid-depth	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab	grab	Kemmerer - grab	
GPS coordinate (Lat./Long.) of sample collection: ¹	E113 0650 7471 m 6/11/12 N2116971		E113 0650 7471 m 6/11/12 N2116971		
GPS coordinate (state plane) of sample collection: ¹	NAD 83		NAD 83		
Water column depth to the nearest foot: ¹	27		27		
Sampling depth to the nearest foot: (enter zero for surface water samples)	0	13	0	13	
Date & Time of collection:	6/8/12 10¹⁰ pm	6/8/12 1¹⁸ pm	6/8/12 4¹¹ pm	6/8/12 4²² pm	
Sample appearance: (clear, tinted, dark, etc..)	CLEAR	CLEAR	CLEAR	CLEAR	
pH & Time of reading:	8.53	8.60	8.65	8.63	
Temperature (degrees C):	19.2	17.6	19.2	17.4	
Comments:					

See also chain of custody form for bottles and preservatives



Suburban Laboratories, Inc.

4140 Litt Drive
 Hillside, IL 60162-1183
 P: (708) 544-3260 F: (708) 544-8587
www.SuburbanLabs.com

Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
 Weekly water sampling

Date of Discharge: 6/8/12				
	1000' upstream Surface	1000' upstream Mid-depth	Blind Duplicate	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab		
GPS coordinate (Lat./Long.) of sample collection: ¹	E 11306500 N 2117971			
GPS coordinate (state plane) of sample collection: ¹	NAD 83			
Water column depth to the nearest foot: ¹	29		29	
Sampling depth to the nearest foot: (enter zero for surface water samples)	0	14	14	
Date & Time of collection:	6/8/12 1:55 pm	6/8/12 2:05 pm	6/8/12 2:14 pm	
Sample appearance: (clear, tinted, dark, etc..)	CLEAR	CLEAR	CLEAR	
pH & Time of reading:	8.68	8.69	8.69	
Temperature (degrees C):	18.1	16.9	16.9	
Blind Duplicate sample ID:				
Comments:				

See also chain of custody form for bottles and preservation

Version 3 05/16/2010

SIGNATURES:

SLI Field Tech 1: 

SLI Field Tech 2: _____



July 13, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1206833

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 7 sample(s) on 06/18/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,



Melissa Amador
Project Manager





Client: Ryba Marine Construction Co.

Date: July 13, 2012

Project: Waukegan Harbor Approach Channel Dredgin

PO #:

WorkOrder: 1206833

QC Level:

Temperature of samples upon receipt at SLI: 3 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206833

Client Sample ID: 1hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206833-001

Date Received: 06/18/2012 12:15 PM

Collection Date: 06/17/2012 2:32 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.16	0.500		mg/L	1	06/18/2012 5:58 PM	R24112
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.55			pH			
Temperature	16.8			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	123	0.050	c	mg/L	1	06/21/2012 11:55 PM	9878
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0414	0.0100		mg/L	1	06/22/2012 11:59 AM	R24270
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00985	0.00500	J	mg/L	1	06/22/2012 3:24 PM	9943
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	06/20/2012 2:53 PM	R24170

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206833

Client Sample ID: 1hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206833-002

Date Received: 06/18/2012 12:15 PM

Collection Date: 06/17/2012 2:41 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	8.73	0.500		mg/L	1	06/18/2012 5:58 PM	R24112
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.66			pH			
Temperature	13.5			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	127	0.050	c	mg/L	1	06/21/2012 11:55 PM	9878
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0298	0.0100		mg/L	1	06/22/2012 11:59 AM	R24270
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00870	0.00500	J	mg/L	1	06/22/2012 3:24 PM	9943
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	06/20/2012 2:53 PM	R24170

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206833

Client Sample ID: 4hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206833-003

Date Received: 06/18/2012 12:15 PM

Collection Date: 06/17/2012 5:30 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	8.26	0.500		mg/L	1	06/18/2012 5:58 PM	R24112
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	9.05			pH			
Temperature	15.1			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	123	0.050	c	mg/L	1	06/21/2012 11:55 PM	9878
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0168	0.0100	J	mg/L	1	06/22/2012 11:59 AM	R24270
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0110	0.00500	J	mg/L	1	06/22/2012 3:24 PM	9943
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	06/20/2012 2:53 PM	R24170

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206833

Client Sample ID: 4hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206833-004

Date Received: 06/18/2012 12:15 PM

Collection Date: 06/17/2012 5:43 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.83	0.500		mg/L	1	06/18/2012 5:58 PM	R24112
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	9.04			pH			
Temperature	13.6			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	123	0.050	c	mg/L	1	06/21/2012 11:55 PM	9878
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0150	0.0100	J	mg/L	1	06/22/2012 11:59 AM	R24270
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00752	0.00500	J	mg/L	1	06/22/2012 3:24 PM	9943
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	06/20/2012 2:53 PM	R24170

- | | |
|---|---|
| <p>Qualifiers:</p> <ul style="list-style-type: none"> */x Value exceeds Maximum Contaminant Level c Analyte not in SLI scope of accreditation G Refer to case narrative page for specific comments J Analyte detected below quantitation limit (QL) ND Not Detected at the Reporting Limit S Spike Recovery outside accepted recovery limits | <ul style="list-style-type: none"> B Analyte detected in the associated Method Blank E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded N Tentatively identified compounds R RPD outside accepted recovery limits |
|---|---|



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206833

Client Sample ID: 1000' Upstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206833-005

Date Received: 06/18/2012 12:15 PM

Collection Date: 06/17/2012 3:10 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.8	0.500		mg/L	1	06/18/2012 5:58 PM	R24112
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.69			pH			
Temperature	15.1			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	125	0.050	c	mg/L	1	06/21/2012 11:55 PM	9878
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0146	0.0100	J	mg/L	1	06/22/2012 11:59 AM	R24270
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00928	0.00500	J	mg/L	1	06/22/2012 3:24 PM	9943
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	06/20/2012 2:53 PM	R24170

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206833

Client Sample ID: 1000' Upstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206833-006

Date Received: 06/18/2012 12:15 PM

Collection Date: 06/17/2012 3:26 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.7	0.500		mg/L	1	06/18/2012 5:58 PM	R24112
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.86			pH			
Temperature	13.3			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO3)	124	0.050	c	mg/L	1	06/21/2012 11:55 PM	9878
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH3 F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0261	0.0100		mg/L	1	06/22/2012 11:59 AM	R24270
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0134	0.00500		mg/L	1	06/22/2012 3:24 PM	9943
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	2.80	0.400		mg/L	1	06/20/2012 2:53 PM	R24170

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206833

Client Sample ID: Blind Duplicate

Matrix: SURFACE WATER

Lab ID: 1206833-007

Date Received: 06/18/2012 12:15 PM

Collection Date: 06/17/2012 3:44 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.6	0.500		mg/L	1	06/18/2012 5:58 PM	R24112
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	9.14			pH			
Temperature	13.2			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	121	0.050	c	mg/L	1	06/21/2012 11:55 PM	9878
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0174	0.0100	J	mg/L	1	06/22/2012 11:59 AM	R24270
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00812	0.00500	J	mg/L	1	06/22/2012 3:24 PM	9943
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	06/20/2012 2:53 PM	R24170

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 13, 2012
Lab Order: 1206833

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1206833-001B	06/17/12 2:32:00 PM	9943	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/22/12
1206833-001C		9878	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/19/12
1206833-002B	06/17/12 2:41:00 PM	9943	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/22/12
1206833-002C		9878	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/19/12
1206833-003B	06/17/12 5:30:00 PM	9943	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/22/12
1206833-003C		9878	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/19/12
1206833-004B	06/17/12 5:43:00 PM	9943	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/22/12
1206833-004C		9878	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/19/12
1206833-005B	06/17/12 3:10:00 PM	9943	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/22/12
1206833-005C		9878	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/19/12
1206833-006B	06/17/12 3:26:00 PM	9943	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/22/12
1206833-006C		9878	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/19/12
1206833-007B	06/17/12 3:44:00 PM	9943	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/22/12
1206833-007C		9878	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/19/12



Suburban Laboratories, Inc.
 4140 Litt Dr
 Hillside, IL 60162
 TEL: 708-544-3260 FAX: 708-544-8587
 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1206833
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24112CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24112
Client ID: CCB	Batch ID: R24112	TestNo: A4500-CI- E		Analysis Date: 06/18/12	SeqNo: 518285
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: R24112CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24112
Client ID: CCV	Batch ID: R24112	TestNo: A4500-CI- E		Analysis Date: 06/18/12	SeqNo: 518286
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	106	5.00	100.0	0	106 90 110

Sample ID: R24112ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24112
Client ID: ICV	Batch ID: R24112	TestNo: A4500-CI- E		Analysis Date: 06/18/12	SeqNo: 518287
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	106	5.00	100.0	0	106 90 110

Sample ID: MB-R24112	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24112
Client ID: PBW	Batch ID: R24112	TestNo: A4500-CI- E		Analysis Date: 06/18/12	SeqNo: 518288
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: LCS-R24112	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24112
Client ID: LCSW	Batch ID: R24112	TestNo: A4500-CI- E		Analysis Date: 06/18/12	SeqNo: 518289
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	106	5.00	100.0	0	106 85 115

Qualifiers:

%X Value exceeds Maximum Contaminant Level	E Estimated, detected above quantitation range	H Holding times for preparation or analysis exceeded
M Manual Integration used to determine area response	ND Not Detected at the Reporting Limit	P Second column confirmation exceeds
R RPD outside accepted recovery limits	RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits



Suburban Laboratories, Inc.
 4140 Litt Dr
 Hillside, IL 60162
 TEL: 708-544-3260 FAX: 708-544-8587
 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1206833

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24112CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24112						
Client ID: CCV	Batch ID: R24112	TestNo: A4500-CI- E		Analysis Date: 06/18/12	SeqNo: 518298						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	105	5.00	100.0	0	105	90	110				

Sample ID: R24112CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24112						
Client ID: CCB	Batch ID: R24112	TestNo: A4500-CI- E		Analysis Date: 06/18/12	SeqNo: 518299						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R24112CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24112						
Client ID: CCV	Batch ID: R24112	TestNo: A4500-CI- E		Analysis Date: 06/18/12	SeqNo: 518302						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	99.2	5.00	100.0	0	99.2	90	110				

Sample ID: R24112CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24112						
Client ID: CCB	Batch ID: R24112	TestNo: A4500-CI- E		Analysis Date: 06/18/12	SeqNo: 518303						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



Suburban Laboratories, Inc.
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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1206833

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R24270	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24270
Client ID: PBW	Batch ID: R24270	TestNo: A4500-NH3 D		Analysis Date: 06/22/12	SeqNo: 522192
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

ND 0.0200

Sample ID: R24270ICV	SampType: ICV	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24270
Client ID: ICV	Batch ID: R24270	TestNo: A4500-NH3 D		Analysis Date: 06/22/12	SeqNo: 522193
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.456 0.0200 0.5000 0 91.2 90 110

Sample ID: 1206833-001BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24270
Client ID: 1hr - 500' Downstre	Batch ID: R24270	TestNo: A4500-NH3 D		Analysis Date: 06/22/12	SeqNo: 522195
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.474 0.0200 0.5000 0.04138 86.5 80 120

Sample ID: 1206833-001BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24270
Client ID: 1hr - 500' Downstre	Batch ID: R24270	TestNo: A4500-NH3 D		Analysis Date: 06/22/12	SeqNo: 522196
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.472 0.0200 0.5000 0.04138 86.1 80 120 0.4740 0.410 20

Sample ID: BLK	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24270
Client ID: PBW	Batch ID: R24270	TestNo: A4500-NH3 D		Analysis Date: 06/22/12	SeqNo: 522204
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

ND 0.0200

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1206833

13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: MB-9943	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/22/12	RunNo: 24290
Client ID: PBW	Batch ID: 9943	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/22/12	SeqNo: 522454
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) ND 0.0120

Sample ID: LCS-9943	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/22/12	RunNo: 24290
Client ID: LCSW	Batch ID: 9943	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/22/12	SeqNo: 522455
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) 0.0540 0.0120 0.05000 0 108 85 115

Sample ID: 1206833-001BMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/22/12	RunNo: 24290
Client ID: 1hr - 500' Downstre	Batch ID: 9943	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/22/12	SeqNo: 522457
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) 0.0564 0.0120 0.05000 0.009850 93.0 80 120

Sample ID: 1206833-001BMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/22/12	RunNo: 24290
Client ID: 1hr - 500' Downstre	Batch ID: 9943	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/22/12	SeqNo: 522458
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) 0.0552 0.0120 0.05000 0.009850 90.7 80 120 0.05638 2.11 13.7

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206833**
13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R24170	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24170
Client ID: PBW	Batch ID: R24170	TestNo: A2540D		Analysis Date: 06/20/12	SeqNo: 520722
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Residue, Non-Filterable	ND	1.00			

Sample ID: 1206826-001ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24170
Client ID: ZZZZZZ	Batch ID: R24170	TestNo: A2540D		Analysis Date: 06/20/12	SeqNo: 520738
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Residue, Non-Filterable	36.0	10.0			34.00 5.71 10

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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Toll Free: 800.783.LABS

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CHAIN OF CUSTODY RECORD

Electronic Version

Company Name: Ryba Marine
 Company Address: 629 N. Main Street / PO Box 265
 City: Cheboygan State: MI Zip: 49721
 Phone: (231) 627-4333 Fax: (231) 627-4890 Fax Report
 Email Address: wmoon@rybamarine.com Email Report
 Project ID / Location: Waukegan Harbor Dredging FY11
 Project Manager (Report to): Wayne Moon
 Sample Collector(s): *PAT GREEN*

TURNAROUND TIME REQUESTED
 Normal RUSH* *Additional Rush Charges Approved.
 *Date & Time Needed:
 Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.
 Specify Regulatory Program: (Required) None/Info only
 LUST SRP SDWA
 503 Sludge NPDES MWRDGC
 Disposal Other *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED
 Enter an "X" in box below for request

TSS	Chloride	Ammonia	Phosphorus	Hardness
X	X			
		X	X	
				X
X	X			
		X	X	
				X
X	X			
		X	X	
				X

Page 1 of 2
 PO No.
 Shipping Method: SLI
 QC Reporting Level: 1 2 3
LAB USE ONLY
 SLI Order No: *1206833*
 Sample containers supplied by customer? Yes
 Temperature of Received Samples: *3* °C
 Samples received within 24 hours of collection? Yes

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	CONDITION CODES				
	DATE	TIME			Qty	SIZE & TYPE							R	Condition	Split	LAB #	
1 1hr-500' downstream, surface	6/17/12	2:32 pm	SW	G	1	1LP	none	X	X								1A
2 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X						1B
3 ↓	↓	↓	↓	↓	1	500p	HNO3					X					1C
4 1hr-500' downstream, mid-depth	6/17/12	2:41 pm	SW	G	1	1LP	none	X	X								2A
5 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X						2B
6 ↓	↓	↓	↓	↓	1	500p	HNO3					X					2C
7 4hr-500' downstream, surface	6/17/12	5:30 pm	SW	G	1	1LP	none	X	X								3A
8 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X						3B
9 ↓	↓	↓	↓	↓	1	500p	HNO3					X					3C
10 4hr-500' downstream, mid-depth	6/17/12	5:43 pm	SW	G	1	1LP	none	X	X								4A
11 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X						4B
12 ↓	↓	↓	↓	↓	1	500p	HNO3					X					4C

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) CONTAINER: 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) PRESERVATIVE: H₂SO₄, HCl, HNO₃, Methanol (MeOH), NaOH, Sodium Bisulfate (NaHSO₃), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:
 * Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11

- CONDITION CODES
- Improper/damaged container/cap
 - Improper preservation
 - Insufficient sample volume
 - Headspace/air bubbles for VOCs
 - Received past holding time
 - Received frozen
 - Label conflicts with COC

1. Relinquished By: <i>[Signature]</i> Date: <i>6/18/12</i>	2. Relinquished By: _____ Date: _____	3. Relinquished By: _____ Date: _____	4. Relinquished By: _____ Date: _____
Received By: <i>[Signature]</i> Time: <i>12:15 pm</i> <input checked="" type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice



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Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Suburban Labs Field Sampling Technician(s) - PRINT: <i>PAT IRIELAN</i>		Placement area (circle): 1 <u>2</u>		Eutech Inst. Oakton Field pH Meter, pHTestr 30 Serial No.: <i>819764</i>	
Luedtke Engineering Rep. - PRINT:		GPS coordinates of discharge point: ¹ <i>E 113 0829 N 2117784</i>		Scow name and quantity of discharge: ¹ <i>Scow 252 1269 yds</i>	
Weather and water conditions: <i>SUNNY - WINDY</i>		Date of Discharge: <i>6/17/12</i>		Time of Discharge: ¹ <i>1:30 pm</i>	
	1hr-500' downstream Surface	1hr-500' downstream Mid-depth	4hr-500' downstream Surface	4hr-500' downstream Mid-depth	Additional Comments: <i>VERY WINDY</i>
Sampling Technique:	grab	Kemmerer - grab	grab	Kemmerer - grab	
GPS coordinate (Lat./Long.) of sample collection: ¹	<i>E 113 0829 N 2117284</i> →				
GPS coordinate (state plane) of sample collection: ¹	<i>NAD 83</i>		<i>NAD 83</i>		
Water column depth to the nearest foot: ¹	<i>26</i>		<i>26</i>		
Sampling depth to the nearest foot: (enter zero for surface water samples)	<i>0</i>	<i>13</i>	<i>0</i>	<i>13</i>	
Date & Time of collection:	<i>6/17/12 2:32 pm</i>	<i>6/17/12 2:41 pm</i>	<i>6/17/12 5:30 pm</i>	<i>6/17/12 5:43 pm</i>	
Sample appearance: (clear, tinted, dark, etc..)	<i>CLEAR</i>	<i>CLEAR</i>	<i>CLEAR</i>	<i>CLEAR</i>	
pH & Time of reading:	<i>8.53</i>	<i>8.66</i>	<i>9.05</i>	<i>9.04</i>	
Temperature (degrees C):	<i>16.8</i>	<i>13.5</i>	<i>15.1</i>	<i>13.6</i>	
Comments:					



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Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
 Weekly water sampling

Date of Discharge: <u>6/17/12</u>				
	1000' upstream Surface	1000' upstream Mid-depth	Blind Duplicate	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab		✓ Very Windy
GPS coordinate (Lat./Long.) of sample collection: ¹	E 1130829 N 2118784 →			
GPS coordinate (state plane) of sample collection: ¹	NAS 83		NAS 83	
Water column depth to the nearest foot: ¹	27		27	
Sampling depth to the nearest foot: (enter zero for surface water samples)	0	13	13	
Date & Time of collection:	6/17/12 3:10 pm	6/17/12 3:26 pm	6/17/12 3:44 pm	
Sample appearance: (clear, tinted, dark, etc..)	CLEAR	CLEAR	CLEAR	
pH & Time of reading:	8.69	8.86	9.14	
Temperature (degrees C):	15.1	13.3	13.2	
Blind Duplicate sample ID:			DUP	
Comments:				

See also chain of custody form for bottles and preservatives

Version 0 06/16/2010

SIGNATURES:

SLI Field Tech 1: 

SLI Field Tech 2: _____



July 13, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1206B67

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 7 sample(s) on 06/22/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,



Melissa Amador
Project Manager





Client: Ryba Marine Construction Co.

Date: July 13, 2012

Project: Waukegan Harbor Approach Channel Dredgin

PO #:

WorkOrder: 1206B67

QC Level:

Temperature of samples upon receipt at SLI: 3 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206B67

Client Sample ID: 1hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206B67-001

Date Received: 06/22/2012 2:30 PM

Collection Date: 06/21/2012 11:22 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	11.6	0.500		mg/L	1	06/22/2012 5:30 PM	R24301
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.56			pH			
Temperature	15.7			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	133	0.050	c	mg/L	1	06/27/2012 2:00 PM	9989
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0148	0.0100	J	mg/L	1	06/28/2012 1:23 PM	R24474
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0128	0.00500		mg/L	1	06/28/2012 2:21 PM	10039
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	06/26/2012 2:15 PM	R24384

- | | | |
|--------------------|--|--|
| Qualifiers: | */x Value exceeds Maximum Contaminant Level | B Analyte detected in the associated Method Blank |
| | c Analyte not in SLI scope of accreditation | E Estimated, detected above quantitation range |
| | G Refer to case narrative page for specific comments | H Holding times for preparation or analysis exceeded |
| | J Analyte detected below quantitation limit (QL) | N Tentatively identified compounds |
| | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| | S Spike Recovery outside accepted recovery limits | |



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206B67

Client Sample ID: 4hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206B67-003

Date Received: 06/22/2012 2:30 PM

Collection Date: 06/21/2012 2:25 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.6	0.500		mg/L	1	06/22/2012 5:30 PM	R24301
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.56			pH			
Temperature	15.9			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	133	0.050	c	mg/L	1	06/27/2012 2:00 PM	9989
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0359	0.0100		mg/L	1	06/28/2012 1:23 PM	R24474
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0128	0.00500		mg/L	1	06/28/2012 2:21 PM	10039
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	06/26/2012 2:15 PM	R24384

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredging

Workorder: 1206B67

Client Sample ID: 4hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206B67-004

Date Received: 06/22/2012 2:30 PM

Collection Date: 06/21/2012 2:39 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.9	0.500		mg/L	1	06/22/2012 5:30 PM	R24301
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.69			pH			
Temperature	14.4			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	129	0.050	c	mg/L	1	06/27/2012 2:00 PM	9989
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0291	0.0100		mg/L	1	06/28/2012 1:23 PM	R24474
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0151	0.00500		mg/L	1	06/28/2012 2:21 PM	10039
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	1.20	0.400	J	mg/L	1	06/26/2012 2:15 PM	R24384

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206B67

Client Sample ID: 1000' Upstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206B67-005

Date Received: 06/22/2012 2:30 PM

Collection Date: 06/21/2012 11:58 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.9	0.500		mg/L	1	06/22/2012 5:30 PM	R24301
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.60			pH			
Temperature	15.3			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	129	0.050	c	mg/L	1	06/27/2012 2:00 PM	9989
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0124	0.0100	J	mg/L	1	06/28/2012 1:23 PM	R24474
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00812	0.00500	J	mg/L	1	06/28/2012 2:21 PM	10039
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	ND	0.400		mg/L	1	06/26/2012 2:15 PM	R24384

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206B67

Client Sample ID: 1000' Upstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206B67-006

Date Received: 06/22/2012 2:30 PM

Collection Date: 06/21/2012 12:24 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.2	0.500		mg/L	1	06/22/2012 5:30 PM	R24301
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.74			pH			
Temperature	13.6			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	130	0.050	c	mg/L	1	06/27/2012 2:00 PM	9989
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	06/28/2012 1:23 PM	R24474
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0174	0.00500		mg/L	1	06/28/2012 2:21 PM	10039
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	06/26/2012 2:15 PM	R24384

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206B67

Client Sample ID: Blind Duplicate

Matrix: SURFACE WATER

Lab ID: 1206B67-007

Date Received: 06/22/2012 2:30 PM

Collection Date: 06/21/2012 12:13 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.6	0.500		mg/L	1	06/22/2012 5:30 PM	R24301
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.64			pH			
Temperature	15.2			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	134	0.050	c	mg/L	1	06/27/2012 2:00 PM	9989
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0232	0.0100		mg/L	1	06/28/2012 1:23 PM	R24474
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0145	0.00500		mg/L	1	06/28/2012 2:21 PM	10039
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	06/26/2012 2:15 PM	R24384

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 13, 2012
Lab Order: 1206B67

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1206B67-001B	06/21/12 11:22:00 A	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206B67-001C		9989	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/26/12
1206B67-002B	06/21/12 11:35:00 A	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206B67-002C		9989	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/26/12
1206B67-003B	06/21/12 2:25:00 PM	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206B67-003C		9989	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/26/12
1206B67-004B	06/21/12 2:39:00 PM	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206B67-004C		9989	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/26/12
1206B67-005B	06/21/12 11:58:00 A	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206B67-005C		9989	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/26/12
1206B67-006B	06/21/12 12:24:00 P	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206B67-006C		9989	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/26/12
1206B67-007B	06/21/12 12:13:00 P	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206B67-007C		9989	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/26/12



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QC SUMMARY REPORT

WO#: **1206B67**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24301CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: CCB	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522619
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	1.71	5.00			
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Sample ID: R24301CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: CCV	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522620
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	94.3	5.00	100.0	0	94.3 90 110
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Sample ID: R24301ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: ICV	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522621
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	97.5	5.00	100.0	0	97.5 90 110
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Sample ID: MB-R24301	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: PBW	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522622
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: LCS-R24301	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: LCSW	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522623
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	95.2	5.00	100.0	0	95.2 85 115
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Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1206B67
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24301CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301						
Client ID: CCV	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522632						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	99.5	5.00	100.0	0	99.5	90	110				

Sample ID: R24301CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301						
Client ID: CCB	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522633						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.61	5.00									

Sample ID: R24301CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301						
Client ID: CCV	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522644						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	5.00	100.0	0	100	90	110				

Sample ID: R24301CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301						
Client ID: CCB	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522645						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R24301CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301						
Client ID: CCV	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522656						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	99.8	5.00	100.0	0	99.8	90	110				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206B67**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24301CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: CCB	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522657
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	0.900	5.00			

Sample ID: R24301CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: CCV	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522667
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	98.5	5.00	100.0	0	98.5 90 110

Sample ID: R24301CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: CCB	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522668
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	0.640	5.00			

Sample ID: R24301CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: CCV	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522675
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	94.4	5.00	100.0	0	94.4 90 110

Sample ID: R24301CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: CCB	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522676
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1206B67
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24301CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: CCB	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522677
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 4.38 5.00

Sample ID: R24301CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: CCV	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522678
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 101 5.00 100.0 0 101 90 110

Sample ID: R24301CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: CCV	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522680
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 106 5.00 100.0 0 106 90 110

Sample ID: R24301CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24301
Client ID: CCB	Batch ID: R24301	TestNo: A4500-CI- E		Analysis Date: 06/22/12	SeqNo: 522681
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 5.67 5.00

Qualifiers:

%X Value exceeds Maximum Contaminant Level	E Estimated, detected above quantitation range	H Holding times for preparation or analysis exceeded
M Manual Integration used to determine area response	ND Not Detected at the Reporting Limit	P Second column confirmation exceeds
R RPD outside accepted recovery limits	RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206B67**
13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R24474	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: PBW	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526416						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) ND 0.0200

Sample ID: R24474ICV	SampType: ICV	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: ICV	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526417						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) 0.467 0.0200 0.5000 0 93.5 90 110

Sample ID: 1206B67-001BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: 1hr - 500' Downstre	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526419						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) 0.465 0.0200 0.5000 0.01481 90.0 80 120

Sample ID: 1206B67-001BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: 1hr - 500' Downstre	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526420						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) 0.462 0.0200 0.5000 0.01481 89.5 80 120 0.4649 0.526 20

Sample ID: BLK	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: PBW	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526447						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) ND 0.0200

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: **1206B67**
13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: BLK	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: PBW	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526491						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	ND	0.0200									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206B67**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: MB-10039	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/28/12	RunNo: 24492
Client ID: PBW	Batch ID: 10039	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/28/12	SeqNo: 526601
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) ND 0.0120

Sample ID: LCS-10039	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/28/12	RunNo: 24492
Client ID: LCSW	Batch ID: 10039	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/28/12	SeqNo: 526601
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) 0.0534 0.0120 0.05000 0 107 85 115

Sample ID: 1206B67-001BMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/28/12	RunNo: 24492
Client ID: 1hr - 500' Downstre	Batch ID: 10039	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/28/12	SeqNo: 526604
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) 0.0598 0.0120 0.05000 0.01278 94.2 80 120

Sample ID: 1206B67-001BMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/28/12	RunNo: 24492
Client ID: 1hr - 500' Downstre	Batch ID: 10039	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/28/12	SeqNo: 526605
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) 0.0570 0.0120 0.05000 0.01278 88.4 80 120 0.05985 4.97 13.7

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



Suburban Laboratories, Inc.
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 Hillside, IL 60162
 TEL: 708-544-3260 FAX: 708-544-8587
 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: **1206B67**
13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R24384	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24384						
Client ID: PBW	Batch ID: R24384	TestNo: A2540D		Analysis Date: 06/26/12	SeqNo: 524775						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	ND	1.00									

Sample ID: 1206B71-006ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24384						
Client ID: ZZZZZZ	Batch ID: R24384	TestNo: A2540D		Analysis Date: 06/26/12	SeqNo: 524787						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	78.0	10.0						86.00	9.76	10	

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



SUBURBAN LABORATORIES, Inc.

4140 Litt Drive Hillside, IL 60162 Tel. 708.544.3260 Fax: 708.544.8587 Toll Free: 800.783.LABS www.suburbanlabs.com

CHAIN OF CUSTODY RECORD

Electronic Version Page 1 of 2

Company Name: **Ryba Marine**
 Company Address: **629 N. Main Street / PO Box 265**
 City: **Cheboygan** State: **MI** Zip: **49721**
 Phone: **(231) 627-4333** Fax: **(231) 627-4890** Fax Report
 Email Address: **wmoon@rybamarine.com** Email Report
 Project ID / Location: **Waukegan Harbor Dredging FY11**
 Project Manager (Report to): **Wayne Moon**
 Sample Collector(s): **DAT IRELAN**

TURNAROUND TIME REQUESTED
 Normal RUSH* *Additional Rush Charges Approved.
 *Date & Time Needed:
 Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.
 Specify Regulatory Program: (Required) None/Info only
 LUST SRP SDWA
 503 Sludge NPDES MWRDGC
 Disposal Other *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED
 Enter an "X" in box below for request

TSS	Chloride	Ammonia	Phosphorus	Hardness
X	X			
		X	X	
			X	
				X
X	X			
		X	X	
			X	
X	X			
		X	X	
			X	
				X

Page 1 of 2
 PO No.
 Shipping Method: **SLI**
 QC Reporting Level: 1 2 3
LAB USE ONLY
 SLI Order No. **1206B107**
 Sample containers supplied by customer? Yes
 Temperature of Received Samples: °C
 Samples received within 24 hours of collection? Yes

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	R	Condition	Split	LAB #
	DATE	TIME			Qty	SIZE & TYPE										
1 1hr-500' downstream, surface	6/21/12	11:22 am	SW	G	1	1LP	none	X	X							IA
2 ↓					1	1LP	H2SO4			X	X					IB
3 ↓					1	500p	HNO3				X					IC
4 1hr-500' downstream, mid-depth	6/21/12	11:35 am	SW	G	1	1LP	none	X	X							2A
5 ↓					1	1LP	H2SO4			X	X					2B
6 ↓					1	500p	HNO3				X					2C
7 4hr-500' downstream, surface	6/21/12	2:25 pm	SW	G	1	1LP	none	X	X							3A
8 ↓					1	1LP	H2SO4			X	X					3B
9 ↓					1	500p	HNO3				X					3C
10 4hr-500' downstream, mid-depth	6/21/12	2:39 pm	SW	G	1	1LP	none	X	X							4A
11 ↓					1	1LP	H2SO4			X	X					4B
12 ↓					1	500p	HNO3				X					4C

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H₂SO₄, HCl, HNO₃, Methanol (MeOH), NaOH, Sodium Bisulfate (NaB), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:
 * Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11

- CONDITION CODES**
1. Improper/damaged container/cap
 2. Improper preservation
 3. Insufficient sample volume
 4. Headspace/air bubbles for VOCs
 5. Received past holding time
 6. Received frozen
 7. Label conflicts with COC

1. Relinquished By: <i>[Signature]</i> Date: 6/21/12	2. Relinquished By: _____ Date: _____	3. Relinquished By: _____ Date: _____	4. Relinquished By: _____ Date: _____
Received By: <i>[Signature]</i> Time: 2:30 <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice

Submission of samples subject to Terms and Conditions on back. Rev. 2/01/05 Please fill out this form completely, print, sign & submit with samples. Keep a copy for your records.



Suburban Laboratories, Inc.

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Luedtke Engineering Company

FY10 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Suburban Labs Field Sampling Technician(s) - PRINT: PAT IRELAN		Placement area (circle): 1 2		Eutech Inst. Oakton Field pH Meter, pHTestr 30 Serial No.: 819766	
Luedtke Engineering Rep. - PRINT: DAVE BRADY WAYNE MOON		GPS coordinates of discharge point: ¹ E 1125510 N 2067600		Scow name and quantity of discharge: ¹ Scow 251 1220 yds	
Weather and water conditions: Cloudy - CALM		Date of Discharge: 6/21/12		Time of Discharge: ¹ 10¹⁸ AM	
	1hr-500' downstream Surface	1hr-500' downstream Mid-depth	4hr-500' downstream Surface	4hr-500' downstream Mid-depth	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab	grab	Kemmerer - grab	
GPS coordinate (Lat./Long.) of sample collection: ¹	E 1125510 N 2067100		E 1125510 N 2067100		
GPS coordinate (state plane) of sample collection: ¹	NAD 83		NAD 83		
Water column depth to the nearest foot: ¹	22		22		
Sampling depth to the nearest foot: (enter zero for surface water samples)	0	11	0	11	
Date & Time of collection:	6/21/12 11²² AM	6/21/12 11³⁵ AM	6/21/12 2²⁵ PM	6/21/12 2³⁹ PM	
Sample appearance: (clear, tinted, dark, etc..)	CLEAR	CLEAR	CLEAR	CLEAR	
pH & Time of reading:	8.56	8.57	8.56	8.69	
Temperature (degrees C):	15.7	14.3	15.9	14.4	
Comments:					

See also chain of custody form for bottles and preservatives



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Luedtke Engineering Company

FY10 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Date of Discharge: 6/21/12				
	1000' upstream Surface	1000' upstream Mid-depth	Blind Duplicate	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab		
GPS coordinate (Lat./Long.) of sample collection: ¹	E 1125510 N 2068600 →			
GPS coordinate (state plane) of sample collection: ¹	NAD 83		NAD 83	
Water column depth to the nearest foot: ¹	26		26	
Sampling depth to the nearest foot: (enter zero for surface water samples)	0	13	0	
Date & Time of collection:	6/21/12 11:58 AM	6/21/12 12:24 PM	6/21/12 12:13 PM	
Sample appearance: (clear, tinted, dark, etc..)	CLEAR	CLEAR	CLEAR	
pH & Time of reading:	8.60	8.74	8.64	
Temperature (degrees C):	15.3	13.6	15.2	
Blind Duplicate sample ID:			DUP	
Comments:				

See also chain of custody form for bottles and preservatives

Version 0 06/16/2010

SIGNATURES:

SLI Field Tech 1: 

SLI Field Tech 2: _____



July 13, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1206D59

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 7 sample(s) on 06/27/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,



Melissa Amador
Project Manager





Client: Ryba Marine Construction Co.

Date: July 13, 2012

Project: Waukegan Harbor Approach Channel Dredging

PO #:

WorkOrder: 1206D59

QC Level:

Temperature of samples upon receipt at SLI: 4 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206D59

Client Sample ID: 1hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206D59-001

Date Received: 06/27/2012 3:30 PM

Collection Date: 06/27/2012 9:55 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	16.9	0.500		mg/L	1	06/28/2012 11:21 AM	R24472
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.68			pH			
Temperature	18.7			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	136	0.050	c	mg/L	1	07/02/2012 3:30 PM	10035
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0219	0.0100		mg/L	1	06/28/2012 1:23 PM	R24474
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00638	0.00500	J	mg/L	1	06/28/2012 2:21 PM	10039
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	06/29/2012 1:00 PM	R24531

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206D59

Client Sample ID: 1hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206D59-002

Date Received: 06/27/2012 3:30 PM

Collection Date: 06/27/2012 10:12 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	15.0	0.500		mg/L	1	06/28/2012 11:21 AM	R24472
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.90			pH			
Temperature	20.8			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	138	0.050	c	mg/L	1	07/02/2012 3:30 PM	10035
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	06/28/2012 1:23 PM	R24474
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00985	0.00500	J	mg/L	1	06/28/2012 2:21 PM	10039
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	1.20	0.400	J	mg/L	1	06/29/2012 1:00 PM	R24531

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206D59

Client Sample ID: 4hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206D59-003

Date Received: 06/27/2012 3:30 PM

Collection Date: 06/27/2012 12:53 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	13.2	0.500		mg/L	1	06/28/2012 11:21 AM	R24472
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	9.33			pH			
Temperature	21.7			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	133	0.050	c	mg/L	1	07/02/2012 3:30 PM	10035
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0173	0.0100	J	mg/L	1	06/28/2012 1:23 PM	R24474
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0134	0.00500		mg/L	1	06/28/2012 2:21 PM	10039
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	1.20	0.400	J	mg/L	1	06/29/2012 1:00 PM	R24531

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredging

Workorder: 1206D59

Client Sample ID: 4hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1206D59-004

Date Received: 06/27/2012 3:30 PM

Collection Date: 06/27/2012 1:10 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	12.4	0.500		mg/L	1	06/28/2012 11:21 AM	R24472
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	9.42			pH			
Temperature	21.4			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	138	0.050	c	mg/L	1	07/02/2012 3:30 PM	10035
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0176	0.0100	J	mg/L	1	06/28/2012 1:23 PM	R24474
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00985	0.00500	J	mg/L	1	06/28/2012 2:21 PM	10039
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	06/29/2012 1:00 PM	R24531

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 13, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1206D59

Client Sample ID: 1000' Upstream - Surface

Matrix: SURFACE WATER

Lab ID: 1206D59-005

Date Received: 06/27/2012 3:30 PM

Collection Date: 06/27/2012 11:12 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	11.2	0.500		mg/L	1	06/28/2012 11:21 AM	R24472
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	9.05			pH			
Temperature	21.7			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO3)	135	0.050	c	mg/L	1	07/02/2012 3:30 PM	10035
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH3 F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	06/28/2012 1:23 PM	R24474
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0110	0.00500	J	mg/L	1	06/28/2012 2:21 PM	10039
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	2.00	0.400		mg/L	1	06/29/2012 1:00 PM	R24531

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 13, 2012
Lab Order: 1206D59

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1206D59-001B	06/27/12 9:55:00 AM	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206D59-001C		10035	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/28/12
1206D59-002B	06/27/12 10:12:00 A	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206D59-002C		10035	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/28/12
1206D59-003B	06/27/12 12:53:00 P	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206D59-003C		10035	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/28/12
1206D59-004B	06/27/12 1:10:00 PM	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206D59-004C		10035	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/28/12
1206D59-005B	06/27/12 11:12:00 A	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206D59-005C		10035	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/28/12
1206D59-006B	06/27/12 11:30:00 A	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206D59-006C		10035	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/28/12
1206D59-007B	06/27/12 11:44:00 A	10039	P_WW_LOWPR	PHOSPHORUS, TOTAL		06/28/12
1206D59-007C		10035	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		06/28/12



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: **1206D59**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24472CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472
Client ID: CCB	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526304
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: R24472CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472
Client ID: CCV	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526305
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	98.3	5.00	100.0	0	98.3 90 110

Sample ID: R24472ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472
Client ID: ICV	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526306
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	94.7	5.00	100.0	0	94.7 90 110

Sample ID: MB-R24472	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472
Client ID: PBW	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526307
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: LCS-R24472	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472
Client ID: LCSW	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526308
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	94.1	5.00	100.0	0	94.1 85 115

Qualifiers:

%X Value exceeds Maximum Contaminant Level	E Estimated, detected above quantitation range	H Holding times for preparation or analysis exceeded
M Manual Integration used to determine area response	ND Not Detected at the Reporting Limit	P Second column confirmation exceeds
R RPD outside accepted recovery limits	RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1206D59
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24472CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472						
Client ID: CCV	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526317						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	91.2	5.00	100.0	0	91.2	90	110				

Sample ID: R24472CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472						
Client ID: CCB	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526318						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R24472CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472						
Client ID: CCV	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526329						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	96.6	5.00	100.0	0	96.6	90	110				

Sample ID: R24472CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472						
Client ID: CCB	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526330						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R24472CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472						
Client ID: CCV	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526341						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	96.6	5.00	100.0	0	96.6	90	110				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1206D59
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24472CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472
Client ID: CCB	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526342
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: R24472CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472
Client ID: CCV	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526353
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	103	5.00	100.0	0	103 90 110
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Sample ID: R24472CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472
Client ID: CCB	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526354
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: R24472CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472
Client ID: CCV	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526358
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	95.9	5.00	100.0	0	95.9 90 110
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Sample ID: R24472CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24472
Client ID: CCB	Batch ID: R24472	TestNo: A4500-CI- E		Analysis Date: 06/28/12	SeqNo: 526359
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1206D59
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R24474	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: PBW	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526416						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) ND 0.0200

Sample ID: R24474ICV	SampType: ICV	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: ICV	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526417						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) 0.467 0.0200 0.5000 0 93.5 90 110

Sample ID: 1206B67-001BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: ZZZZZ	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526419						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) 0.465 0.0200 0.5000 0.01481 90.0 80 120

Sample ID: 1206B67-001BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: ZZZZZ	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526420						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) 0.462 0.0200 0.5000 0.01481 89.5 80 120 0.4649 0.526 20

Sample ID: BLK	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: PBW	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526447						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrogen, Ammonia (As N) ND 0.0200

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206D59**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: BLK	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24474						
Client ID: PBW	Batch ID: R24474	TestNo: A4500-NH3 D		Analysis Date: 06/28/12	SeqNo: 526491						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	ND	0.0200									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206D59**
 13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: MB-10039	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/28/12	RunNo: 24492
Client ID: PBW	Batch ID: 10039	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/28/12	SeqNo: 526601
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P)	ND	0.0120									
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Sample ID: LCS-10039	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/28/12	RunNo: 24492
Client ID: LCSW	Batch ID: 10039	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/28/12	SeqNo: 526602
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P)	0.0534	0.0120	0.05000	0	107	85	115				
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Sample ID: 1206B67-001BMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/28/12	RunNo: 24492
Client ID: ZZZZZ	Batch ID: 10039	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/28/12	SeqNo: 526604
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P)	0.0598	0.0120	0.05000	0.01278	94.2	80	120				
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Sample ID: 1206B67-001BMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 06/28/12	RunNo: 24492
Client ID: ZZZZZ	Batch ID: 10039	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 06/28/12	SeqNo: 526605
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P)	0.0570	0.0120	0.05000	0.01278	88.4	80	120	0.05985	4.97	13.7	
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Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1206D59**
13-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R24531	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24531						
Client ID: PBW	Batch ID: R24531	TestNo: A2540D		Analysis Date: 06/29/12	SeqNo: 528209						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	ND	1.00									

Sample ID: 1206D59-001ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24531						
Client ID: 1hr - 500' Downstre	Batch ID: R24531	TestNo: A2540D		Analysis Date: 06/29/12	SeqNo: 528211						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	0.800	2.00						0.8000	0	10	J

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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CHAIN OF CUSTODY RECORD

Electronic Version

Company Name: Ryba Marine
 Company Address: 629 N. Main Street / PO Box 265
 City: Cheboygan State: MI Zip: 49721
 Phone: Fax: Fax Report
 Email Address: Email Report
 Project ID / Location: Waukegan Harbor Dredging FY11
 Project Manager (Report to): Wayne Moon
 Sample Collector(s): JPSZ JRELDON

TURNAROUND TIME REQUESTED
 Normal RUSH* *Additional Rush Charges Approved.
 *Date & Time Needed:
 Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.
 Specify Regulatory Program: (Required) None/Info only
 LUST SRP SDWA
 503 Sludge NPDES MWRDGC
 Disposal Other *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED
 Enter an "X" in box below for request

TSS	Chloride	Ammonia	Phosphorus	Hardness
X	X			
		X	X	
			X	
				X
X	X			
		X	X	
			X	

Page 2 of 2
 PO No.
 Shipping Method: SLI
 QC Reporting Level: 1 2 3
LAB USE ONLY
 SLI Order No: 1006D59
 Sample containers supplied by customer? Yes
 Temperature of Received Samples: 41 °C
 Samples received within 24 hours of collection? Yes

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	R	Condition	Split	LAB #
	DATE	TIME			Qty	SIZE & TYPE										
1 1000' upstream, surface	6/27/12	11:15 AM	SW	G	1	1LP	none	X	X							5A
2					1	1LP	H2SO4			X	X					5B
3					1	500p	HNO3				X					5C
4 1000' upstream, mid-depth	6/27/12	11:30 AM	SW	G	1	1LP	none	X	X							6A
5					1	1LP	H2SO4			X	X					6B
6					1	500p	HNO3				X					6C
7 Blind duplicate	6/27/12	11:44 AM	SW	G	1	1LP	none	X	X							7A
8					1	1LP	H2SO4			X	X					7B
9					1	500p	HNO3				X					7C
10																
11																
12																

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H₂SO₄, HCl, HNO₃, Methanol (MeOH), NaOH, Sodium Bisulfate (Na₂S), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:
 * Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11

- CONDITION CODES**
1. Improper/damaged container/cap
 2. Improper preservation
 3. Insufficient sample volume
 4. Headspace/air bubbles for VOCs
 5. Received past holding time
 6. Received frozen
 7. Label conflicts with COC

1. Relinquished By:	Date: 6/27/12	2. Relinquished By:	Date:	3. Relinquished By:	Date:	4. Relinquished By:	Date:
Received By:	Time: 3:25 pm	Received By:	Time:	Received By:	Time:	Received By:	Time:

Submission of samples subject to Terms and Conditions on back. Rev. 2/01/05 Please fill out this form completely, print, sign & submit with samples. Keep a copy for your records.



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Luedtke Engineering Company

FY10 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Suburban Labs Field Sampling Technician(s) - PRINT: <i>PAT IRELAND</i>		Placement area (circle): <i>(1) 2</i>		Eutech Inst. Oakton Field pH Meter, pHTestr 30 Serial No.: <i>819766</i>	
Luedtke Engineering Rep. - PRINT: <i>WAYNE MOON</i>		GPS coordinates of discharge point: <i>E1124510 N2067970</i>		Scow name and quantity of discharge: <i>Scow 252 130 yds</i>	
Weather and water conditions: <i>SUNNY WINDY</i>		Date of Discharge: <i>6/27/12</i>		Time of Discharge: <i>8:45 AM</i>	
	1hr-500' downstream Surface	1hr-500' downstream Mid-depth	4hr-500' downstream Surface	4hr-500' downstream Mid-depth	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab	grab	Kemmerer - grab	
GPS coordinate (Lat./Long.) of sample collection: ¹	<i>E 1124510 N 2067340</i> →				
GPS coordinate (state plane) of sample collection: ¹	<i>NAD 83</i> →				
Water column depth to the nearest foot: ¹	<i>23</i>		<i>23</i>		
Sampling depth to the nearest foot: (enter zero for surface water samples)	<i>0</i>	<i>11</i>	<i>0</i>	<i>11</i>	
Date & Time of collection:	<i>6/27/12 9:55 am</i>	<i>6/27/12 10:12 am</i>	<i>6/27/12 12:53 pm</i>	<i>6/27/12 1:10 pm</i>	
Sample appearance: (clear, tinted, dark, etc.)	<i>CLEAR</i>	<i>CLEAR</i>	<i>CLEAR</i>	<i>CLEAR</i>	
pH & Time of reading:	<i>8.68</i>	<i>8.70</i>	<i>9.33</i>	<i>9.42</i>	
Temperature (degrees C):	<i>18.7</i>	<i>20.8</i>	<i>21.7</i>	<i>21.4</i>	
Comments:					

See also chain of custody form for bottles and preservatives



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Luedtke Engineering Company

FY10 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Date of Discharge: 6/27/12				
	1000' upstream Surface	1000' upstream Mid-depth	Blind Duplicate	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab		WINDY UP TO 5' WAVES
GPS coordinate (Lat./Long.) of sample collection: ¹	E1124510 N 2068870 →			
GPS coordinate (state plane) of sample collection: ¹	NAD 83		NAD 83	
Water column depth to the nearest foot: ¹	17		17	
Sampling depth to the nearest foot: (enter zero for surface water samples)	0		8	
Date & Time of collection:	6/27/12 11:12 AM	6/27/12 11:30 AM	6/27/12 11:44 AM	
Sample appearance: (clear, tinted, dark, etc..)	CLEAR		CLEAR	
pH & Time of reading:	9.05		8.94	
Temperature (degrees C):	21.7		22.2	
Blind Duplicate sample ID:				
Comments:				

See also chain of custody form for bottles and preservatives

Version 0 06/16/2010

SIGNATURES:

SLI Field Tech 1: 

SLI Field Tech 2: _____

SUBURBAN LABORATORIES, Inc.



4140 Litt Drive Hillside, Illinois 60162
Tel. (708) 544-3260 Toll Free (800) 783-LABS
Fax (708) 544-8587
www.suburbanlabs.com

July 16, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1207113

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 7 sample(s) on 07/04/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,



Melissa Amador
Project Manager





Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

Case Narrative

Client: Ryba Marine Construction Co.

Date: July 16, 2012

Project: Waukegan Harbor Approach Channel Dredgin

PO #:

WorkOrder: 1207113

QC Level:

Temperature of samples upon receipt at SLI: 5 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredging

Workorder: 1207113

Client Sample ID: 1hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1207113-001

Date Received: 07/04/2012 12:10 PM

Collection Date: 07/03/2012 1:34 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	13.4	0.500		mg/L	1	07/05/2012 4:07 PM	R24718
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.08			pH			
Temperature	24.5			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	141	0.050	c	mg/L	1	07/09/2012 10:30 AM	10185
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0226	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00985	0.00500	J	mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	07/09/2012 1:32 PM	R24785

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredging

Workorder: 1207113

Client Sample ID: 1hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1207113-002

Date Received: 07/04/2012 12:10 PM

Collection Date: 07/03/2012 1:42 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE							
Chloride	10.3	0.500		mg/L	1	07/05/2012 4:07 PM	R24718
FIELD PARAMETERS							
pH, Field	8.24			pH			
Temperature	22.6			C			
HARDNESS, TOTAL							
Hardness, Ca/Mg (As CaCO3)	147	0.050	c	mg/L	1	07/09/2012 10:30 AM	10185
AMMONIA, BY SELECTIVE ELECTRODE							
Nitrogen, Ammonia (As N)	0.0216	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL							
Phosphorus (As P)	0.00812	0.00500	J	mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS							
Residue, Non-Filterable	ND	0.400		mg/L	1	07/09/2012 1:32 PM	R24785

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207113

Client Sample ID: 4hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1207113-003

Date Received: 07/04/2012 12:10 PM

Collection Date: 07/03/2012 4:35 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.26	0.500		mg/L	1	07/05/2012 4:07 PM	R24718
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	9.66			pH			
Temperature	23.9			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	139	0.050	c	mg/L	1	07/09/2012 10:30 AM	10185
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0172	0.0100	J	mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00928	0.00500	J	mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	ND	0.400		mg/L	1	07/09/2012 1:32 PM	R24785

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredging

Workorder: 1207113

Client Sample ID: 4hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1207113-004

Date Received: 07/04/2012 12:10 PM

Collection Date: 07/03/2012 4:43 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.92	0.500		mg/L	1	07/05/2012 4:07 PM	R24718
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	9.42			pH			
Temperature	23.9			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	136	0.050	c	mg/L	1	07/09/2012 10:30 AM	10185
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0138	0.0100	J	mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0186	0.00500		mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.400	0.400	J	mg/L	1	07/09/2012 1:32 PM	R24785

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207113

Client Sample ID: 1000' Upstream - Surface

Matrix: SURFACE WATER

Lab ID: 1207113-005

Date Received: 07/04/2012 12:10 PM

Collection Date: 07/03/2012 2:21 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.0	0.500		mg/L	1	07/05/2012 4:07 PM	R24718
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.69			pH			
Temperature	23.5			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	147	0.050	c	mg/L	1	07/09/2012 10:30 AM	10185
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0117	0.0100	J	mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00580	0.00500	J	mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	ND	0.400		mg/L	1	07/09/2012 1:32 PM	R24785

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredging

Workorder: 1207113

Client Sample ID: 1000' Upstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1207113-006

Date Received: 07/04/2012 12:10 PM

Collection Date: 07/03/2012 2:40 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.3	0.500		mg/L	1	07/05/2012 4:07 PM	R24718
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.75			pH			
Temperature	21.5			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	144	0.050	c	mg/L	1	07/09/2012 10:30 AM	10185
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	ND	0.00500		mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	ND	0.400		mg/L	1	07/09/2012 1:32 PM	R24785

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|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207113

Client Sample ID: Blind Duplicate

Matrix: SURFACE WATER

Lab ID: 1207113-007

Date Received: 07/04/2012 12:10 PM

Collection Date: 07/03/2012 2:54 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.46	0.500		mg/L	1	07/05/2012 4:07 PM	R24718
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	10.03			pH			
Temperature	21.3			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	137	0.050	c	mg/L	1	07/09/2012 10:30 AM	10185
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0257	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0105	0.00500	J	mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	ND	0.400		mg/L	1	07/09/2012 1:32 PM	R24785

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| Qualifiers: | */x Value exceeds Maximum Contaminant Level | B Analyte detected in the associated Method Blank |
| | c Analyte not in SLI scope of accreditation | E Estimated, detected above quantitation range |
| | G Refer to case narrative page for specific comments | H Holding times for preparation or analysis exceeded |
| | J Analyte detected below quantitation limit (QL) | N Tentatively identified compounds |
| | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| | S Spike Recovery outside accepted recovery limits | |



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 16, 2012
Lab Order: 1207113

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1207113-001B	07/03/12 1:34:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207113-001C		10185	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/06/12
1207113-002B	07/03/12 1:42:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207113-002C		10185	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/06/12
1207113-003B	07/03/12 4:35:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207113-003C		10185	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/06/12
1207113-004B	07/03/12 4:43:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207113-004C		10185	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/06/12
1207113-005B	07/03/12 2:21:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207113-005C		10185	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/06/12
1207113-006B	07/03/12 2:40:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207113-006C		10185	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/06/12
1207113-007B	07/03/12 2:54:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207113-007C		10185	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/06/12



Suburban Laboratories, Inc.
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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1207113

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24718CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24718
Client ID: CCB	Batch ID: R24718	TestNo: A4500-CI- E		Analysis Date: 07/05/12	SeqNo: 531057
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: R24718CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24718
Client ID: CCV	Batch ID: R24718	TestNo: A4500-CI- E		Analysis Date: 07/05/12	SeqNo: 531058
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	99.3	5.00	100.0	0	99.3 90 110
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Sample ID: R24718ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24718
Client ID: ICV	Batch ID: R24718	TestNo: A4500-CI- E		Analysis Date: 07/05/12	SeqNo: 531059
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	103	5.00	100.0	0	103 90 110
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Sample ID: MB-R24718	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24718
Client ID: PBW	Batch ID: R24718	TestNo: A4500-CI- E		Analysis Date: 07/05/12	SeqNo: 531060
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: LCS-R24718	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24718
Client ID: LCSW	Batch ID: R24718	TestNo: A4500-CI- E		Analysis Date: 07/05/12	SeqNo: 531061
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	102	5.00	100.0	0	102 85 115
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Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



Suburban Laboratories, Inc.
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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1207113

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24718CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24718						
Client ID: CCV	Batch ID: R24718	TestNo: A4500-CI- E		Analysis Date: 07/05/12	SeqNo: 531076						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	96.5	5.00	100.0	0	96.5	90	110				

Sample ID: R24718CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24718						
Client ID: CCB	Batch ID: R24718	TestNo: A4500-CI- E		Analysis Date: 07/05/12	SeqNo: 531077						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R24718CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24718						
Client ID: CCV	Batch ID: R24718	TestNo: A4500-CI- E		Analysis Date: 07/05/12	SeqNo: 531088						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	99.8	5.00	100.0	0	99.8	90	110				

Sample ID: R24718CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24718						
Client ID: CCB	Batch ID: R24718	TestNo: A4500-CI- E		Analysis Date: 07/05/12	SeqNo: 531089						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R24718CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24718						
Client ID: CCV	Batch ID: R24718	TestNo: A4500-CI- E		Analysis Date: 07/05/12	SeqNo: 531102						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98.4	5.00	100.0	0	98.4	90	110				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



Suburban Laboratories, Inc.
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 Hillside, IL 60162
 TEL: 708-544-3260 FAX: 708-544-8587
 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1207113

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24718CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24718						
Client ID: CCB	Batch ID: R24718	TestNo: A4500-CI- E		Analysis Date: 07/05/12	SeqNo: 531103						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207113

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R24825	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: PBW	Batch ID: R24825	TestNo: A4500-NH3 D	Analysis Date: 07/10/12	SeqNo: 533005	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	ND	0.0200			

Sample ID: R24825ICV	SampType: ICV	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ICV	Batch ID: R24825	TestNo: A4500-NH3 D	Analysis Date: 07/10/12	SeqNo: 533006	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.472	0.0200	0.5000	0	94.5 90 110

Sample ID: 1207119-001EMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ZZZZZ	Batch ID: R24825	TestNo: A4500-NH3 D	Analysis Date: 07/10/12	SeqNo: 533008	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.470	0.0200	0.5000	0.03297	87.4 80 120

Sample ID: 1207119-001EMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ZZZZZ	Batch ID: R24825	TestNo: A4500-NH3 D	Analysis Date: 07/10/12	SeqNo: 533009	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.471	0.0200	0.5000	0.03297	87.6 80 120 0.4699 0.187 20

Sample ID: R24825CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: CCB	Batch ID: R24825	TestNo: A4500-NH3 D	Analysis Date: 07/10/12	SeqNo: 533019	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	ND	0.0200			

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207113

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: R24825CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: CCB	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533039
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) ND 0.0200

Sample ID: 1207270-002BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ZZZZZ	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533041
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) 0.469 0.0200 0.5000 0.01137 91.5 80 120

Sample ID: 1207270-002BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ZZZZZ	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533042
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) 0.467 0.0200 0.5000 0.01137 91.2 80 120 0.4690 0.380 20

Sample ID: R24825CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: CCB	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533049
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) ND 0.0200

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207113

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: LCS-10206	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/09/12	RunNo: 24814
Client ID: LCSW	Batch ID: 10206	TestNo: A4500-P BE A4500-P BE		Analysis Date: 07/09/12	SeqNo: 532571
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0482	0.0120	0.05000	0	96.5 85 115

Sample ID: MB-10206	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/09/12	RunNo: 24814
Client ID: PBW	Batch ID: 10206	TestNo: A4500-P BE A4500-P BE		Analysis Date: 07/09/12	SeqNo: 532572
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	ND	0.0120			

Sample ID: 1207119-001EDUP	SampType: DUP	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/09/12	RunNo: 24814
Client ID: ZZZZZ	Batch ID: 10206	TestNo: A4500-P BE A4500-P BE		Analysis Date: 07/09/12	SeqNo: 532574
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.00638	0.0120			0.005800 9.45 20 J

Sample ID: 1207119-001EMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/09/12	RunNo: 24814
Client ID: ZZZZZ	Batch ID: 10206	TestNo: A4500-P BE A4500-P BE		Analysis Date: 07/09/12	SeqNo: 532575
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0523	0.0120	0.05000	0.005800	93.0 80 120

Sample ID: 1207119-001EMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/09/12	RunNo: 24814
Client ID: ZZZZZ	Batch ID: 10206	TestNo: A4500-P BE A4500-P BE		Analysis Date: 07/09/12	SeqNo: 532576
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0546	0.0120	0.05000	0.005800	97.7 80 120 0.05230 4.35 13.7

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207113
 16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R24785	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24785						
Client ID: PBW	Batch ID: R24785	TestNo: A2540D		Analysis Date: 07/09/12	SeqNo: 532758						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	ND	1.00									

Sample ID: 1207106-001ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24785						
Client ID: ZZZZZZ	Batch ID: R24785	TestNo: A2540D		Analysis Date: 07/09/12	SeqNo: 532772						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	23.0	5.00						21.00	9.09	10	

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



Suburban Laboratories, Inc.

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Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Suburban Labs Field Sampling Technician(s) - PRINT: <i>PAT IRELAN</i>		Placement area (circle): <i>(1) 2</i>		Eutech Inst. Oakton Field pH Meter, pHTestr 30 Serial No.: <i>819766</i>	
Luedtke Engineering Rep. - PRINT: <i>WAYNE MOON</i>		GPS coordinates of discharge point: ¹ <i>E 1124780 N 2068660</i>		Scow name and quantity of discharge: ¹ <i>Scow 758</i>	
Weather and water conditions: <i>SUNNY - HOT</i>		Date of Discharge: <i>7/3/12</i>		Time of Discharge: ¹ <i>12:30 pm</i>	
	1hr-500' downstream Surface	1hr-500' downstream Mid-depth	4hr-500' downstream Surface	4hr-500' downstream Mid-depth	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab	grab	Kemmerer - grab	
GPS coordinate (Lat./Long.) of sample collection: ¹	<i>E1124780 N2068160</i>				
GPS coordinate (state plane) of sample collection: ¹	<i>NAD 83</i>		<i>NAD 83</i>		
Water column depth to the nearest foot: ¹	<i>15</i>		<i>15</i>		
Sampling depth to the nearest foot: (enter zero for surface water samples)	<i>0</i>	<i>7</i>	<i>0</i>	<i>7</i>	
Date & Time of collection:	<i>7/3/12 1:34 pm</i>	<i>7/3/12 1:42 pm</i>	<i>7/3/12 4:35 pm</i>	<i>7/3/12 4:43 pm</i>	
Sample appearance: (clear, tinted, dark, etc..)	<i>Clear</i>	<i>Clear</i>			
pH & Time of reading:	<i>8.08</i>	<i>8.24</i>	<i>9.66</i>	<i>9.62</i>	
Temperature (degrees C):	<i>24.5°C</i>	<i>22.6°C</i>	<i>23.9</i>	<i>23.2</i>	
Comments:					

See also chain of custody form for bottles and preservatives



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Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
 Weekly water sampling

Date of Discharge: 7/31/12				
	1000' upstream Surface	1000' upstream Mid-depth	Blind Duplicate	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab		
GPS coordinate (Lat./Long.) of sample collection: ¹	E1124780 N2069660 →			
GPS coordinate (state plane) of sample collection: ¹	NAD 83		NAD 83	
Water column depth to the nearest foot: ¹	17		17	
Sampling depth to the nearest foot: (enter zero for surface water samples)	0	8	8	
Date & Time of collection:	7/31/12 2:21 pm	7/31/12 2:40 pm	7/31/12 2:54 pm	
Sample appearance: (clear, tinted, dark, etc..)	CLEAR	CLEAR	CLEAR	
pH & Time of reading:	8.69	8.75	10.03	
Temperature (degrees C):	23.5°C	21.5°C	21.3°C	
Blind Duplicate sample ID:			DUP 1000 MD	
Comments:			CLEAR DUMP	

See also chain of custody form for bottles and preservatives

Version 0 06/16/2010

SIGNATURES:

SLI Field Tech 1:  _____

SLI Field Tech 2: _____

SUBURBAN LABORATORIES, Inc.



4140 Litt Drive Hillside, Illinois 60162
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July 16, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1207209

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 7 sample(s) on 07/06/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,



Melissa Amador
Project Manager





Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

Case Narrative

Client: Ryba Marine Construction Co.

Date: July 16, 2012

Project: Waukegan Harbor Approach Channel Dredgin

PO #:

WorkOrder: 1207209

QC Level:

Temperature of samples upon receipt at SLI: 2 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207209

Client Sample ID: 1hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1207209-001

Date Received: 07/06/2012 1:32 PM

Collection Date: 07/05/2012 12:43 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	8.49	0.500		mg/L	1	07/09/2012 11:52 AM	R24796
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.15			pH			
Temperature	25.8			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO3)	138	0.050	c	mg/L	1	07/10/2012 3:15 PM	10216
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH3 F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0134	0.00500		mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	07/10/2012 3:11 PM	R24834

- Qualifiers:**
- * / x Value exceeds Maximum Contaminant Level
 - c Analyte not in SLI scope of accreditation
 - G Refer to case narrative page for specific comments
 - J Analyte detected below quantitation limit (QL)
 - ND Not Detected at the Reporting Limit
 - S Spike Recovery outside accepted recovery limits
 - B Analyte detected in the associated Method Blank
 - E Estimated, detected above quantitation range
 - H Holding times for preparation or analysis exceeded
 - N Tentatively identified compounds
 - R RPD outside accepted recovery limits



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredging

Workorder: 1207209

Client Sample ID: 1hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1207209-002

Date Received: 07/06/2012 1:32 PM

Collection Date: 07/05/2012 12:58 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.96	0.500		mg/L	1	07/09/2012 1:32 PM	R24797
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.85			pH			
Temperature	23.5			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	138	0.050	c	mg/L	1	07/10/2012 3:15 PM	10216
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00520	0.00500	J	mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	07/10/2012 3:11 PM	R24834

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207209

Client Sample ID: 4hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1207209-003

Date Received: 07/06/2012 1:32 PM

Collection Date: 07/05/2012 3:42 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.2	0.500		mg/L	1	07/09/2012 1:32 PM	R24797
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.09			pH			
Temperature	25.3			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	136	0.050	c	mg/L	1	07/10/2012 3:15 PM	10216
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0122	0.00500		mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	07/10/2012 3:11 PM	R24834

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207209

Client Sample ID: 4hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1207209-004

Date Received: 07/06/2012 1:32 PM

Collection Date: 07/05/2012 3:51 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.3	0.500		mg/L	1	07/09/2012 1:32 PM	R24797
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.12			pH			
Temperature	23.4			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	138	0.050	c	mg/L	1	07/10/2012 3:15 PM	10216
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00638	0.00500	J	mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	07/10/2012 3:11 PM	R24834

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207209

Client Sample ID: 1000' Upstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1207209-006

Date Received: 07/06/2012 1:32 PM

Collection Date: 07/05/2012 2:02 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.00	0.500		mg/L	1	07/09/2012 1:32 PM	R24797
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.91			pH			
Temperature	23.7			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO3)	136	0.050	c	mg/L	1	07/10/2012 3:15 PM	10216
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH3 F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0119	0.0100	J	mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0244	0.00500		mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	07/10/2012 3:11 PM	R24834

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207209

Client Sample ID: Blind Duplicate

Matrix: SURFACE WATER

Lab ID: 1207209-007

Date Received: 07/06/2012 1:32 PM

Collection Date: 07/05/2012 2:01 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.06	0.500		mg/L	1	07/09/2012 1:32 PM	R24797
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	9.38			pH			
Temperature	25.7			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	135	0.050	c	mg/L	1	07/10/2012 3:15 PM	10216
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0215	0.00500		mg/L	1	07/09/2012 7:12 PM	10206
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	0.800	0.400	J	mg/L	1	07/10/2012 3:11 PM	R24834

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 16, 2012
Lab Order: 1207209

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1207209-001B	07/05/12 12:43:00 P	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207209-001C		10216	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/09/12
1207209-002B	07/05/12 12:58:00 P	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207209-002C		10216	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/09/12
1207209-003B	07/05/12 3:42:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207209-003C		10216	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/09/12
1207209-004B	07/05/12 3:51:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207209-004C		10216	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/09/12
1207209-005B	07/05/12 1:52:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207209-005C		10216	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/09/12
1207209-006B	07/05/12 2:02:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207209-006C		10216	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/09/12
1207209-007B	07/05/12 2:01:00 PM	10206	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/09/12
1207209-007C		10216	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/09/12



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1207209

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24796CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24796
Client ID: CCB	Batch ID: R24796	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532189
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: R24796CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24796
Client ID: CCV	Batch ID: R24796	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532190
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	98.3	5.00	100.0	0	98.3 90 110
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Sample ID: R24796ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24796
Client ID: ICV	Batch ID: R24796	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532191
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	101	5.00	100.0	0	101 90 110
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Sample ID: MB-R24796	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24796
Client ID: PBW	Batch ID: R24796	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532192
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: LCS-R24796	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24796
Client ID: LCSW	Batch ID: R24796	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532193
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	94.6	5.00	100.0	0	94.6 85 115
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Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1207209

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24796CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24796
Client ID: CCV	Batch ID: R24796	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532199
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	90.9	5.00	100.0	0	90.9 90 110

Sample ID: R24796CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24796
Client ID: CCB	Batch ID: R24796	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532200
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: R24796CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24796
Client ID: CCV	Batch ID: R24796	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532211
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	95.9	5.00	100.0	0	95.9 90 110

Sample ID: R24796CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24796
Client ID: CCB	Batch ID: R24796	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532212
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: R24797CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24797
Client ID: CCB	Batch ID: R24797	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532270
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207209

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24797CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24797						
Client ID: CCV	Batch ID: R24797	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532271						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	5.00	100.0	0	100	90	110				

Sample ID: R24797ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24797						
Client ID: ICV	Batch ID: R24797	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532272						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	103	5.00	100.0	0	103	90	110				

Sample ID: MB-R24797	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24797						
Client ID: PBW	Batch ID: R24797	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532273						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: LCS-R24797	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24797						
Client ID: LCSW	Batch ID: R24797	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532274						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	95.7	5.00	100.0	0	95.7	85	115				

Sample ID: 1207119-001FMS	SampType: MS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24797						
Client ID: ZZZZZZ	Batch ID: R24797	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532276						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	109	5.00	100.0	9.990	98.6	80	120				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207209

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: 1207119-001FMSD	SampType: MSD	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24797						
Client ID: ZZZZZ	Batch ID: R24797	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532277						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	109	5.00	100.0	9.990	99.1	80	120	108.6	0.450	20	

Sample ID: R24797CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24797						
Client ID: CCV	Batch ID: R24797	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532282						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	94.8	5.00	100.0	0	94.8	90	110				

Sample ID: R24797CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24797						
Client ID: CCB	Batch ID: R24797	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532283						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R24797CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24797						
Client ID: CCV	Batch ID: R24797	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532291						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	95.0	5.00	100.0	0	95.0	90	110				

Sample ID: R24797CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24797						
Client ID: CCB	Batch ID: R24797	TestNo: A4500-CI- E		Analysis Date: 07/09/12	SeqNo: 532292						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.720	5.00									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207209

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R24825	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: PBW	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533005
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

ND 0.0200

Sample ID: R24825ICV	SampType: ICV	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ICV	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533006
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.472 0.0200 0.5000 0 94.5 90 110

Sample ID: 1207119-001EMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ZZZZZ	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533008
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.470 0.0200 0.5000 0.03297 87.4 80 120

Sample ID: 1207119-001EMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ZZZZZ	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533009
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

0.471 0.0200 0.5000 0.03297 87.6 80 120 0.4699 0.187 20

Sample ID: R24825CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: CCB	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533019
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N)

ND 0.0200

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207209

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: R24825CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: CCB	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533039
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) ND 0.0200

Sample ID: 1207270-002BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ZZZZZ	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533041
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) 0.469 0.0200 0.5000 0.01137 91.5 80 120

Sample ID: 1207270-002BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ZZZZZ	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533042
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) 0.467 0.0200 0.5000 0.01137 91.2 80 120 0.4690 0.380 20

Sample ID: R24825CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: CCB	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533049
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) ND 0.0200

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207209

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: LCS-10206	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/09/12	RunNo: 24814
Client ID: LCSW	Batch ID: 10206	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 07/09/12	SeqNo: 532571
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0482	0.0120	0.05000	0	96.5 85 115

Sample ID: MB-10206	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/09/12	RunNo: 24814
Client ID: PBW	Batch ID: 10206	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 07/09/12	SeqNo: 532572
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	ND	0.0120			

Sample ID: 1207119-001EDUP	SampType: DUP	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/09/12	RunNo: 24814
Client ID: ZZZZZ	Batch ID: 10206	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 07/09/12	SeqNo: 532574
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.00638	0.0120			0.005800 9.45 20 J

Sample ID: 1207119-001EMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/09/12	RunNo: 24814
Client ID: ZZZZZ	Batch ID: 10206	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 07/09/12	SeqNo: 532575
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0523	0.0120	0.05000	0.005800	93.0 80 120

Sample ID: 1207119-001EMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/09/12	RunNo: 24814
Client ID: ZZZZZ	Batch ID: 10206	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 07/09/12	SeqNo: 532576
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0546	0.0120	0.05000	0.005800	97.7 80 120 0.05230 4.35 13.7

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



Suburban Laboratories, Inc.
 4140 Litt Dr
 Hillside, IL 60162
 TEL: 708-544-3260 FAX: 708-544-8587
 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: **1207209**

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R24834	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24834						
Client ID: PBW	Batch ID: R24834	TestNo: A2540D		Analysis Date: 07/10/12	SeqNo: 534038						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	ND	1.00									

Sample ID: 1207226-001ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24834						
Client ID: ZZZZZZ	Batch ID: R24834	TestNo: A2540D		Analysis Date: 07/10/12	SeqNo: 534055						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	23.0	5.00						23.00	0	10	

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



SUBURBAN LABORATORIES, Inc.

4140 Litt Drive Hillside, IL 60162

Tel. 708.544.3260

Fax: 708.544.8587

Toll Free: 800.783.LABS

www.suburbanlabs.com

CHAIN OF CUSTODY RECORD

Electronic Version

Company Name: **Ryba Marine**

Company Address: **629 N. Main Street / PO Box 265**

City: **Cheboygan** State: **MI** Zip: **49721**

Phone: **(231) 627-4333** Fax: **(231) 627-4890** Fax Report

Email Address: **wmoon@rybamarine.com** Email Report

Project ID / Location: **Waukegan Harbor Dredging FY11**

Project Manager (Report to): **Wayne Moon**

Sample Collector(s): **Pat Ireland**

TURNAROUND TIME REQUESTED

Normal RUSH* *Additional Rush Charges Approved.

*Date & Time Needed:
Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.

Specify Regulatory Program: None/Info only (Required)

LUST SRP SDWA
 503 Sludge NPDES MWRDGC
 Disposal Other *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED

Enter an "X" in box below for request

TSS	Chloride	Ammonia	Phosphorus	Hardness
X	X	X	X	X

Page **1** of **2**

PO No.

Shipping Method: **SLI**

QC Reporting Level: 1 2 3

LAB USE ONLY

SLI Order No: **107-709**

Sample containers supplied by customer? Yes

Temperature of Received Samples: **2** °C

Samples received within 24 hours of collection? Yes

R	Condition	Split	LAB #
			1A
			1B
			1C
			2A
			2B
			2C
			3A
			3B
			3C
			4A
			4B
			4C

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/ COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	R	Condition	Split	LAB #
	DATE	TIME			Qty	SIZE & TYPE										
1 1hr-500' downstream, surface	7/5/12	12:43 pm	SW	G	1	1LP	none	X	X							1A
2					1	1LP	H2SO4			X	X					1B
3					1	500p	HNO3					X				1C
4 1hr-500' downstream, mid-depth	7/5/12	12:58 pm	SW	G	1	1LP	none	X	X							2A
5					1	1LP	H2SO4			X	X					2B
6					1	500p	HNO3					X				2C
7 4hr-500' downstream, surface	7/5/12	3:12 pm	SW	G	1	1LP	none	X	X							3A
8					1	1LP	H2SO4			X	X					3B
9					1	500p	HNO3					X				3C
10 4hr-500' downstream, mid-depth	7/5/12	3:51 pm	SW	G	1	1LP	none	X	X							4A
11					1	1LP	H2SO4			X	X					4B
12					1	500p	HNO3					X				4C

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H₂SO₄, HCl, HNO₃, Methanol (MeOH), NaOH, Sodium Bisulfate (NaHS), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:

* Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11

- CONDITION CODES**
1. Improper/damaged container/cap
 2. Improper preservation
 3. Insufficient sample volume
 4. Headspace/air bubbles for VOCs
 5. Received past holding time
 6. Received frozen
 7. Label conflicts with COC

1. Relinquished By: <i>[Signature]</i> Date: 7/16/12	2. Relinquished By: _____ Date: _____	3. Relinquished By: _____ Date: _____	4. Relinquished By: _____ Date: _____
Received By: <i>[Signature]</i> Time: 12:43 <input checked="" type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice	Received By: _____ Time: _____ <input type="checkbox"/> Ice

Submission of samples subject to Terms and Conditions on back. Rev. 2/01/05 Please fill out this form completely, print, sign & submit with samples. Keep a copy for your records.



SUBURBAN LABORATORIES, Inc.

4140 Litt Drive Hillside, IL 60162 Tel. 708.544.3260 Fax: 708.544.8587 Toll Free: 800.783.LABS www.suburbanlabs.com

CHAIN OF CUSTODY RECORD

Electronic Version

Company Name: **Ryba Marine**
 Company Address: **629 N. Main Street / PO Box 265**
 City: **Cheboygan** State: **MI** Zip: **49721**
 Phone: _____ Fax: _____ Fax Report
 Email Address: _____ Email Report
 Project ID / Location: **Waukegan Harbor Dredging FY11**
 Project Manager (Report to): **Wayne Moon**
 Sample Collector(s): **Pat Jozom**

TURNAROUND TIME REQUESTED
 Normal RUSH* *Additional Rush Charges Approved.
 *Date & Time Needed:
 Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.
 Specify Regulatory Program: (Required) None/Info only
 LUST SRP SDWA
 503 Sludge NPDES MWRDGC
 Disposal Other *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED
 Enter an "X" in box below for request

TSS	Chloride	Ammonia	Phosphorus	Hardness
X	X			
		X	X	
			X	
		X	X	
			X	
X	X			
		X	X	
			X	

Page **2** of **2**
 PO No. _____
 Shipping Method: **SLI**
 QC Reporting Level: 1 2 3
LAB USE ONLY
 SLI Order #: **107-209**
 Sample containers supplied by customer? Yes
 Temperature of Received Samples: **2** °C
 Samples received within 24 hours of collection? Yes

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	R	Condition	Split	LAB #
	DATE	TIME			Qty	SIZE & TYPE										
1 1000' upstream, surface	7/15/12	1:52 pm	SW	G	1	1LP	none	X	X							5A
2 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X					5B
3 ↓	↓	↓	↓	↓	1	500p	HNO3					X				5C
4 1000' upstream, mid-depth	7/15/12	2:00 pm	SW	G	1	1LP	none	X	X							6A
5 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X					6B
6 ↓	↓	↓	↓	↓	1	500p	HNO3					X				6C
7 Blind duplicate	7/15/12	2:10 pm	SW	G	1	1LP	none	X	X							7A
8 ↓	↓	↓	↓	↓	1	1LP	H2SO4			X	X					7B
9 ↓	↓	↓	↓	↓	1	500p	HNO3					X				7C
10																
11																
12																

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H₂SO₄, HCl, HNO₃, Methanol (MeOH), NaOH, Sodium Bisulfate (NaBS), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:
 * Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11

- CONDITION CODES**
1. Improper/damaged container/cap
 2. Improper preservation
 3. Insufficient sample volume
 4. Headspace/air bubbles for VOCs
 5. Received past holding time
 6. Received frozen
 7. Label conflicts with COC

1. Relinquished By:	Date: 7/16/12	2. Relinquished By:	Date:	3. Relinquished By:	Date:	4. Relinquished By:	Date:
Received By:	Time: 1:29	Received By:	Time:	Received By:	Time:	Received By:	Time:

Submission of samples subject to Terms and Conditions on back. Rev. 2/01/05 Please fill out this form completely, print, sign & submit with samples. Keep a copy for your records.



Suburban Laboratories, Inc.

4140 Litt Drive
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Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Suburban Labs Field Sampling Technician(s) - PRINT: PAT IRELDON		Placement area (circle): 1 2		Eutech Inst. Oakton Field pH Meter, pHTestr 30 Serial No.: 819766	
Luedtke Engineering Rep. - PRINT: WAYNE MOON		GPS coordinates of discharge point: ¹ 1125050 E 2068810 N		Scow name and quantity of discharge: ¹ Scow 758 450 yds	
Weather and water conditions: SUNNY - HOT		Date of Discharge: 7/5/12		Time of Discharge: ¹ 11:30 AM	
	1hr-500' downstream Surface	1hr-500' downstream Mid-depth	4hr-500' downstream Surface	4hr-500' downstream Mid-depth	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab	grab	Kemmerer - grab	
GPS coordinate (Lat./Long.) of sample collection: ¹	E 1125050 N 2068810				
GPS coordinate (state plane) of sample collection: ¹	NAD 83		NAD 83		
Water column depth to the nearest foot: ¹	20		20		
Sampling depth to the nearest foot: (enter zero for surface water samples)	0	10	0	10	
Date & Time of collection:	7/5/12 12:43 AM	7/5/12 12:58 AM	7/5/12 3:42 PM	7/5/12 3:51 PM	
Sample appearance: (clear, tinted, dark, etc..)	CLEAR	CLEAR	CLEAR	CLEAR	
pH & Time of reading:	8.15	8.85	8.09	8.12	
Temperature (degrees C):	25.8	23.5	25.3	23.4	
Comments:					



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 P: (708) 544-3260 F: (708) 544-8587
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Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
 Weekly water sampling

Date of Discharge: 7/5/12				
	1000' upstream Surface	1000' upstream Mid-depth	Blind Duplicate	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab		
GPS coordinate (Lat./Long.) of sample collection: ¹	E 1125050 N 2069810 →			
GPS coordinate (state plane) of sample collection: ¹	NAD 83		NAD 83	
Water column depth to the nearest foot: ¹	22		22	
Sampling depth to the nearest foot: (enter zero for surface water samples)	0	11	0	
Date & Time of collection:	7/5/12 1:52 pm	7/5/12 2:02 pm	7/5/12 2:10 pm	
Sample appearance: (clear, tinted, dark, etc..)				
pH & Time of reading:	9.02	8.91	9.38	
Temperature (degrees C):	25.5°C	23.7	25.7	
Blind Duplicate sample ID:			DUP	
Comments:			1000 SURFACE	

See also chain of custody form for bottles and preservatives

Version 0 06/16/2010

SIGNATURES:

SLI Field Tech 1: 

SLI Field Tech 2: _____



July 16, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1207270

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 7 sample(s) on 07/09/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,



Melissa Amador
Project Manager





Client: Ryba Marine Construction Co.

Date: July 16, 2012

Project: Waukegan Harbor Approach Channel Dredgin

PO #:

WorkOrder: 1207270

QC Level:

Temperature of samples upon receipt at SLI: 6 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredging

Workorder: 1207270

Client Sample ID: 1hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1207270-001

Date Received: 07/09/2012 2:00 PM

Collection Date: 07/09/2012 8:48 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	11.4	0.500		mg/L	1	07/12/2012 10:45 AM	R24938
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.56			pH			
Temperature	25.4			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	133	0.050	c	mg/L	1	07/11/2012 2:25 PM	10233
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00985	0.00500	J	mg/L	1	07/10/2012 2:22 PM	10225
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	1.20	0.400	J	mg/L	1	07/11/2012 2:35 PM	R24888

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredging

Workorder: 1207270

Client Sample ID: 1hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1207270-002

Date Received: 07/09/2012 2:00 PM

Collection Date: 07/09/2012 8:59 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	11.6	0.500		mg/L	1	07/12/2012 10:45 AM	R24938
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	8.78			pH			
Temperature	24.8			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	132	0.050	c	mg/L	1	07/11/2012 2:25 PM	10233
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	0.0114	0.0100	J	mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0128	0.00500		mg/L	1	07/10/2012 2:22 PM	10225
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	ND	0.400		mg/L	1	07/11/2012 2:35 PM	R24888

- | | | | | |
|--------------------|-----|--|---|--|
| Qualifiers: | */x | Value exceeds Maximum Contaminant Level | B | Analyte detected in the associated Method Blank |
| | c | Analyte not in SLI scope of accreditation | E | Estimated, detected above quantitation range |
| | G | Refer to case narrative page for specific comments | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limit (QL) | N | Tentatively identified compounds |
| | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| | S | Spike Recovery outside accepted recovery limits | | |



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207270

Client Sample ID: 4hr - 500' Downstream - Surface

Matrix: SURFACE WATER

Lab ID: 1207270-003

Date Received: 07/09/2012 2:00 PM

Collection Date: 07/09/2012 11:41 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	10.4	0.500		mg/L	1	07/12/2012 10:45 AM	R24938
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	10.17			pH			
Temperature	25.4			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	133	0.050	c	mg/L	1	07/11/2012 2:25 PM	10233
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.00985	0.00500	J	mg/L	1	07/10/2012 2:22 PM	10225
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	1.20	0.400	J	mg/L	1	07/11/2012 2:35 PM	R24888

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207270

Client Sample ID: 4hr - 500' Downstream - Mid-Depth

Matrix: SURFACE WATER

Lab ID: 1207270-004

Date Received: 07/09/2012 2:00 PM

Collection Date: 07/09/2012 11:58 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992		Analyst: LAP			
Chloride	9.22	0.500		mg/L	1	07/12/2012 10:45 AM	R24938
FIELD PARAMETERS		Method:		Analyst:			
pH, Field	9.60			pH			
Temperature	24.9			C			
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992		Analyst: jos			
Hardness, Ca/Mg (As CaCO ₃)	128	0.050	c	mg/L	1	07/11/2012 2:25 PM	10233
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992		Analyst: vyc			
Nitrogen, Ammonia (As N)	ND	0.0100		mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992		Analyst: vyc			
Phosphorus (As P)	0.0110	0.00500	J	mg/L	1	07/10/2012 2:22 PM	10225
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992		Analyst: sb			
Residue, Non-Filterable	ND	0.400		mg/L	1	07/11/2012 2:35 PM	R24888

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 16, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207270

Client Sample ID: 1000' Upstream - Surface

Matrix: SURFACE WATER

Lab ID: 1207270-005

Date Received: 07/09/2012 2:00 PM

Collection Date: 07/09/2012 11:07 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
CHLORIDE							
		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992			Analyst: LAP		
Chloride	8.46	0.500		mg/L	1	07/12/2012 10:45 AM	R24938
FIELD PARAMETERS							
		Method:			Analyst:		
pH, Field	9.50			pH			
Temperature	25.4			C			
HARDNESS, TOTAL							
		Method: SM-2340B-Rev 18Ed, 1992			Analyst: jos		
Hardness, Ca/Mg (As CaCO ₃)	134	0.050	c	mg/L	1	07/11/2012 2:25 PM	10233
AMMONIA, BY SELECTIVE ELECTRODE							
		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992			Analyst: vyc		
Nitrogen, Ammonia (As N)	0.0115	0.0100	J	mg/L	1	07/10/2012 10:41 AM	R24825
PHOSPHORUS, TOTAL							
		Method: SM-M4500P BE-Rev 18Ed, 1992			Analyst: vyc		
Phosphorus (As P)	0.0134	0.00500		mg/L	1	07/10/2012 2:22 PM	10225
TOTAL SUSPENDED SOLIDS							
		Method: SM-M2540D-Rev 18Ed, 1992			Analyst: sb		
Residue, Non-Filterable	ND	0.400		mg/L	1	07/11/2012 2:35 PM	R24888

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 16, 2012
Lab Order: 1207270

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1207270-001B	07/09/12 8:48:00 AM	10225	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/10/12
1207270-001C		10233	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/10/12
1207270-002B	07/09/12 8:59:00 AM	10225	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/10/12
1207270-002C		10233	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/10/12
1207270-003B	07/09/12 11:41:00 A	10225	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/10/12
1207270-003C		10233	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/10/12
1207270-004B	07/09/12 11:58:00 A	10225	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/10/12
1207270-004C		10233	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/10/12
1207270-005B	07/09/12 11:07:00 A	10225	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/10/12
1207270-005C		10233	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/10/12
1207270-006B	07/09/12 11:26:00 A	10225	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/10/12
1207270-006C		10233	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/10/12
1207270-007B	07/09/12 11:16:00 A	10225	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/10/12
1207270-007C		10233	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		07/10/12



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1207270

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24938CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938
Client ID: CCB	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535663
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: R24938CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938
Client ID: CCV	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535664
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	99.3	5.00	100.0	0	99.3 90 110
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Sample ID: R24938ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938
Client ID: ICV	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535665
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	101	5.00	100.0	0	101 90 110
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Sample ID: MB-R24938	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938
Client ID: PBW	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535666
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00			
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Sample ID: LCS-R24938	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938
Client ID: LCSW	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535667
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	102	5.00	100.0	0	102 85 115
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Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1207270

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24938CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938						
Client ID: CCV	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535676						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	104	5.00	100.0	0	104	90	110				

Sample ID: R24938CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938						
Client ID: CCB	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535677						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R24938CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938						
Client ID: CCV	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535688						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	97.3	5.00	100.0	0	97.3	90	110				

Sample ID: R24938CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938						
Client ID: CCB	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535689						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: R24938CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938						
Client ID: CCV	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535700						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	104	5.00	100.0	0	104	90	110				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
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QC SUMMARY REPORT

WO#: 1207270
 16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R24938CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938
Client ID: CCB	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535701
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: R24938CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938
Client ID: CCV	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535710
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	100	5.00	100.0	0	100 90 110

Sample ID: R24938CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 24938
Client ID: CCB	Batch ID: R24938	TestNo: A4500-CI- E		Analysis Date: 07/12/12	SeqNo: 535711
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207270

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R24825	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: PBW	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533005
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	ND	0.0200			

Sample ID: R24825ICV	SampType: ICV	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ICV	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533006
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.472	0.0200	0.5000	0	94.5 90 110

Sample ID: 1207119-001EMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ZZZZZ	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533008
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.470	0.0200	0.5000	0.03297	87.4 80 120

Sample ID: 1207119-001EMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: ZZZZZ	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533009
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.471	0.0200	0.5000	0.03297	87.6 80 120 0.4699 0.187 20

Sample ID: R24825CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: CCB	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533019
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	ND	0.0200			

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207270

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: R24825CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: CCB	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533039
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) ND 0.0200

Sample ID: 1207270-002BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: 1hr - 500' Downstre	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533041
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) 0.469 0.0200 0.5000 0.01137 91.5 80 120

Sample ID: 1207270-002BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: 1hr - 500' Downstre	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533042
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) 0.467 0.0200 0.5000 0.01137 91.2 80 120 0.4690 0.380 20

Sample ID: R24825CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 24825
Client ID: CCB	Batch ID: R24825	TestNo: A4500-NH3 D		Analysis Date: 07/10/12	SeqNo: 533049
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) ND 0.0200

Qualifiers: %X Value exceeds Maximum Contaminant Level E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded
 M Manual Integration used to determine area response ND Not Detected at the Reporting Limit P Second column confirmation exceeds
 R RPD outside accepted recovery limits RL Reporting Detection Limit S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207270

16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: MB-10225	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/10/12	RunNo: 24845
Client ID: PBW	Batch ID: 10225	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 07/10/12	SeqNo: 533465
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.00520	0.0120			J

Sample ID: LCS-10225	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/10/12	RunNo: 24845
Client ID: LCSW	Batch ID: 10225	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 07/10/12	SeqNo: 533466
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0552	0.0120	0.05000	0	110 85 115

Sample ID: 1207270-001BMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/10/12	RunNo: 24845
Client ID: 1hr - 500' Downstre	Batch ID: 10225	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 07/10/12	SeqNo: 533468
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0564	0.0120	0.05000	0.009850	93.0 80 120

Sample ID: 1207270-001BMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/10/12	RunNo: 24845
Client ID: 1hr - 500' Downstre	Batch ID: 10225	TestNo: A4500-P BE	A4500-P BE	Analysis Date: 07/10/12	SeqNo: 533469
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0540	0.0120	0.05000	0.009850	88.4 80 120 0.05638 4.21 13.7

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
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QC SUMMARY REPORT

WO#: **1207270**
16-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R24888	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24888						
Client ID: PBW	Batch ID: R24888	TestNo: A2540D		Analysis Date: 07/11/12	SeqNo: 535471						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	ND	1.00									

Sample ID: 1207269-003ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 24888						
Client ID: ZZZZZZ	Batch ID: R24888	TestNo: A2540D		Analysis Date: 07/11/12	SeqNo: 535487						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	150	5.00						154.0	2.63	10	

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



SUBURBAN LABORATORIES, Inc.

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Toll Free: 800.783.LABS

www.suburbanlabs.com

CHAIN OF CUSTODY RECORD

Electronic Version

Company Name Ryba Marine		TURNAROUND TIME REQUESTED <input checked="" type="checkbox"/> Normal <input type="checkbox"/> RUSH* *Additional Rush Charges Approved.		ANALYSIS & METHOD REQUESTED Enter an "X" in box below for request		Page 2 of 2											
Company Address 629 N. Main Street / PO Box 265		*Date & Time Needed: Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.		<table border="1"> <tr><td>TSS</td><td></td></tr> <tr><td>Chloride</td><td></td></tr> <tr><td>Ammonia</td><td></td></tr> <tr><td>Phosphorus</td><td></td></tr> <tr><td>Hardness</td><td></td></tr> </table>		TSS		Chloride		Ammonia		Phosphorus		Hardness		PO No.	
TSS																	
Chloride																	
Ammonia																	
Phosphorus																	
Hardness																	
City Cheboygan	State MI	Zip 49721	Shipping Method SLI														
Phone Fax <input type="checkbox"/> Fax Report	Email Address <input checked="" type="checkbox"/> Email Report		QC Reporting Level <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3														
Project ID / Location Waukegan Harbor Dredging FY11		Specify Regulatory Program: (Required) <input type="checkbox"/> None/Info only		LAB USE ONLY													
Project Manager (Report to) Wayne Moon		<input type="checkbox"/> LUST <input type="checkbox"/> SRP <input type="checkbox"/> SDWA		SLI Order No. 1207270													
Sample Collector(s) PAT IRFUM		<input type="checkbox"/> 503 Sludge <input type="checkbox"/> NPDES <input type="checkbox"/> MWRDGC		Sample containers supplied by customer? <input type="checkbox"/> Yes													
		<input type="checkbox"/> Disposal <input checked="" type="checkbox"/> Other *Please specify in comment section below.		Temperature of Received Samples 6 °C													
				Samples received within 24 hours of collection? <input type="checkbox"/> Yes													

SAMPLE IDENTIFICATION (Please use 1 line per container type)	COLLECTION		MATRIX	GRAB/COMP.	CONTAINERS		PRESERVATIVE	TSS	Chloride	Ammonia	Phosphorus	Hardness	R	Condition	Split	LAB #
	DATE	TIME			Qty	SIZE & TYPE										
1 1000' upstream, surface	7/9/12	11:01 am	SW	G	1	1LP	none	X	X							5A
2 ↓					1	1LP	H2SO4			X	X					5B
3 ↓					1	500p	HNO3					X				5C
4 1000' upstream, mid-depth	7/9/12	11:26 am	SW	G	1	1LP	none	X	X							6A
5 ↓					1	1LP	H2SO4			X	X					6B
6 ↓					1	500p	HNO3					X				6C
7 Blind duplicate	7/9/12	11:16 am	SW	G	1	1LP	none	X	X							7A
8 ↓					1	1LP	H2SO4			X	X					7B
9 ↓					1	500p	HNO3					X				7C
10																
11																
12																

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) CONTAINER: 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) PRESERVATIVE: H ₂ SO ₄ , HCl, HNO ₃ , Methanol (MeOH), NaOH, Sodium Bisulfate (NaHSO ₃), NaThio		COMMENTS & SPECIAL INSTRUCTIONS: * Chicago District USACE - Waukegan Harbor Approach Channel Dredging project FY11				CONDITION CODES 1. Improper/damaged container/cap 2. Improper preservation 3. Insufficient sample volume 4. Headspace/air bubbles for VOCs 5. Received past holding time 6. Received frozen 7. Label conflicts with COC	
1. Relinquished By	Date 7/9/12	2. Relinquished By	Date	3. Relinquished By	Date	4. Relinquished By	Date
Received By	Time 2:00 <input checked="" type="checkbox"/> Ice	Received By	Time <input type="checkbox"/> Ice	Received By	Time <input type="checkbox"/> Ice	Received By	Time <input type="checkbox"/> Ice



Suburban Laboratories, Inc.

4140 Litt Drive
Hillside, IL 60162-1183
P: (708) 544-3260 F: (708) 544-8587
www.SuburbanLabs.com

Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
Weekly water sampling

Suburban Labs Field Sampling Technician(s) - PRINT: <i>PA JRELOM</i>		Placement area (circle): <i>1</i> 2		Eutech Inst. Oakton Field pH Meter, pHTestr 30 Serial No.: <i>819766</i>	
Luedtke Engineering Rep. - PRINT: <i>WYNNE MEON</i>		GPS coordinates of discharge point: ¹ <i>E1124355 N2068935</i>		Scow name and quantity of discharge: ¹ <i>Scow 758 440 yds</i>	
Weather and water conditions: <i>SUNNY - WARM -</i>		Date of Discharge: <i>7/9/12</i>		Time of Discharge: ¹ <i>7:40 AM</i>	
	1hr-500' downstream Surface	1hr-500' downstream Mid-depth	4hr-500' downstream Surface	4hr-500' downstream Mid-depth	Additional Comments:
Sampling Technique:	grab	Kemmerer - grab	grab	Kemmerer - grab	
GPS coordinate (Lat./Long.) of sample collection: ¹	<i>E1124355 N2068435</i>		<i>E1124355 N2068435</i>		
GPS coordinate (state plane) of sample collection: ¹	<i>NAD 83</i>		<i>NAD 83</i>		
Water column depth to the nearest foot: ¹	<i>17</i>		<i>17</i>		
Sampling depth to the nearest foot: (enter zero for surface water samples)	<i>0</i>	<i>8</i>	<i>0</i>	<i>8</i>	
Date & Time of collection:	<i>7/9/12 8:48 AM</i>	<i>7/9/12 8:59 AM</i>	<i>7/9/12 11:41 AM</i>	<i>7/9/12 11:58 AM</i>	
Sample appearance: (clear, tinted, dark, etc..)	<i>CLEAR</i>	<i>CLEAR</i>	<i>CLEAR</i>	<i>CLEAR</i>	
pH & Time of reading:	<i>8.56</i>	<i>8.78</i>	<i>10.17</i>	<i>9.60</i>	
Temperature (degrees C):	<i>25.4°C</i>	<i>24.8</i>	<i>25.4°C</i>	<i>24.9°C</i>	
Comments:					



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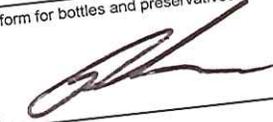
Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel
 Weekly water sampling

Date of Discharge: 7/9/12			
Sampling Technique:	1000' upstream Surface	1000' upstream Mid-depth	Blind Duplicate
	grab	Kemmerer - grab	
GPS coordinate (Lat./Long.) of sample collection:	E 1124355 N2069935 ✓		
GPS coordinate (state plane) of sample collection:	NAD 83		
Water column depth to the nearest foot:	16		NAD 83
Sampling depth to the nearest foot: (enter zero for surface water samples)	0	8	16
Date & Time of collection:	7/9/12 11:01 AM	7/9/12 11:26 AM	7/9/12 11:26 AM
Sample appearance: (clear, tinted, dark, etc..)	CLEAR	CLEAR	CLEAR
pH & Time of reading:	9.50	10.06	10.40
Temperature (degrees C):	25.40C	25.40 24.6	25.40C
Blind Duplicate sample ID:			1000S
Comments:			

Version 0 06/16/2010

See also chain of custody form for bottles and preservatives
 SIGNATURES:

SLI Field Tech 1: 

SLI Field Tech 2: _____



June 25, 2012

Ralph Farver
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1205B20

TEL: (231) 627-4333

FAX: (231) 627-4890

RE: Waukegan Harbor Approach Channel Dredgin

Dear Ralph Farver:

Suburban Laboratories, Inc. received 5 sample(s) on 05/23/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,

A handwritten signature in blue ink that reads "Melissa Amador". The signature is written in a cursive, flowing style.

Melissa Amador
Project Manager





Client: Ryba Marine Construction Co.

Date: June 25, 2012

Project: Waukegan Harbor Approach Channel Dredging

PO #:

WorkOrder: 1205B20

QC Level:

Temperature of samples upon receipt at SLI: 4 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:

ASBESTOS:

1205B20-003B, -004B, -005B: G = Samples subcontracted to United Analytical Services, Inc., Downers Grove, IL for the TEM and PLM analyses requested. Their report is attached.

Client: Ryba Marine Construction Co.

Date: June 25, 2012

Project: Waukegan Harbor Approach Channel Dredgin

PO #:

WorkOrder: 1205B20

QC Level:

Temperature of samples upon receipt at SLI: 4 C

Chain of Custody #: EV

GRAIN SZE and PARTICLE SIZE:

1205B20-003C, -004C, -005C: G = Samples subcontracted to Interra, Inc (formerly Great Lakes Soil & Environmental Consultants, Inc.), Bolingbrook, IL for the TEM and PLM analyses requested. Their report is attached.



Client ID: Ryba Marine Construction Co.

Report Date: June 25, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1205B20

Client Sample ID: Beach Water 1

Matrix: SURFACE WATER

Lab ID: 1205B20-001

Date Received: 05/23/2012 2:00 PM

Collection Date: 05/23/2012 11:45 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
METALS BY ICPMS		Method: SW846-SW6020-Rev 0, Sep-94			Analyst: dc		
Lead	0.00011	0.00010	J	mg/L	1	05/30/2012 2:41 PM	9507
Zinc	ND	0.00300		mg/L	1	05/30/2012 2:41 PM	9507
PCBS		Method: EPA-SW8082-Rev 0, Dec-96			Analyst: mn		
Aroclor 1016	ND	0.100		µg/L	1	05/31/2012 5:03 PM	9533
Aroclor 1221	ND	0.100		µg/L	1	05/31/2012 5:03 PM	9533
Aroclor 1232	ND	0.100		µg/L	1	05/31/2012 5:03 PM	9533
Aroclor 1242	ND	0.100		µg/L	1	05/31/2012 5:03 PM	9533
Aroclor 1248	ND	0.100		µg/L	1	05/31/2012 5:03 PM	9533
Aroclor 1254	ND	0.100		µg/L	1	05/31/2012 5:03 PM	9533
Aroclor 1260	ND	0.100		µg/L	1	05/31/2012 5:03 PM	9533
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	70.0	40.4-143		%REC	1	05/31/2012 5:03 PM	9533
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992			Analyst: LAP		
Chloride	10.4	0.500		mg/L	1	05/24/2012 3:57 PM	R23345
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH3 F-Rev 18Ed, 1992			Analyst: vyc		
Nitrogen, Ammonia (As N)	0.0156	0.0100	J	mg/L	1	05/29/2012 3:59 PM	R23446
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992			Analyst: vyc		
Phosphorus (As P)	0.0110	0.00500	J	mg/L	1	05/31/2012 1:59 PM	9536
Total Phosphorus(as PO4)	0.0337	0.0153	J	mg/L	1	05/31/2012 1:59 PM	9536
SULFATE		Method: ASTM-ASTM D516-Rev 2004			Analyst: LAP		
Sulfate	29	1.0		mg/L	1	05/25/2012 12:14 PM	R23371
TOTAL DISSOLVED SOLIDS		Method: SM-M2540C-Rev 18Ed, 1992			Analyst: sb		
Residue, Filterable	161	0.100		mg/L	0.1	05/25/2012 2:37 PM	R23372
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992			Analyst: sb		
Residue, Non-Filterable	ND	0.400		mg/L	1	05/25/2012 4:40 PM	R23384

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: June 25, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1205B20

TOTAL VOLATILE SOLIDS

Method:

Analyst: sb

Total Volatile Solids 18.0 1.00 c mg/L 1 05/25/2012 4:00 PM R23373

Client Sample ID: Beach Sediment #1

Matrix: SEDIMENT

Lab ID: 1205B20-003

Date Received: 05/23/2012 2:00 PM

Collection Date: 05/23/2012 11:53 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
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PCBS

Method: EPA-8082-Rev 0, Dec-96

Analyst: mn

Aroclor 1016	ND	20.4		µg/Kg-dry	1	05/30/2012 3:08 PM	9479
Aroclor 1221	ND	20.4		µg/Kg-dry	1	05/30/2012 3:08 PM	9479
Aroclor 1232	ND	20.4		µg/Kg-dry	1	05/30/2012 3:08 PM	9479
Aroclor 1242	ND	20.4		µg/Kg-dry	1	05/30/2012 3:08 PM	9479
Aroclor 1248	ND	20.4		µg/Kg-dry	1	05/30/2012 3:08 PM	9479
Aroclor 1254	ND	20.4		µg/Kg-dry	1	05/30/2012 3:08 PM	9479
Aroclor 1260	ND	20.4		µg/Kg-dry	1	05/30/2012 3:08 PM	9479

Internal Quality Control Compounds

SS: Tetrachloro-m-xylene	66.3	33.7-156		%REC	1	05/30/2012 3:08 PM	9479
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ASBESTOS

Method:

Analyst: maa

Subcontracted Test	See Attached	0	G		1	06/04/2012 12:00 AM	R24205
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GRAIN SIZE, SUBCONTRACTED

Method:

Analyst: maa

Subcontracted Test	See Attached	0	G		1	06/25/2012 12:00 AM	R24322
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PARTICLE SIZE, SUBCONTRACTED

Method:

Analyst: maa

Subcontracted Test	See Attached	0	G		1	06/25/2012 12:00 AM	R24322
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PERCENT MOISTURE

Method: ASTM-D2216-Rev 2005

Analyst: sb

Percent Moisture	18	1.0		wt%	1	05/24/2012 5:30 PM	R23330
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<p>Qualifiers:</p> <ul style="list-style-type: none"> */x Value exceeds Maximum Contaminant Level c Analyte not in SLI scope of accreditation G Refer to case narrative page for specific comments J Analyte detected below quantitation limit (QL) ND Not Detected at the Reporting Limit S Spike Recovery outside accepted recovery limits 	<ul style="list-style-type: none"> B Analyte detected in the associated Method Blank E Estimated, detected above quantitation range H Holding times for preparation or analysis exceeded N Tentatively identified compounds R RPD outside accepted recovery limits
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Client ID: Ryba Marine Construction Co.

Report Date: June 25, 2012

Project Name: Waukegan Harbor Approach Channel Dredging

Workorder: 1205B20

Client Sample ID: Beach Sediment #2

Matrix: SEDIMENT

Lab ID: 1205B20-004

Date Received: 05/23/2012 2:00 PM

Collection Date: 05/23/2012 11:45 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
PCBS		Method: EPA-8082-Rev 0, Dec-96			Analyst: mn		
Aroclor 1016	ND	21.4		µg/Kg-dry	1	05/30/2012 3:26 PM	9479
Aroclor 1221	ND	21.4		µg/Kg-dry	1	05/30/2012 3:26 PM	9479
Aroclor 1232	ND	21.4		µg/Kg-dry	1	05/30/2012 3:26 PM	9479
Aroclor 1242	ND	21.4		µg/Kg-dry	1	05/30/2012 3:26 PM	9479
Aroclor 1248	ND	21.4		µg/Kg-dry	1	05/30/2012 3:26 PM	9479
Aroclor 1254	ND	21.4		µg/Kg-dry	1	05/30/2012 3:26 PM	9479
Aroclor 1260	ND	21.4		µg/Kg-dry	1	05/30/2012 3:26 PM	9479
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	75.0	33.7-156		%REC	1	05/30/2012 3:26 PM	9479
ASBESTOS		Method:			Analyst: maa		
Subcontracted Test	See Attached	0	G		1	06/04/2012 12:00 AM	R24205
GRAIN SIZE, SUBCONTRACTED		Method:			Analyst: maa		
Subcontracted Test	See Attached	0	G		1	06/25/2012 12:00 AM	R24322
PARTICLE SIZE, SUBCONTRACTED		Method:			Analyst: maa		
Subcontracted Test	See Attached	0	G		1	06/25/2012 12:00 AM	R24322
PERCENT MOISTURE		Method: ASTM-D2216-Rev 2005			Analyst: sb		
Percent Moisture	22	1.0		wt%	1	05/24/2012 5:30 PM	R23330

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: June 25, 2012

Project Name: Waukegan Harbor Approach Channel Dredging

Workorder: 1205B20

Client Sample ID: Beach Sediment #3

Matrix: SEDIMENT

Lab ID: 1205B20-005

Date Received: 05/23/2012 2:00 PM

Collection Date: 05/23/2012 12:12 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
PCBS		Method: EPA-8082-Rev 0, Dec-96			Analyst: mn		
Aroclor 1016	ND	21.3		µg/Kg-dry	1	05/30/2012 3:44 PM	9479
Aroclor 1221	ND	21.3		µg/Kg-dry	1	05/30/2012 3:44 PM	9479
Aroclor 1232	ND	21.3		µg/Kg-dry	1	05/30/2012 3:44 PM	9479
Aroclor 1242	ND	21.3		µg/Kg-dry	1	05/30/2012 3:44 PM	9479
Aroclor 1248	ND	21.3		µg/Kg-dry	1	05/30/2012 3:44 PM	9479
Aroclor 1254	ND	21.3		µg/Kg-dry	1	05/30/2012 3:44 PM	9479
Aroclor 1260	ND	21.3		µg/Kg-dry	1	05/30/2012 3:44 PM	9479
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	67.5	33.7-156		%REC	1	05/30/2012 3:44 PM	9479
ASBESTOS		Method:			Analyst: maa		
Subcontracted Test	See Attached	0	G		1	06/04/2012 12:00 AM	R24205
GRAIN SIZE, SUBCONTRACTED		Method:			Analyst: maa		
Subcontracted Test	See Attached	0	G		1	06/25/2012 12:00 AM	R24322
PARTICLE SIZE, SUBCONTRACTED		Method:			Analyst: maa		
Subcontracted Test	See Attached	0	G		1	06/25/2012 12:00 AM	R24322
PERCENT MOISTURE		Method: ASTM-D2216-Rev 2005			Analyst: sb		
Percent Moisture	22	1.0		wt%	1	05/24/2012 5:30 PM	R23330

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: June 25, 2012
Lab Order: 1205B20

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1205B20-001B	05/23/12 11:45:00 A	9536	P_WW_LOWPR	PHOSPHORUS, TOTAL		05/31/12
1205B20-001C		9462	200.2_ICPWW_	AQUEOUS PREP T/R METALS: ICP		05/24/12
		9507	200.2_ICPMS_W	AQUEOUS PREP TOTAL METALS: ICP		05/29/12
1205B20-001D		9533	3510_PCB	AQUEOUS PREP SEP FUNNEL: PCB		05/30/12
1205B20-003A	05/23/12 11:53:00 A	9479	3550_PCB	SOLID PREP SONICATION: PCB		05/25/12
1205B20-004A	05/23/12 11:45:00 A	9479	3550_PCB	SOLID PREP SONICATION: PCB		05/25/12
1205B20-005A	05/23/12 12:12:00 P	9479	3550_PCB	SOLID PREP SONICATION: PCB		05/25/12



Suburban Laboratories, Inc.
 4140 Litt Dr
 Hillside, IL 60162
 TEL: 708-544-3260 FAX: 708-544-8587
 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: **1205B20**
 25-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: 6020_W

Sample ID: MB-9507	SampType: MBLK	TestCode: 6020_W	Units: mg/L	Prep Date: 05/29/12	RunNo: 23522
Client ID: PBW	Batch ID: 9507	TestNo: SW6020	E200.2	Analysis Date: 05/30/12	SeqNo: 505424
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead	ND	0.00020			
Zinc	ND	0.00300			

Sample ID: LCS-9507	SampType: LCS	TestCode: 6020_W	Units: mg/L	Prep Date: 05/29/12	RunNo: 23522
Client ID: LCSW	Batch ID: 9507	TestNo: SW6020	E200.2	Analysis Date: 05/30/12	SeqNo: 505425
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead	0.0494	0.00020	0.05000	0	98.8	85	115
Zinc	0.0486	0.00300	0.05000	0	97.3	85	115

Sample ID: 1205C25-006CMS	SampType: MS	TestCode: 6020_W	Units: mg/L	Prep Date: 05/29/12	RunNo: 23522
Client ID: ZZZZZZ	Batch ID: 9507	TestNo: SW6020	E200.2	Analysis Date: 05/30/12	SeqNo: 505428
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead	0.0464	0.00020	0.05000	0.0001872	92.5	70	130
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Sample ID: 1205C25-006CMSD	SampType: MSD	TestCode: 6020_W	Units: mg/L	Prep Date: 05/29/12	RunNo: 23522
Client ID: ZZZZZZ	Batch ID: 9507	TestNo: SW6020	E200.2	Analysis Date: 05/30/12	SeqNo: 505429
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead	0.0462	0.00020	0.05000	0.0001872	91.9	70	130	0.04644	0.605	20
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Qualifiers:

%X Value exceeds Maximum Contaminant Level	E Estimated, detected above quantitation range	H Holding times for preparation or analysis exceeded
M Manual Integration used to determine area response	ND Not Detected at the Reporting Limit	P Second column confirmation exceeds
R RPD outside accepted recovery limits	RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits



Suburban Laboratories, Inc.
 4140 Litt Dr
 Hillside, IL 60162
 TEL: 708-544-3260 FAX: 708-544-8587
 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: **1205B20**
 25-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: 8082_S

Sample ID: MB-9479	SampType: mblk	TestCode: 8082_S	Units: µg/Kg	Prep Date: 05/25/12	RunNo: 23509						
Client ID: PBS	Batch ID: 9479	TestNo: SW8082	SW3550B	Analysis Date: 05/30/12	SeqNo: 505234						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	16.7									
Aroclor 1221	ND	16.7									
Aroclor 1232	ND	16.7									
Aroclor 1242	ND	16.7									
Aroclor 1248	ND	16.7									
Aroclor 1254	ND	16.7									
Aroclor 1260	ND	16.7									
Surr: Decachlorobiphenyl	5.33		13.33		40.0	41.4	165				S
Surr: Tetrachloro-m-xylene	7.67		13.33		57.5	33.7	156				

Sample ID: LCS-9479	SampType: lcs	TestCode: 8082_S	Units: µg/Kg	Prep Date: 05/25/12	RunNo: 23519						
Client ID: LCSS	Batch ID: 9479	TestNo: SW8082	SW3550B	Analysis Date: 05/31/12	SeqNo: 505394						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	111	16.7	166.7	0	66.6	10	215				
Aroclor 1260	112	16.7	166.7	0	66.9	58.2	140				
Surr: Decachlorobiphenyl	10.0		13.33		75.0	41.4	165				
Surr: Tetrachloro-m-xylene	8.33		13.33		62.5	33.7	156				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



Suburban Laboratories, Inc.
 4140 Litt Dr
 Hillside, IL 60162
 TEL: 708-544-3260 FAX: 708-544-8587
 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: **1205B20**
 25-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: 8082_W

Sample ID: MB-9533	SampType: mblk	TestCode: 8082_W	Units: µg/L	Prep Date: 05/30/12	RunNo: 23555						
Client ID: PBW	Batch ID: 9533	TestNo: SW8082	SW3510B	Analysis Date: 05/31/12	SeqNo: 506057						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.100									
Aroclor 1221	ND	0.100									
Aroclor 1232	ND	0.100									
Aroclor 1242	ND	0.100									
Aroclor 1248	ND	0.100									
Aroclor 1254	ND	0.100									
Aroclor 1260	ND	0.100									
Surr: Decachlorobiphenyl	0.350		0.4000		87.5	10	200				
Surr: Tetrachloro-m-xylene	0.270		0.4000		67.5	40.4	143				

Sample ID: LCS-9533	SampType: lcs	TestCode: 8082_W	Units: µg/L	Prep Date: 05/30/12	RunNo: 23555						
Client ID: LCSW	Batch ID: 9533	TestNo: SW8082	SW3510B	Analysis Date: 05/31/12	SeqNo: 506058						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	3.00	0.100	5.000	0	60.1	10	215				
Aroclor 1260	3.42	0.100	5.000	0	68.4	63	135				
Surr: Decachlorobiphenyl	0.335		0.4000		83.8	10	200				
Surr: Tetrachloro-m-xylene	0.300		0.4000		75.0	40.4	143				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1205B20**
 25-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: MB-R23345	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345						
Client ID: PBW	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502527						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Sample ID: LCS-R23345	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 23345						
Client ID: LCSW	Batch ID: R23345	TestNo: A4500-CI- E		Analysis Date: 05/24/12	SeqNo: 502528						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	103	5.00	100.0	0	103	85	115				

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1205B20**
 25-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R23446	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23446
Client ID: PBW	Batch ID: R23446	TestNo: A4500-NH3 D		Analysis Date: 05/29/12	SeqNo: 504311
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) ND 0.0200

Sample ID: 1205B19-001BMS	SampType: MS	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23446
Client ID: ZZZZZ	Batch ID: R23446	TestNo: A4500-NH3 D		Analysis Date: 05/29/12	SeqNo: 504314
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) 0.438 0.0200 0.5000 0.01239 85.0 80 120

Sample ID: 1205B19-001BMSD	SampType: MSD	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 23446
Client ID: ZZZZZ	Batch ID: R23446	TestNo: A4500-NH3 D		Analysis Date: 05/29/12	SeqNo: 504315
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Nitrogen, Ammonia (As N) 0.430 0.0200 0.5000 0.01239 83.5 80 120 0.4375 1.71 20

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1205B20**
 25-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: LCS-9536	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 05/31/12	RunNo: 23531
Client ID: LCSW	Batch ID: 9536	TestNo: A4500-P BE A4500-P BE		Analysis Date: 05/31/12	SeqNo: 505651
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0517	0.0120	0.05000	0	103 85 115

Sample ID: MB-9536	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 05/31/12	RunNo: 23531
Client ID: PBW	Batch ID: 9536	TestNo: A4500-P BE A4500-P BE		Analysis Date: 05/31/12	SeqNo: 505652
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	ND	0.0120			
Total Phosphorus(as PO4)	ND	0.0367			

Sample ID: 1205B19-001BMS	SampType: MS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 05/31/12	RunNo: 23531
Client ID: ZZZZZ	Batch ID: 9536	TestNo: A4500-P BE A4500-P BE		Analysis Date: 05/31/12	SeqNo: 505654
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0564	0.0120	0.05000	0.007525	97.7 80 120

Sample ID: 1205B19-001BMSD	SampType: MSD	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 05/31/12	RunNo: 23531
Client ID: ZZZZZ	Batch ID: 9536	TestNo: A4500-P BE A4500-P BE		Analysis Date: 05/31/12	SeqNo: 505655
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Phosphorus (As P)	0.0558	0.0120	0.05000	0.007525	96.5 80 120 0.05638 1.07 13.7

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1205B20**
 25-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: SO4_WW

Sample ID: MB-R23371	SampType: MBLK	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 23371						
Client ID: PBW	Batch ID: R23371	TestNo: ASTM-D516		Analysis Date: 05/25/12	SeqNo: 503137						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate	ND	10									
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Sample ID: LCS-R23371	SampType: LCS	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 23371						
Client ID: LCSW	Batch ID: R23371	TestNo: ASTM-D516		Analysis Date: 05/25/12	SeqNo: 503138						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate	39	10	40.00	0	98.3	90	110				
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Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1205B20**
 25-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TDS_WW_LOW

Sample ID: 1205B20-001ADUP	SampType: DUP	TestCode: TDS_WW_LO	Units: mg/L	Prep Date:	RunNo: 23372						
Client ID: Beach Water 1	Batch ID: R23372	TestNo: A2540C		Analysis Date: 05/25/12	SeqNo: 504586						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Filterable	171	0.400						160.6	6.51	10	

Sample ID: MB-R23372	SampType: MBLK	TestCode: TDS_WW_LO	Units: mg/L	Prep Date:	RunNo: 23372						
Client ID: PBW	Batch ID: R23372	TestNo: A2540C		Analysis Date: 05/25/12	SeqNo: 504587						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Filterable	ND	0.400									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1205B20**
 25-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R23384	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23384						
Client ID: PBW	Batch ID: R23384	TestNo: A2540D		Analysis Date: 05/25/12	SeqNo: 503634						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	ND	1.00									

Sample ID: 1205B73-001ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 23384						
Client ID: ZZZZZZ	Batch ID: R23384	TestNo: A2540D		Analysis Date: 05/25/12	SeqNo: 503642						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	26.0	10.0						28.00	7.41	10	

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1205B20**
 25-Jun-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TVS_WW_LOW

Sample ID: 1205B20-001ADUP	SampType: DUP	TestCode: TVS_WW_LO	Units: mg/L	Prep Date:	RunNo: 23373						
Client ID: Beach Water 1	Batch ID: R23373	TestNo: A2540E		Analysis Date: 05/25/12	SeqNo: 504837						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Volatile Solids	18.8	4.00						18.04	4.30	10	

Sample ID: MB-R23373	SampType: MBLK	TestCode: TVS_WW_LO	Units: mg/L	Prep Date:	RunNo: 23373						
Client ID: PBW	Batch ID: R23373	TestNo: A2540E		Analysis Date: 05/25/12	SeqNo: 504838						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Volatile Solids	ND	4.00									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



UNITED ANALYTICAL SERVICES, INC.
 1429 CENTRE CIRCLE DRIVE, DONNING GROVE, IL 60516
 PHONE (630) 691-8371 FAX (630) 691-1019

PLM LABORATORY REPORT

METHOD:	<u>EPA/600/R-93/116 July 1993</u> <u>PLM w/ Dispersion Staining</u>	REPORT DATE:	<u>June 4, 2012</u>
CLIENT:	<u>Suburban Laboratories, Inc.</u>	DATE RECEIVED:	<u>May 25, 2012</u>
ATTENTION:	<u>Melissa Amador</u>	UAS SAM#:	<u>1216713</u>
email:	<u>mellssa@suburbanlabs.com</u>	JOB LOCATION:	

LAB SAMPLE #	CLIENT SAMPLE #	COLOR	DESCRIPTION LOCATION	ASBESTOS TYPE	%	OTHER FIBERS	%	MATRIX	%
1216713 -01	1205820-003B	Tan	Beach Sediment	ND	--	ND	--	O	100
1216713 -02	1205820-004B	Tan	Beach Sediment	ND	--	ND	--	O	100
1216713 -03	1205820-005B	Tan	Beach Sediment	ND	--	ND	--	O	100

Analysis Comments: Samples analyzed according to the EPA/600/r-93 116 July 1993 titled Method for the Determination of Asbestos in Bulk Building Materials Further testing by Gravimetric or TEM methods are recommended for samples that are non-friable such as floor tiles, mastics, etc. Report shall not be reproduced except in full, without the written approval of the laboratory. Laboratory results pertain to those delivered for analysis. Samples will be discarded if not notified by the client within 90 days.	CODES ASBESTOS ND-None Detected CHRY-Chrysotile AMOS-Amosite CROC-Crocidolite TREM-Tremolite ACTN-Actinolite ANTH-Anthophyllite	CODES OTHER FIBERS FBGL-Fibrous Glass CELL-Cellulose SYN-Synthetic WOLL-Wollastonite H-Hair O-Other (Specify)	CODES MATRIX G-Gypsum C-Calcium Carbonate M-Mica O-Other Matrix
---	---	--	--

Karen Buehler
 ANALYZED BY - Karen Buehler / Laboratory Manager

June 4, 2012
 DATE ANALYZED

Marla DeMichael
 REVIEWED BY - Marla DeMichael / Administrative Assistant

June 4, 2012
 DATE REVIEWED

PLM & TEM

 NVLAP Lab Code 101732

This report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government.



UNITED ANALYTICAL SERVICES, INC.
 1429 CENTRE CIRCLE DRIVE, DOWNERS GROVE, IL 60515
 PHONE (630) 691-8271 FAX (630) 691-1819

TEM CHATFIELD LABORATORY REPORT

METHOD: <u>Chatfield Method SOP-1988-02</u>	REPORT DATE: <u>June 8, 2012</u>
CLIENT: <u>Suburban Laboratories, Inc.</u>	DATE RECEIVED: <u>May 25, 2012</u>
ATTENTION: <u>Melissa Amador</u>	UAS SAM #: <u>1216717B</u>
email: <u>melissa@suburbanlabs.com</u>	JOB LOCATION: -

CLIENT SAMPLE #	LAB SAMPLE #	SAMPLE DESCRIPTION/LOCATION	% ORGANICS	% ACID SOLUBLE	ASBESTOS TYPE(S)	% ASBESTOS
1205B20-003B	1216713-01	Beach Sediment	--	--	ND	NSD
1205B20-004B	1216713-02	Beach Sediment	--	--	ND	NSD
1205B20-005B	1216713-03	Beach Sediment	--	--	ND	NSD

NSD=No Structures Detected
Comments:
 Samples prepped according to Chatfield Method SOP-1988-02
 Report shall not be reproduced in except in full, without the written approval of the laboratory.
 Laboratory not responsible for the physical separation of layered materials.
 Laboratory results only pertain to those items delivered.
 Samples will be discarded if not notified by the client within 90 days.

Karen Buehler
 ANALYZED BY- Karen Buehler / Laboratory Manager

June 8, 2012
 DATE ANALYZED

PLM & TEM

 NVLAP Laboratory # 101732

AIHA-AAR Participant # 101212

This report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government.
 United Analytical Services, Inc./Laboratory/General/TEM/TEM Chatfield Laboratory Report/12.03



CHAIN OF CUSTODY RECORD



COC ID:	PAGE: 1	OF: 1
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ADDRESS
 Suburban Laboratories, Inc.
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 Hillside, IL 60162
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 Website: www.SuburbanLabs.com

1216713

Please Include Email Address of Report Recipient Whenever Possible!!!

SUB CONTRACTOR: United Analytical COMPANY: United Analytical Services		SPECIAL INSTRUCTIONS / COMMENTS: Please analyze for PLM TEM by EPA 600 Series. Email report and invoice to Melissa Amador (melissa@suburbanlabs.com) <i>Extended TAT is acceptable</i>
ADDRESS: 1429 Centre Circle Drive		
CITY, STATE, ZIP: Downers Grove, IL 60515		
PHONE: (630) 691-8271	FAX: (630) 691-1819	
ACCOUNT #:	EMAIL:	

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
1	1205B20-003B ASBESTOS	Beach Sediment #	G-L-UN	Sediment	05/23/12 11:53:00 AM	1	
2	1205B20-004B ASBESTOS	Beach Sediment #	G-L-UN	Sediment	05/23/12 11:45:00 AM	1	
3	1205B20-005B ASBESTOS	Beach Sediment #	G-L-UN	Sediment	05/23/12 12:12:00 PM	1	

Relinquished By: <i>[Signature]</i>	Date: <i>5/25/12</i>	Time: <i>11:00</i>	Received By: <i>[Signature]</i>	Date: <i>5/25/12</i>	Time: <i>10:00</i>	REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARD COPY (extra cost) <input type="checkbox"/> FAX <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
TAT: Standard <input type="checkbox"/> RUSH <input type="checkbox"/> Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						FOR LAB USE ONLY Temp of samples _____ °C Attempt to Cool? _____ Comments: _____
Note: RUSH requests will incur surcharges!						

	Summary
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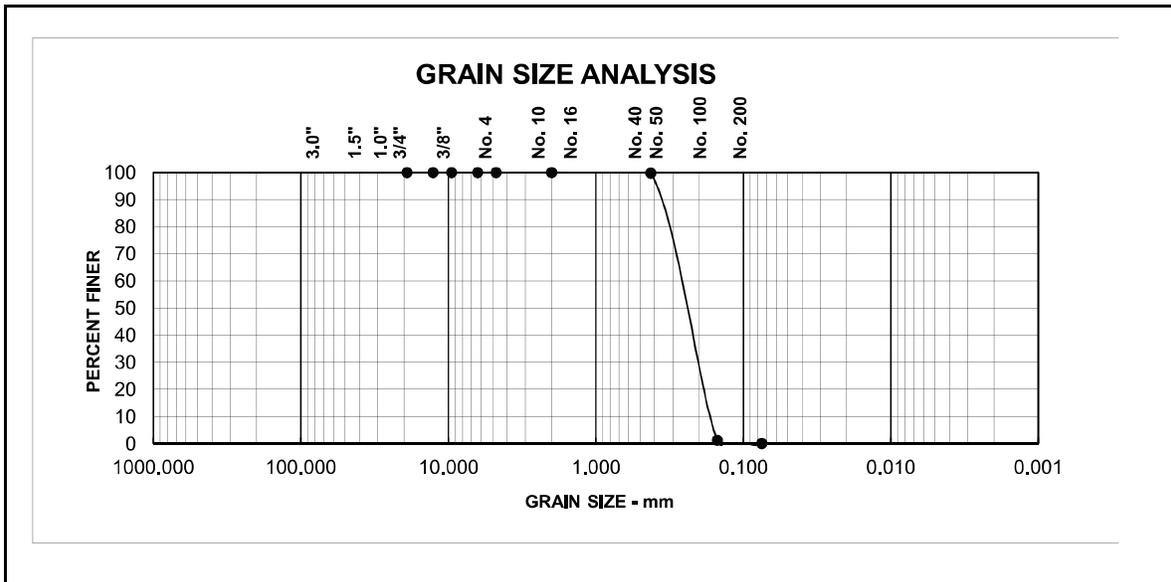
Project	USACE Sediment Samples
Client	Suburban Laboratories-Hillside, IL
File #	6054

	Sample ID	Moisture Content, ASTM D2216	Atterberg, ASTM D4318	Grain Size ASTM D422,		IEPA,	Standard Proctor ASTM D698	
				Classification	Percent Fines, Sieve #230		Percent Fines, sieve #230	Maximum Density, pcf
1	1205C25-001D	20.63	Non-Plastic	SP-SM	10.3	13.3	103.7	14.1
2	1205C25-002D	25.83	Non-Plastic	ML	59	62.1	106.4	14
3	1205C25-003D	33.99	Non-Plastic	ML	85.7	89	99.6	15.6
4	1205C25-004D	22.47		SP-SM	9.6	11		
5	1205C25-005D	20.09		SP	0.7	1		
6	1205B20-003C	28.85		SP	0	0.2		
7	1205B20-004C	18.71		SP	0.1	0.4		
8	1205B20-003C	21.55		SP	0.1	0.3		



GRAIN SIZE ANALYSIS

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1205B20-003C	Date Tested	6/8/2012	Tested by:	PP
						Qc by:	KDK
Date Sample Received:	5/25/12						
Sample Location:							
Sample Description:	Brown poorly graded sand (Beach Sediment)						



% + 3"	% Gravel	% Sand	% Fines
0.0	0.0	100.0	0.0

Sieve Size	Percent Passing	D85 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	Cc	Cu						
1.5"	100.0	0.33	0.27	0.2	0.18	0.8	1.5						
1"	100.0	<table border="1"> <tr> <td>Soil Classification</td> <td>SP</td> </tr> <tr> <td>Soil Description</td> <td>Poorly graded sand</td> </tr> <tr> <td>System</td> <td>USCS</td> </tr> </table>						Soil Classification	SP	Soil Description	Poorly graded sand	System	USCS
Soil Classification	SP												
Soil Description	Poorly graded sand												
System	USCS												
3/4"	100.0												
1/2"	100.0												
3/8"	100.0												
1/4"	100.0												
#4	100.0												
#10	100.0												
#40	99.7												
#100	1.3												
#200	0.0												
#230	0.0												

Remarks:

www.interra.co

Test ID	48550
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IEPA

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1205B20-003C	Date Tested	6/8/2012	Tested By	PP
						Qc By	KDK

Date Sample Received	5/25/2012
Sample Location	
Sample Description	Brown poorly graded sand (Beach Sediment)
<p>Control Sieve No. : 230 (63-micron sieve)</p> <p>Pan No. : A</p> <p>Pan Weight : 113.12 gm</p> <p>Pan + Dry Sample Weight Before Wash : 163.12 gm</p> <p>Pan + Dry Sample Weight After Wash : 163.03 gm</p> <p>Percent Fines : 0.2 %</p>	

Remarks	
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www.interra.co

Test ID	48626
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Moisture Content
ASTM D2216 / AASHTO T265

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1205B20-003C	Date Tested	6/5/2012	Tested By	PP
						Qc By	KDK

Date Sample Received	5/25/2012
Sample Location	
Sample Description	Brown poorly graded sand (Beach Sediment)
<p>Can Number : 1</p> <p>Can Weight : 314.14 gm</p> <p>Can + Wet Sample Weight : 470.14 gm</p> <p>Can + Dry Sample Weight : 435.21 gm</p> <p>Moisture Content : 28.85 %</p>	

Remarks	
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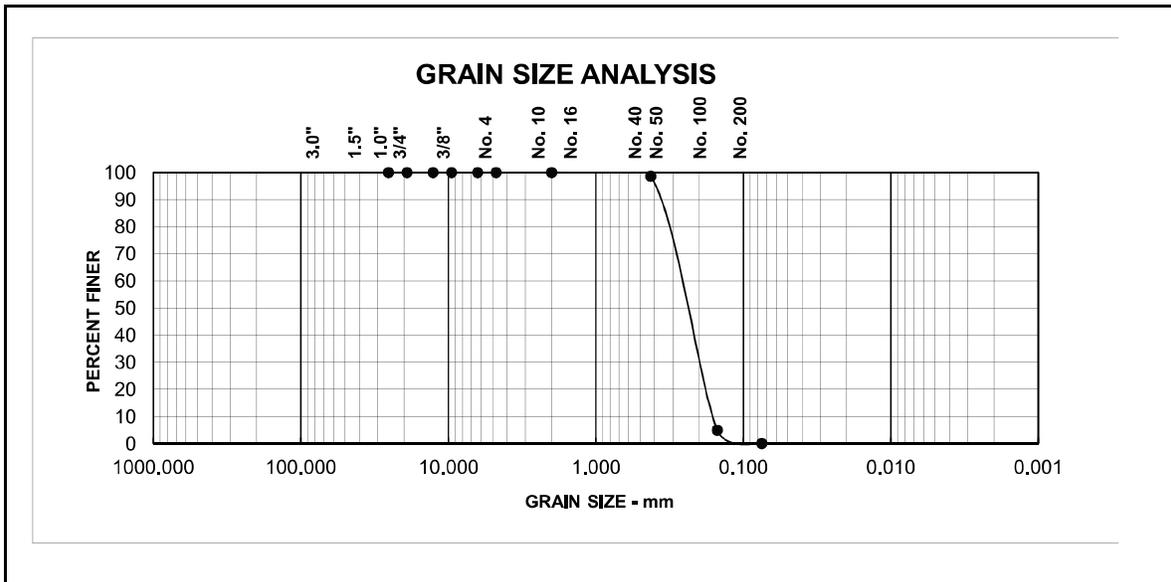
www.interra.co

Test ID	48549
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GRAIN SIZE ANALYSIS

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1205B20-004C	Date Tested	6/8/2012	Tested by:	PP
						Qc by:	KDK
Date Sample Received:	5/25/12						
Sample Location:							
Sample Description:	Brown poorly graded sand (Beach Sediment)						



% + 3"	% Gravel	% Sand	% Fines
0.0	0.0	99.9	0.1

Sieve Size	Percent Passing	D85 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	Cc	Cu
1.5"	100.0	0.35	0.26	0.2	0.17	0.9	1.5
1.0"	100.0						
3/4"	100.0						
1/2"	100.0						
3/8"	100.0						
1/4"	100.0						
#4	100.0						
#10	100.0						
#40	98.6						
#100	5.0						
#200	0.1						
#230	0.1						
			Soil Classification	SP			
			Soil Description	Poorly graded sand			
			System	USCS			

Remarks:

www.interra.co

Test ID	48552
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IEPA

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1205B20-004C	Date Tested	6/8/2012	Tested By	PP
						Qc By	KDK

Date Sample Received	5/25/2012
Sample Location	
Sample Description	Brown poorly graded sand (Beach Sediment)
Control Sieve No. : 230 (63-micron sieve)	
Pan No. : CC-2	
Pan Weight : 148.20 gm	
Pan + Dry Sample Weight Before Wash : 198.20 gm	
Pan + Dry Sample Weight After Wash : 197.99 gm	
Percent Fines : 0.4 %	

Remarks	
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www.interra.co

Test ID	48627
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Moisture Content
ASTM D2216 / AASHTO T265

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1205B20-004C	Date Tested	6/5/2012	Tested By	PP
						Qc By	KDK

Date Sample Received	5/25/2012
Sample Location	
Sample Description	Brown poorly graded sand (Beach Sediment)
<p>Can Number : 45</p> <p>Can Weight : 293.09 gm</p> <p>Can + Wet Sample Weight : 420.91 gm</p> <p>Can + Dry Sample Weight : 400.76 gm</p> <p>Moisture Content : 18.71 %</p>	

Remarks	
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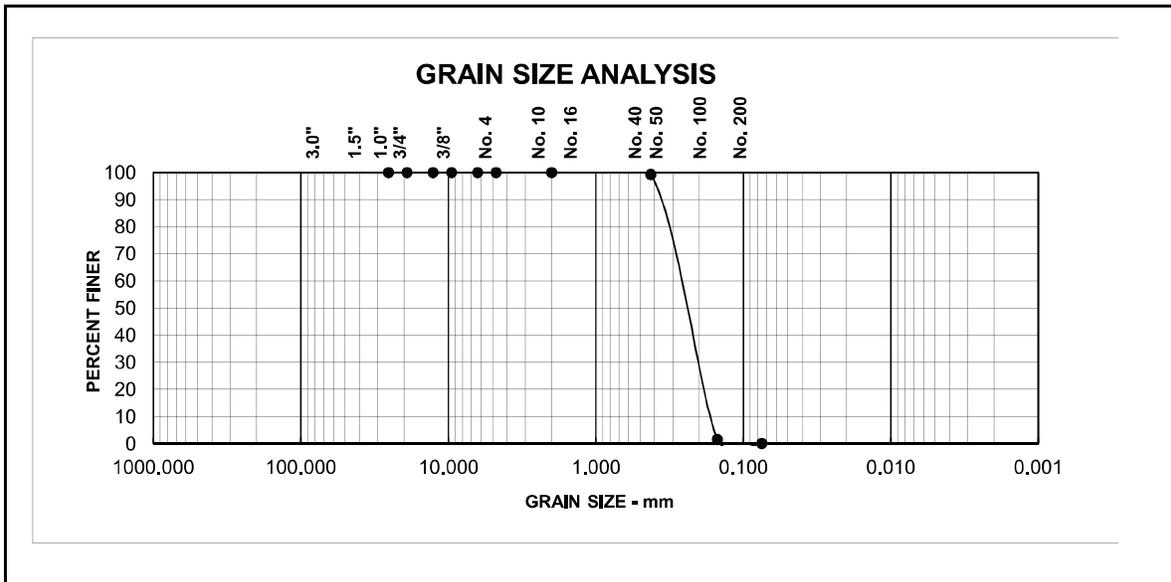
www.interra.co

Test ID	48551
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GRAIN SIZE ANALYSIS

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1205B20-005C	Date Tested	6/8/2012	Tested by:	PP
						Qc by:	KDK
Date Sample Received:	5/25/12						
Sample Location:							
Sample Description:	Brown poorly graded sand (Beach Sediment)						



% + 3"	% Gravel	% Sand	% Fines
0.0	0.1	99.9	0.1

Sieve Size	Percent Passing	D85 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	Cc	Cu						
1.5"	100.0	0.34	0.27	0.2	0.18	0.8	1.5						
1.0"	100.0	<table border="1"> <tr> <td>Soil Classification</td> <td>SP</td> </tr> <tr> <td>Soil Description</td> <td>Poorly graded sand</td> </tr> <tr> <td>System</td> <td>USCS</td> </tr> </table>						Soil Classification	SP	Soil Description	Poorly graded sand	System	USCS
Soil Classification	SP												
Soil Description	Poorly graded sand												
System	USCS												
3/4"	100.0												
1/2"	100.0												
3/8"	100.0												
1/4"	100.0												
#4	100.0												
#10	99.9												
#40	99.2												
#100	1.6												
#200	0.1												
#230	0.1												

Remarks:

www.interra.co

Test ID	48554
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IEPA

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1205B20-005C	Date Tested	6/8/2012	Tested By	PP
						Qc By	KDK

Date Sample Received	5/25/2012
Sample Location	
Sample Description	Brown poorly graded sand (Beach Sediment)
Control Sieve No. : 230 (63-micron sieve)	
Pan No. : CC-5	
Pan Weight : 158.91 gm	
Pan + Dry Sample Weight Before Wash : 208.91 gm	
Pan + Dry Sample Weight After Wash : 208.78 gm	
Percent Fines : 0.3 %	

Remarks	
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www.interra.co

Test ID	48629
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Moisture Content
ASTM D2216 / AASHTO T265

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1205B20-005C	Date Tested	6/5/2012	Tested By	PP
						Qc By	KDK

Date Sample Received	5/25/2012
Sample Location	
Sample Description	Brown poorly graded sand (Beach Sediment)
<p>Can Number : 34</p> <p>Can Weight : 326.12 gm</p> <p>Can + Wet Sample Weight : 435.75 gm</p> <p>Can + Dry Sample Weight : 416.31 gm</p> <p>Moisture Content : 21.55 %</p>	

Remarks	
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www.interra.co

Test ID	48553
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Suburban Laboratories, Inc.

4140 Litt Drive
Hillside, IL 60162-1183
P: (708) 544-3260 F: (708) 544-8587
www.SuburbanLabs.com

Ryba Marine Construction Co.

FY11 Dredging of Waukegan Harbor Approach Channel -
Background Beach sampling

Suburban Labs Field Sampling Technician(s) - PRINT: <i>Patrick Rodriguez</i> <i>PAJ</i> <i>J. R. RUM</i>			Eutech Inst. Oakton Field pH Meter, pHTestr-30 Serial No.: <i>Thermo A 10350</i>			
Weather and water conditions: <i>Clear + Calm</i>			<i>Thermo Orion 5-star, pH-ISE, Cond., DO Portable</i>			
	<i>Beach Water #1</i>	<i>Beach Water #2</i>	<i>Beach Sediment #1</i>	<i>Beach Sediment #2</i>	<i>Beach Sediment #3</i>	Additional Comments:
Sampling Technique:	grab	grab	grab	grab	grab	
GPS coordinate (Lat./Long.) of sample collection: ¹	<i>N 42° 29' 28.2"</i>	<i>W 087° 48' 09.2"</i>	<i>N 41° 59' 27.5"</i> <i>W 087° 56' 37.9"</i>	<i>N 42° 29' 28.2"</i> <i>W 087° 48' 09.2"</i>	<i>N 41° 55' 57.6"</i> <i>W 088° 05' 40.5"</i>	
GPS coordinate (state plane) of sample collection: ¹			<i>N 42° 29' 25.5"</i> <i>W 087° 48' 07.4"</i>	<i>N 42° 29' 28.5"</i> <i>W 087° 48' 08.8"</i>	<i>N 42° 29' 31.2"</i> <i>W 087° 48' 09.6"</i>	
Date & Time of collection:	<i>5/23/12 11:45</i>	<i>5/23/12 11:55</i>	<i>5/23/12 12:12</i>	<i>5/23/12 11:45</i>	<i>5/23/12 11:53</i>	
Sample appearance: (clear, tinted, dark, etc..)	<i>clear</i>	<i>clear</i>	<i>Sandy</i>	<i>Sandy</i>	<i>Sandy</i>	
pH & Time of reading:	<i>8.09 12.12</i>					
Temperature (degrees C):	<i>16.7</i>					
Comments:						

See also chain of custody form for bottles and preservatives

Version 0 06/16/2010

SIGNATURES:

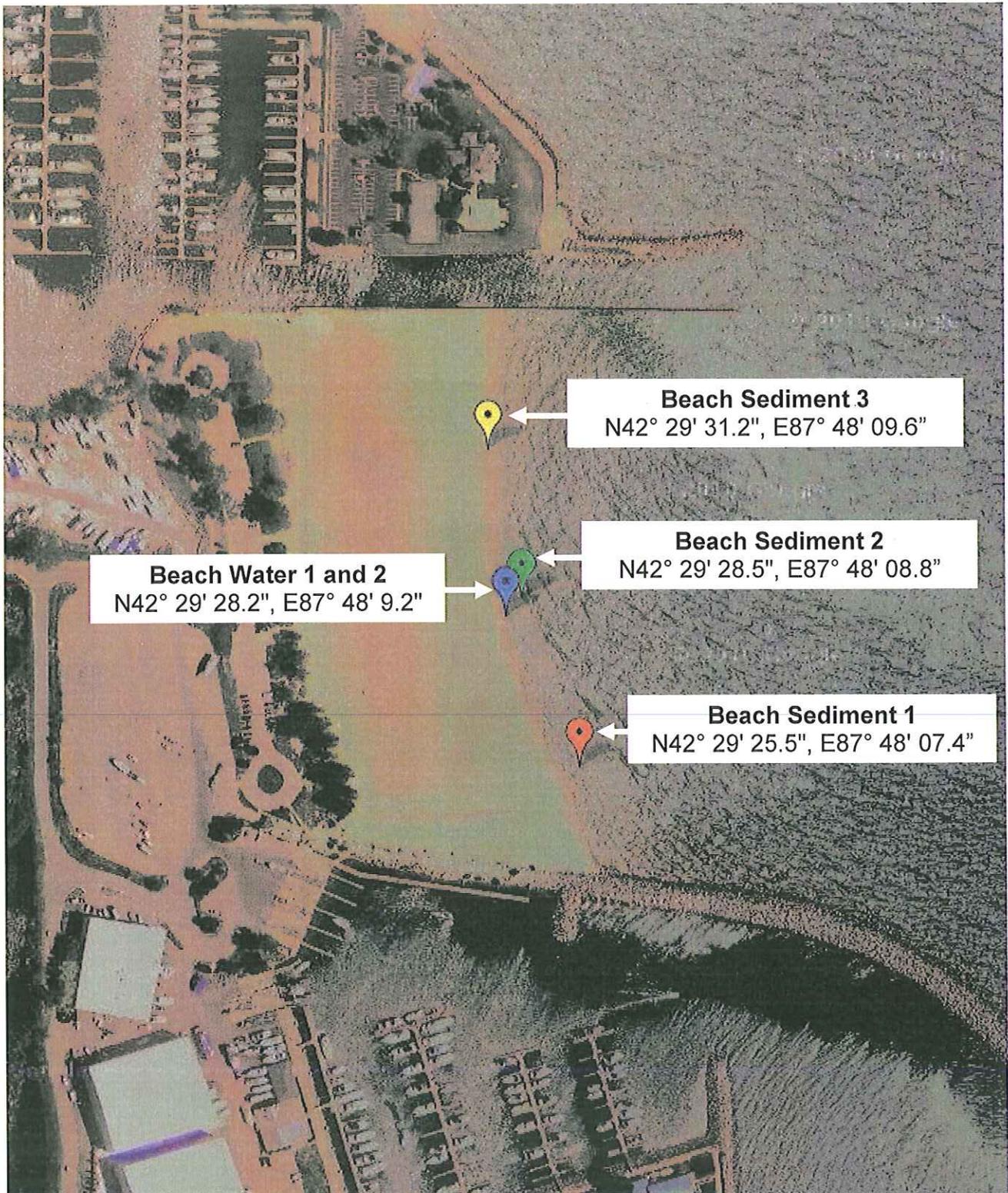
SLI Field Tech 1:

Patrick Rodriguez

SLI Field Tech 2:

[Signature]

Background Beach Sampling 05/23/12





July 25, 2012

Wayne Moon
Ryba Marine Construction Co.
629 N. Main Street
P.O. BOX 265
Cheboygan, Michigan 49721

Workorder: 1207615

TEL: (231) 420-4350

FAX:

RE: Waukegan Harbor Approach Channel Dredgin

Dear Wayne Moon:

Suburban Laboratories, Inc. received 6 sample(s) on 07/12/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,

A handwritten signature in black ink that reads "Melissa Amador". The signature is written in a cursive, flowing style.

Melissa Amador
Project Manager





Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

Case Narrative

Client: Ryba Marine Construction Co.

Date: July 25, 2012

Project: Waukegan Harbor Approach Channel Dredging

PO #:

WorkOrder: 1207615

QC Level:

Temperature of samples upon receipt at SLI: 2 C

Chain of Custody #: EV

General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:

ASBESTOS:

1207615-001B, -002B, -003B: G = Samples subcontracted to United Analytical Services, Inc., Downers Grove, IL for the TEM and PLM analyses requested. Their report is attached.

Client: Ryba Marine Construction Co.

Date: July 25, 2012

Project: Waukegan Harbor Approach Channel Dredgin

PO #:

WorkOrder: 1207615

QC Level:

Temperature of samples upon receipt at SLI: 2 C

Chain of Custody #: EV

GRAIN SIZE and PARTICLE SIZE:

1207615-001C, -002C, -003C: G = Samples subcontracted to Interra, Inc (formerly Great Lakes Soil & Environmental Consultants, Inc.), Bolingbrook, IL for the TEM and PLM analyses requested. Their report is attached.



Client ID: Ryba Marine Construction Co.

Report Date: July 25, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207615

Client Sample ID: After Operations Sediment #1

Matrix: SEDIMENT

Lab ID: 1207615-001

Date Received: 07/12/2012 3:25 PM

Collection Date: 07/12/2012 11:45 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
PCBS		Method: EPA-8082-Rev 0, Dec-96			Analyst: mn		
Aroclor 1016	ND	14.8		µg/Kg	1	07/17/2012 3:47 PM	10353
Aroclor 1221	ND	14.8		µg/Kg	1	07/17/2012 3:47 PM	10353
Aroclor 1232	ND	14.8		µg/Kg	1	07/17/2012 3:47 PM	10353
Aroclor 1242	ND	14.8		µg/Kg	1	07/17/2012 3:47 PM	10353
Aroclor 1248	ND	14.8		µg/Kg	1	07/17/2012 3:47 PM	10353
Aroclor 1254	ND	14.8		µg/Kg	1	07/17/2012 3:47 PM	10353
Aroclor 1260	ND	14.8		µg/Kg	1	07/17/2012 3:47 PM	10353
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	56.3	33.7-156		%REC	1	07/17/2012 3:47 PM	10353
ASBESTOS		Method:			Analyst: maa		
Subcontracted Test	Attached	0	G		1	07/20/2012 12:00 AM	R25340
GRAIN SIZE, SUBCONTRACTED		Method:			Analyst: maa		
Subcontracted Test	Attached	0	G		1	07/16/2012 12:00 AM	R25168
PARTICLE SIZE, SUBCONTRACTED		Method:			Analyst: maa		
Subcontracted Test	Attached	0	G		1	07/17/2012 12:00 AM	R25168

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 25, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207615

Client Sample ID: After Operations Sediement #2

Matrix: SEDIMENT

Lab ID: 1207615-002

Date Received: 07/12/2012 3:25 PM

Collection Date: 07/12/2012 12:20 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
PCBS		Method: EPA-8082-Rev 0, Dec-96			Analyst: mn		
Aroclor 1016	ND	14.8		µg/Kg	1	07/17/2012 4:05 PM	10353
Aroclor 1221	ND	14.8		µg/Kg	1	07/17/2012 4:05 PM	10353
Aroclor 1232	ND	14.8		µg/Kg	1	07/17/2012 4:05 PM	10353
Aroclor 1242	ND	14.8		µg/Kg	1	07/17/2012 4:05 PM	10353
Aroclor 1248	ND	14.8		µg/Kg	1	07/18/2012 7:14 PM	10353
Aroclor 1254	ND	14.8		µg/Kg	1	07/17/2012 4:05 PM	10353
Aroclor 1260	ND	14.8		µg/Kg	1	07/17/2012 4:05 PM	10353
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	76.3	33.7-156		%REC	1	07/17/2012 4:05 PM	10353
ASBESTOS		Method:			Analyst: maa		
Subcontracted Test	Attached	0	G		1	07/20/2012 12:00 AM	R25340
GRAIN SIZE, SUBCONTRACTED		Method:			Analyst: maa		
Subcontracted Test	Attached	0	G		1	07/16/2012 12:00 AM	R25168
PARTICLE SIZE, SUBCONTRACTED		Method:			Analyst: maa		
Subcontracted Test	Attached	0	G		1	07/17/2012 12:00 AM	R25168

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 25, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207615

Client Sample ID: After Operations Sediement #3

Matrix: SEDIMENT

Lab ID: 1207615-003

Date Received: 07/12/2012 3:25 PM

Collection Date: 07/12/2012 12:45 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
PCBS		Method: EPA-8082-Rev 0, Dec-96			Analyst: mn		
Aroclor 1016	ND	15.3		µg/Kg	1	07/17/2012 4:24 PM	10353
Aroclor 1221	ND	15.3		µg/Kg	1	07/17/2012 4:24 PM	10353
Aroclor 1232	ND	15.3		µg/Kg	1	07/17/2012 4:24 PM	10353
Aroclor 1242	ND	15.3		µg/Kg	1	07/17/2012 4:24 PM	10353
Aroclor 1248	16.3	15.3		µg/Kg	1	07/18/2012 7:33 PM	10353
Aroclor 1254	ND	15.3		µg/Kg	1	07/17/2012 4:24 PM	10353
Aroclor 1260	ND	15.3		µg/Kg	1	07/17/2012 4:24 PM	10353
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	75.0	33.7-156		%REC	1	07/17/2012 4:24 PM	10353
ASBESTOS		Method:			Analyst: maa		
Subcontracted Test	Attached	0	G		1	07/20/2012 12:00 AM	R25340
GRAIN SIZE, SUBCONTRACTED		Method:			Analyst: maa		
Subcontracted Test	Attached	0	G		1	07/16/2012 12:00 AM	R25168
PARTICLE SIZE, SUBCONTRACTED		Method:			Analyst: maa		
Subcontracted Test	Attached	0	G		1	07/17/2012 12:00 AM	R25168

Client Sample ID: Supernatant Prep

Matrix: SURFACE WATER

Lab ID: 1207615-004

Date Received: 07/12/2012 3:25 PM

Collection Date: 07/12/2012 12:00 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
SUPERNATANT		Method:			Analyst: sb		
Supernatant	complete	0			1	07/16/2012 10:00 AM	R25109

- Qualifiers:**
- * / x Value exceeds Maximum Contaminant Level
 - c Analyte not in SLI scope of accreditation
 - G Refer to case narrative page for specific comments
 - J Analyte detected below quantitation limit (QL)
 - ND Not Detected at the Reporting Limit
 - S Spike Recovery outside accepted recovery limits
 - B Analyte detected in the associated Method Blank
 - E Estimated, detected above quantitation range
 - H Holding times for preparation or analysis exceeded
 - N Tentatively identified compounds
 - R RPD outside accepted recovery limits



Client ID: Ryba Marine Construction Co.

Report Date: July 25, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207615

Client Sample ID: Zero-Hour Elutriate

Matrix: AQUEOUS

Lab ID: 1207615-005

Date Received: 07/12/2012 3:25 PM

Collection Date: 07/16/2012 12:00 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
METALS BY ICPMS		Method: SW846-SW6020-Rev 0, Sep-94			Analyst: dc		
Lead	0.0453	0.00010		mg/L	1	07/25/2012 1:31 PM	10426
Zinc	0.116	0.00300		mg/L	1	07/25/2012 1:31 PM	10426
PCBS		Method: EPA-SW8082-Rev 0, Dec-96			Analyst: mn		
Aroclor 1016	ND	0.118		µg/L	1	07/18/2012 6:19 PM	10410
Aroclor 1221	ND	0.118		µg/L	1	07/18/2012 6:19 PM	10410
Aroclor 1232	ND	0.118		µg/L	1	07/18/2012 6:19 PM	10410
Aroclor 1242	ND	0.118		µg/L	1	07/18/2012 6:19 PM	10410
Aroclor 1248	ND	0.118		µg/L	1	07/18/2012 6:19 PM	10410
Aroclor 1254	ND	0.118		µg/L	1	07/18/2012 6:19 PM	10410
Aroclor 1260	ND	0.118		µg/L	1	07/18/2012 6:19 PM	10410
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	73.8	40.4-143		%REC	1	07/18/2012 6:19 PM	10410
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992			Analyst: LAP		
Chloride	10.8	0.500		mg/L	1	07/17/2012 11:56 AM	R25084
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992			Analyst: jos		
Hardness, Ca/Mg (As CaCO ₃)	1,530	0.050	c	mg/L	1	07/20/2012 3:50 PM	R25267
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992			Analyst: vyc		
Nitrogen, Ammonia (As N)	0.375	0.0100		mg/L	1	07/19/2012 12:39 PM	R25172
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992			Analyst: vyc		
Phosphorus (As P)	0.244	0.00500		mg/L	1	07/18/2012 8:52 AM	10397
PH (IN LABORATORY) <ATC>		Method: EPA-SW9040B-Rev 3, Jan-95			Analyst: LAP		
pH	8.03	0	c	pH Units	1	07/16/2012 4:37 PM	R25053
SULFATE		Method: ASTM-ASTM D516-Rev 2004			Analyst: LAP		
Sulfate	26	1.0		mg/L	1	07/16/2012 5:12 PM	R25055
TOTAL DISSOLVED SOLIDS		Method: SM-M2540C-Rev 18Ed, 1992			Analyst: sb		

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 25, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207615

TOTAL DISSOLVED SOLIDS		Method: SM-M2540C-Rev 18Ed, 1992			Analyst: sb	
Residue, Filterable	853	0.333	mg/L	0.333	07/18/2012 9:15 AM	R25115
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992			Analyst: sb	
Residue, Non-Filterable	128,000	100	mg/L	1	07/17/2012 2:36 PM	R25082
TOTAL VOLATILE SOLIDS		Method:			Analyst: sb	
Total Volatile Solids	12,500	1.00	c mg/L	1	07/17/2012 2:20 PM	R25087

- Qualifiers:**
- */x Value exceeds Maximum Contaminant Level
 - c Analyte not in SLI scope of accreditation
 - G Refer to case narrative page for specific comments
 - J Analyte detected below quantitation limit (QL)
 - ND Not Detected at the Reporting Limit
 - S Spike Recovery outside accepted recovery limits
 - B Analyte detected in the associated Method Blank
 - E Estimated, detected above quantitation range
 - H Holding times for preparation or analysis exceeded
 - N Tentatively identified compounds
 - R RPD outside accepted recovery limits



Client ID: Ryba Marine Construction Co.

Report Date: July 25, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207615

Client Sample ID: Four-Hour Elutriate

Matrix: AQUEOUS

Lab ID: 1207615-006

Date Received: 07/12/2012 3:25 PM

Collection Date: 07/16/2012 12:00 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
METALS BY ICPMS		Method: SW846-SW6020-Rev 0, Sep-94			Analyst: dc		
Lead	0.00398	0.00010		mg/L	1	07/25/2012 1:36 PM	10426
Zinc	0.0131	0.00300		mg/L	1	07/25/2012 1:36 PM	10426
PCBS		Method: EPA-SW8082-Rev 0, Dec-96			Analyst: mn		
Aroclor 1016	ND	0.143		µg/L	1	07/18/2012 6:37 PM	10410
Aroclor 1221	ND	0.143		µg/L	1	07/18/2012 6:37 PM	10410
Aroclor 1232	ND	0.143		µg/L	1	07/18/2012 6:37 PM	10410
Aroclor 1242	ND	0.143		µg/L	1	07/18/2012 6:37 PM	10410
Aroclor 1248	ND	0.143		µg/L	1	07/18/2012 6:37 PM	10410
Aroclor 1254	ND	0.143		µg/L	1	07/18/2012 6:37 PM	10410
Aroclor 1260	ND	0.143		µg/L	1	07/18/2012 6:37 PM	10410
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	97.5	40.4-143		%REC	1	07/18/2012 6:37 PM	10410
CHLORIDE		Method: APHA-M4500-Cl ⁻ E-Rev 18th, 1992			Analyst: LAP		
Chloride	9.45	0.500		mg/L	1	07/17/2012 11:56 AM	R25084
HARDNESS, TOTAL		Method: SM-2340B-Rev 18Ed, 1992			Analyst: jos		
Hardness, Ca/Mg (As CaCO ₃)	193	0.050	c	mg/L	1	07/20/2012 3:50 PM	R25267
AMMONIA, BY SELECTIVE ELECTRODE		Method: SM-M4500NH ₃ F-Rev 18Ed, 1992			Analyst: vyc		
Nitrogen, Ammonia (As N)	0.195	0.0100		mg/L	1	07/19/2012 12:39 PM	R25172
PHOSPHORUS, TOTAL		Method: SM-M4500P BE-Rev 18Ed, 1992			Analyst: vyc		
Phosphorus (As P)	0.160	0.00500		mg/L	1	07/18/2012 8:52 AM	10397
PH (IN LABORATORY) <ATC>		Method: EPA-SW9040B-Rev 3, Jan-95			Analyst: LAP		
pH	8.16	0	c	pH Units	1	07/16/2012 5:40 PM	R25053
SULFATE		Method: ASTM-ASTM D516-Rev 2004			Analyst: LAP		
Sulfate	26	1.0		mg/L	1	07/16/2012 6:13 PM	R25061
TOTAL DISSOLVED SOLIDS		Method: SM-M2540C-Rev 18Ed, 1992			Analyst: sb		

Qualifiers:	*/x	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	c	Analyte not in SLI scope of accreditation	E	Estimated, detected above quantitation range
	G	Refer to case narrative page for specific comments	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limit (QL)	N	Tentatively identified compounds
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits		



Client ID: Ryba Marine Construction Co.

Report Date: July 25, 2012

Project Name: Waukegan Harbor Approach Channel Dredgin

Workorder: 1207615

TOTAL DISSOLVED SOLIDS		Method: SM-M2540C-Rev 18Ed, 1992			Analyst: sb	
Residue, Filterable	280	0.125	mg/L	0.125	07/18/2012 9:15 AM	R25115
TOTAL SUSPENDED SOLIDS		Method: SM-M2540D-Rev 18Ed, 1992			Analyst: sb	
Residue, Non-Filterable	131	1.00	mg/L	1	07/17/2012 2:36 PM	R25082
TOTAL VOLATILE SOLIDS		Method:			Analyst: sb	
Total Volatile Solids	164,000	1.00	c mg/L	1	07/17/2012 2:20 PM	R25087

- Qualifiers:**
- * / x Value exceeds Maximum Contaminant Level
 - c Analyte not in SLI scope of accreditation
 - G Refer to case narrative page for specific comments
 - J Analyte detected below quantitation limit (QL)
 - ND Not Detected at the Reporting Limit
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 - N Tentatively identified compounds
 - R RPD outside accepted recovery limits



Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

PREP DATES REPORT

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Chan

Report Date: July 25, 2012
Lab Order: 1207615

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1207615-001A	07/12/12 11:45:00 A	10353	3550_PCB	SOLID PREP SONICATION: PCB		07/16/12
1207615-002A	07/12/12 12:20:00 P	10353	3550_PCB	SOLID PREP SONICATION: PCB		07/16/12
1207615-003A	07/12/12 12:45:00 P	10353	3550_PCB	SOLID PREP SONICATION: PCB		07/16/12
1207615-005B	07/16/12	10397	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/18/12
1207615-005C		10427	200.2_ICPW_PR	AQUEOUS PREP TOTAL METALS: ICP		07/19/12
		10426	200.2_ICPMS_W	AQUEOUS PREP TOTAL METALS: ICP		07/19/12
1207615-005D		10410	3510_PCB	AQUEOUS PREP SEP FUNNEL: PCB		07/18/12
1207615-006B		10397	P_WW_LOWPR	PHOSPHORUS, TOTAL		07/18/12
1207615-006C		10427	200.2_ICPW_PR	AQUEOUS PREP TOTAL METALS: ICP		07/19/12
		10426	200.2_ICPMS_W	AQUEOUS PREP TOTAL METALS: ICP		07/19/12
1207615-006D		10410	3510_PCB	AQUEOUS PREP SEP FUNNEL: PCB		07/18/12



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QC SUMMARY REPORT

WO#: **1207615**
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: 6020_W

Sample ID: MB-10426	SampType: MBLK	TestCode: 6020_W	Units: mg/L	Prep Date: 07/19/12	RunNo: 25375
Client ID: PBW	Batch ID: 10426	TestNo: SW6020	E200.2	Analysis Date: 07/25/12	SeqNo: 546376
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead	ND	0.00020			
Zinc	ND	0.00300			

Sample ID: LCS-10426	SampType: LCS	TestCode: 6020_W	Units: mg/L	Prep Date: 07/19/12	RunNo: 25375
Client ID: LCSW	Batch ID: 10426	TestNo: SW6020	E200.2	Analysis Date: 07/25/12	SeqNo: 546377
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead	0.0495	0.00020	0.05000	0	99.0	85	115
Zinc	0.0494	0.00300	0.05000	0	98.7	85	115

Sample ID: 1207615-006CMS	SampType: MS	TestCode: 6020_W	Units: mg/L	Prep Date: 07/19/12	RunNo: 25375
Client ID: Four-Hour Elutriate	Batch ID: 10426	TestNo: SW6020	E200.2	Analysis Date: 07/25/12	SeqNo: 546382
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead	0.0481	0.00020	0.05000	0.003984	88.2	70	130
Zinc	0.0586	0.00300	0.05000	0.01310	91.0	70	130

Sample ID: 1207615-006CMSD	SampType: MSD	TestCode: 6020_W	Units: mg/L	Prep Date: 07/19/12	RunNo: 25375
Client ID: Four-Hour Elutriate	Batch ID: 10426	TestNo: SW6020	E200.2	Analysis Date: 07/25/12	SeqNo: 546383
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead	0.0504	0.00020	0.05000	0.003984	92.8	70	130	0.04808	4.70	20
Zinc	0.0584	0.00300	0.05000	0.01310	90.7	70	130	0.05860	0.256	20

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207615
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: 8082_S

Sample ID: 1016/1260 Ca	SampType: CCV	TestCode: 8082_S	Units: %REC	Prep Date:	RunNo: 25094						
Client ID: CCV	Batch ID: R25094	TestNo: SW8082		Analysis Date: 07/17/12	SeqNo: 539662						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: Decachlorobiphenyl	0.0890		0.1000		89.0	85	115				
Surr: Tetrachloro-m-xylene	0.0850		0.1000		85.0	85	115				

Sample ID: MB-10352	SampType: mblk	TestCode: 8082_S	Units: µg/Kg	Prep Date: 07/16/12	RunNo: 25094						
Client ID: PBS	Batch ID: 10353	TestNo: SW8082	SW3550B	Analysis Date: 07/17/12	SeqNo: 539663						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aroclor 1016	ND	16.7									
Aroclor 1221	ND	16.7									
Aroclor 1232	ND	16.7									
Aroclor 1242	ND	16.7									
Aroclor 1248	ND	16.7									
Aroclor 1254	ND	16.7									
Aroclor 1260	ND	16.7									
Surr: Tetrachloro-m-xylene	4.83		13.33		36.3	33.7	156				

Sample ID: LCS-10353	SampType: LCS	TestCode: 8082_S	Units: µg/Kg	Prep Date: 07/16/12	RunNo: 25094						
Client ID: LCSS	Batch ID: 10353	TestNo: SW8082	SW3550B	Analysis Date: 07/17/12	SeqNo: 539664						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aroclor 1016	144	16.7	166.7	0	86.4	10	215				
Aroclor 1260	143	16.7	166.7	0	85.7	58.2	140				
Surr: Decachlorobiphenyl	12.3		13.33		92.5	41.4	165				
Surr: Tetrachloro-m-xylene	12.3		13.33		92.5	33.7	156				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
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QC SUMMARY REPORT

WO#: **1207615**
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: 8082_W

Sample ID: 1016/1260 Ca	SampType: CCV	TestCode: 8082_W	Units: %REC	Prep Date:	RunNo: 25169						
Client ID: CCV	Batch ID: R25169	TestNo: SW8082		Analysis Date: 07/18/12	SeqNo: 541324						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: Decachlorobiphenyl	92.0		100.0		92.0	85	115				
Surr: Tetrachloro-m-xylene	113		100.0		113	85	115				

Sample ID: MB-10410	SampType: mblik	TestCode: 8082_W	Units: µg/L	Prep Date: 07/18/12	RunNo: 25169						
Client ID: PBW	Batch ID: 10410	TestNo: SW8082	SW3510B	Analysis Date: 07/18/12	SeqNo: 541325						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aroclor 1016	ND	0.100									
Aroclor 1221	ND	0.100									
Aroclor 1232	ND	0.100									
Aroclor 1242	ND	0.100									
Aroclor 1248	ND	0.100									
Aroclor 1254	ND	0.100									
Aroclor 1260	ND	0.100									
Surr: Decachlorobiphenyl	0.170		0.4000		42.5	10	200				
Surr: Tetrachloro-m-xylene	0.305		0.4000		76.2	40.4	143				

Sample ID: LCS-10410	SampType: LCS	TestCode: 8082_W	Units: µg/L	Prep Date: 07/18/12	RunNo: 25169						
Client ID: LCSW	Batch ID: 10410	TestNo: SW8082	SW3510B	Analysis Date: 07/18/12	SeqNo: 541326						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aroclor 1016	3.90	0.100	5.000	0	77.9	10	215				
Aroclor 1260	3.61	0.100	5.000	0	72.2	63	135				
Surr: Decachlorobiphenyl	0.225		0.4000		56.2	10	200				
Surr: Tetrachloro-m-xylene	0.305		0.4000		76.2	40.4	143				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
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QC SUMMARY REPORT

WO#: 1207615
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R25084CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 25084
Client ID: CCB	Batch ID: R25084	TestNo: A4500-CI- E		Analysis Date: 07/17/12	SeqNo: 539431
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00									
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Sample ID: R25084CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 25084
Client ID: CCV	Batch ID: R25084	TestNo: A4500-CI- E		Analysis Date: 07/17/12	SeqNo: 539432
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	95.3	5.00	100.0	0	95.3	90	110				
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Sample ID: R25084ICV	SampType: ICV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 25084
Client ID: ICV	Batch ID: R25084	TestNo: A4500-CI- E		Analysis Date: 07/17/12	SeqNo: 539433
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	93.9	5.00	100.0	0	93.9	90	110				
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Sample ID: MB-R25084	SampType: MBLK	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 25084
Client ID: PBW	Batch ID: R25084	TestNo: A4500-CI- E		Analysis Date: 07/17/12	SeqNo: 539434
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	ND	5.00									
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Sample ID: LCS-R25084	SampType: LCS	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 25084
Client ID: LCSW	Batch ID: R25084	TestNo: A4500-CI- E		Analysis Date: 07/17/12	SeqNo: 539435
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	94.2	5.00	100.0	0	94.2	85	115				
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Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
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QC SUMMARY REPORT

WO#: 1207615
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R25084CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 25084
Client ID: CCV	Batch ID: R25084	TestNo: A4500-CI- E		Analysis Date: 07/17/12	SeqNo: 539444
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	99.6	5.00	100.0	0	99.6 90 110

Sample ID: R25084CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 25084
Client ID: CCB	Batch ID: R25084	TestNo: A4500-CI- E		Analysis Date: 07/17/12	SeqNo: 539445
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: R25084CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 25084
Client ID: CCV	Batch ID: R25084	TestNo: A4500-CI- E		Analysis Date: 07/17/12	SeqNo: 539456
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	101	5.00	100.0	0	101 90 110

Sample ID: R25084CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 25084
Client ID: CCB	Batch ID: R25084	TestNo: A4500-CI- E		Analysis Date: 07/17/12	SeqNo: 539457
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	5.00			

Sample ID: R25084CCV	SampType: CCV	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 25084
Client ID: CCV	Batch ID: R25084	TestNo: A4500-CI- E		Analysis Date: 07/17/12	SeqNo: 539463
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	93.5	5.00	100.0	0	93.5 90 110

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1207615**
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: CL_WW1

Sample ID: R25084CCB	SampType: CCB	TestCode: CL_WW1	Units: mg/L	Prep Date:	RunNo: 25084						
Client ID: CCB	Batch ID: R25084	TestNo: A4500-CI- E		Analysis Date: 07/17/12	SeqNo: 539464						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	5.00									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207615
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: NH3_WW_LOW

Sample ID: MB-R25172	SampType: MBLK	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 25172
Client ID: PBW	Batch ID: R25172	TestNo: A4500-NH3 D	Analysis Date: 07/19/12	SeqNo: 541477	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	ND	0.0200			

Sample ID: R25172ICV	SampType: ICV	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 25172
Client ID: ICV	Batch ID: R25172	TestNo: A4500-NH3 D	Analysis Date: 07/19/12	SeqNo: 541478	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	0.453	0.0200	0.5000	0	90.7 90 110

Sample ID: R25172CCB	SampType: CCB	TestCode: NH3_WW_LO	Units: mg/L	Prep Date:	RunNo: 25172
Client ID: CCB	Batch ID: R25172	TestNo: A4500-NH3 D	Analysis Date: 07/19/12	SeqNo: 541482	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrogen, Ammonia (As N)	ND	0.0200			

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: **1207615**
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: P_WW_LOW

Sample ID: MB-10397	SampType: MBLK	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/18/12	RunNo: 25111
Client ID: PBW	Batch ID: 10397	TestNo: A4500-P BE A4500-P BE		Analysis Date: 07/18/12	SeqNo: 540320
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) ND 0.0120

Sample ID: LCS-10397	SampType: LCS	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/18/12	RunNo: 25111
Client ID: LCSW	Batch ID: 10397	TestNo: A4500-P BE A4500-P BE		Analysis Date: 07/18/12	SeqNo: 540321
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) 0.0570 0.0120 0.05000 0 114 85 115

Sample ID: 1207615-006BDUP	SampType: DUP	TestCode: P_WW_LOW	Units: mg/L	Prep Date: 07/18/12	RunNo: 25111
Client ID: Four-Hour Elutriate	Batch ID: 10397	TestNo: A4500-P BE A4500-P BE		Analysis Date: 07/18/12	SeqNo: 540324
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Phosphorus (As P) 0.162 0.0120 0.1604 1.08 20

Qualifiers:

%X Value exceeds Maximum Contaminant Level	E Estimated, detected above quantitation range	H Holding times for preparation or analysis exceeded
M Manual Integration used to determine area response	ND Not Detected at the Reporting Limit	P Second column confirmation exceeds
R RPD outside accepted recovery limits	RL Reporting Detection Limit	S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1207615**
25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: PH_W

Sample ID: 1207615-005ADUP	SampType: DUP	TestCode: pH_W	Units: pH Units	Prep Date:	RunNo: 25053						
Client ID: Zero-Hour Elutriate	Batch ID: R25053	TestNo: SW9040B		Analysis Date: 07/16/12	SeqNo: 538356						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.05	0						8.030	0.249	20	

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceed
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207615
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: SO4_WW

Sample ID: R25055CCB	SampType: CCB	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25055
Client ID: CCB	Batch ID: R25055	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 538371
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sulfate	ND	10									
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Sample ID: R25055CCV	SampType: CCV	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25055
Client ID: CCV	Batch ID: R25055	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 538372
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sulfate	39	10	40.00	0	98.1	90	110				
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Sample ID: R25055ICV	SampType: ICV	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25055
Client ID: ICV	Batch ID: R25055	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 538373
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sulfate	39	10	40.00	0	97.4	90	110				
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Sample ID: MB-R25055	SampType: MBLK	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25055
Client ID: PBW	Batch ID: R25055	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 538374
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sulfate	ND	10									
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Sample ID: LCS-R25055	SampType: LCS	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25055
Client ID: LCSW	Batch ID: R25055	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 538375
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sulfate	38	10	40.00	0	95.6	90	110				
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Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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 Website: www.SuburbanLabs.com

QC SUMMARY REPORT

WO#: 1207615
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: SO4_WW

Sample ID: R25055CCV	SampType: CCV	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25055						
Client ID: CCV	Batch ID: R25055	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 538378						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	40	10	40.00	0	98.8	90	110				

Sample ID: R25055CCB	SampType: CCB	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25055						
Client ID: CCB	Batch ID: R25055	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 538379						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	10									

Sample ID: R25055CCV	SampType: CCV	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25055						
Client ID: CCV	Batch ID: R25055	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 538383						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	39	10	40.00	0	96.6	90	110				

Sample ID: R25055CCB	SampType: CCB	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25055						
Client ID: CCB	Batch ID: R25055	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 538384						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	10									

Sample ID: R25055CCV	SampType: CCV	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25055						
Client ID: CCV	Batch ID: R25055	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 538386						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	38	10	40.00	0	94.5	90	110				

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207615
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: SO4_WW

Sample ID: R25055CCB	SampType: CCB	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25055
Client ID: CCB	Batch ID: R25055	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 538387
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sulfate	1.2	10			
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Sample ID: R25061CCB	SampType: CCB	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25061
Client ID: CCB	Batch ID: R25061	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 539106
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sulfate	ND	10			
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Sample ID: R25061CCV	SampType: CCV	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25061
Client ID: CCV	Batch ID: R25061	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 539107
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sulfate	40	10	40.00	0	100 90 110
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Sample ID: R25061ICV	SampType: ICV	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25061
Client ID: ICV	Batch ID: R25061	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 539108
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sulfate	40	10	40.00	0	99.0 90 110
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Sample ID: MB-R25061	SampType: MBLK	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25061
Client ID: PBW	Batch ID: R25061	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 539109
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sulfate	ND	10			
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Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 1207615
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: SO4_WW

Sample ID: LCS-R25061	SampType: LCS	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25061						
Client ID: LCSW	Batch ID: R25061	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 539110						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	39	10	40.00	0	96.7	90	110				

Sample ID: R25061CCV	SampType: CCV	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25061						
Client ID: CCV	Batch ID: R25061	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 539120						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	40	10	40.00	0	99.2	90	110				

Sample ID: R25061CCB	SampType: CCB	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25061						
Client ID: CCB	Batch ID: R25061	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 539121						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	10									

Sample ID: R25061CCV	SampType: CCV	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25061						
Client ID: CCV	Batch ID: R25061	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 539145						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	40	10	40.00	0	98.8	90	110				

Sample ID: R25061CCB	SampType: CCB	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25061						
Client ID: CCB	Batch ID: R25061	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 539146						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	10									

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1207615**
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: SO4_WW

Sample ID: R25061CCV	SampType: CCV	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25061						
Client ID: CCV	Batch ID: R25061	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 539152						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	39	10	40.00	0	97.5	90	110				

Sample ID: R25061CCB	SampType: CCB	TestCode: SO4_WW	Units: mg/L	Prep Date:	RunNo: 25061						
Client ID: CCB	Batch ID: R25061	TestNo: ASTM-D516		Analysis Date: 07/16/12	SeqNo: 539153						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	10									

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1207615**
25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TDS_WW_LOW

Sample ID: MB-R25115	SampType: MBLK	TestCode: TDS_WW_LO	Units: mg/L	Prep Date:	RunNo: 25115						
Client ID: PBW	Batch ID: R25115	TestNo: A2540C		Analysis Date: 07/18/12	SeqNo: 542866						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Filterable	ND	0.400									

Sample ID: 1207615-006ADUP	SampType: DUP	TestCode: TDS_WW_LO	Units: mg/L	Prep Date:	RunNo: 25115						
Client ID: Four-Hour Elutriate	Batch ID: R25115	TestNo: A2540C		Analysis Date: 07/18/12	SeqNo: 542868						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Filterable	258	0.500						280.2	8.46	10	

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1207615**
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TSS

Sample ID: MB-R25082	SampType: MBLK	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 25082						
Client ID: PBW	Batch ID: R25082	TestNo: A2540D		Analysis Date: 07/17/12	SeqNo: 540182						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	ND	1.00									

Sample ID: 1207689-001ADUP	SampType: DUP	TestCode: TSS	Units: mg/L	Prep Date:	RunNo: 25082						
Client ID: ZZZZZZ	Batch ID: R25082	TestNo: A2540D		Analysis Date: 07/17/12	SeqNo: 540197						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Residue, Non-Filterable	45.0	5.00						41.00	9.30	10	

Qualifiers:

*/X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: **1207615**
 25-Jul-12

Client: Ryba Marine Construction Co.
Project: Waukegan Harbor Approach Channel Dredgin

TestCode: TVS_WW_LOW

Sample ID: MB-R25087	SampType: MBLK	TestCode: TVS_WW_LO	Units: mg/L	Prep Date:	RunNo: 25087						
Client ID: PBW	Batch ID: R25087	TestNo: A2540E		Analysis Date: 07/17/12	SeqNo: 539468						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Volatile Solids	ND	4.00									

Sample ID: 1207615-005ADUP	SampType: DUP	TestCode: TVS_WW_LO	Units: mg/L	Prep Date:	RunNo: 25087						
Client ID: Zero-Hour Elutriate	Batch ID: R25087	TestNo: A2540E		Analysis Date: 07/17/12	SeqNo: 539470						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Volatile Solids	12,200	4.00						12,540	2.69	10	

Qualifiers:

%X	Value exceeds Maximum Contaminant Level	E	Estimated, detected above quantitation range	H	Holding times for preparation or analysis exceeded
M	Manual Integration used to determine area response	ND	Not Detected at the Reporting Limit	P	Second column confirmation exceeds
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits



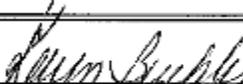
UNITED ANALYTICAL SERVICES, INC.
 1420 CENTRE CIRCLE DRIVE, DOWNERS GROVE, IL 60515
 PHONE (630) 691-8271 FAX (630) 691-1810

TEM CHATFIELD LABORATORY REPORT

METHOD: <u>Chatfield Method SOP-1988-02</u>	REPORT DATE: <u>July 20, 2012</u>
CLIENT: <u>Suburban Laboratories, Inc.</u>	DATE RECEIVED: <u>July 13, 2012</u>
ATTENTION: <u>Melissa Amador</u>	UAS SAM #: <u>1216853</u>
email: <u>melissa@suburbanlabs.com</u>	JOB LOCATION: <u>1207615</u>

CLIENT SAMPLE #	LAB SAMPLE #	SAMPLE DESCRIPTION/LOCATION	% ORGANICS	% ACID SOLUBLE	ASBESTOS TYPE(S)	% ASBESTOS
1207615-001B	1216853-01	Sediment	--	--	ND	NSD
1207615-002B	1216853-02	Sediment	--	--	ND	NSD
1207615-003B	1216853-03	Sediment	--	--	ND	NSD

NSD=No Structures Detected
Comments:
 Samples prepped according to Chatfield Method SOP-1988-02
 Report shall not be reproduced in except in full, without the written approval of the laboratory.
 Laboratory not responsible for the physical separation of layered materials.
 Laboratory results only pertain to those items delivered.
 Samples will be discarded if not notified by the client within 90 days.


 ANALYZED BY- Karen Buehler / Laboratory Manager

July 20, 2012
 DATE ANALYZED



NVLAP Laboratory # 101732

AIHA-AAR Participant # 101212

This report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government.
 United Analytical Services, Inc./Laboratory/General/TEM/TEM Chatfield Laboratory Report/12.03



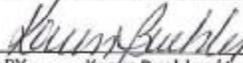
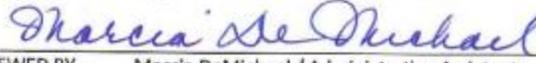
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 1429 CENTRE CIRCLE DRIVE, BORNHUES GROVE, IL 60015
 PHONE: (630) 691-8271 FAX: (630) 691-1819

PLM LABORATORY REPORT

METHOD:	<u>EPA/600/R-93/116 July 1993</u> <u>PLM w/ Dispersion Staining</u>	REPORT DATE:	<u>July 20, 2012</u>
CLIENT:	<u>Suburban Laboratories, Inc.</u>	DATE RECEIVED:	<u>July 13, 2012</u>
ATTENTION:	<u>Melissa Amador</u>	UAS SAM#:	<u>1216853</u>
email:	<u>mellisa@suburbanlabs.com</u>	JOB LOCATION:	<u>1207615</u>

LAB SAMPLE #	CLIENT SAMPLE #	COLOR	DESCRIPTION LOCATION	ASBESTOS TYPE	%	OTHER FIBERS	%	MATRIX	%
1216853 -01	1207615-001B	Tan	Sediment	ND	--	ND	--	O	100
1216853 -02	1207615-002B	Tan	Sediment	ND	--	ND	--	O	100
1216853 -03	1207615-003B	Tan	Sediment	ND	--	ND	--	O	100

Analysis Comments: Samples analyzed according to the EPA/600/r-93 116 July 1993 titled Method for the Determination of Asbestos in Bulk Building Materials Further testing by Gravimetric or TEM methods are recommended for samples that are non-friable such as floor tiles, mastics, etc. Report shall not be reproduced except in full, without the written approval of the laboratory. Laboratory results pertain to those delivered for analysis. Samples will be discarded if not notified by the client within 90 days.	CODES ASBESTOS ND-None Detected CHRY-Chrysotile AMOS-Amosite CROC-Crocidolite TREM-Tremolite ACTN-Actinolite ANTH-Anthophyllite	CODES OTHER FIBERS FBGL-Fibrous Glass CELL-Cellulose SYN-Synthetic WOLL-Wollastonite H-Hair O-Other (Specify)	CODES MATRIX G-Gypsum C-Calcium Carbonate M-Mica O-Other Matrix
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 ANALYZED BY - Karen Buchler / Laboratory Manager

 REVIEWED BY - Marcia DeMichael / Administrative Assistant

July 20, 2012
 DATE ANALYZED
 July 20, 2012
 DATE REVIEWED



This report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government.



CLIENT NAME: Suburban Laboratories, Inc.
 CLIENT ADDRESS: 4140 Witt Drive
 CITY, STATE, ZIP: Hillside, IL 60162
 PHONE: 708-544-3200 x212
 FAX: 708-544-8587
 ATTENTION: Melissa Amador

CLIENT PROJECT NUMBER: 1207615
 CLIENT PROJECT NAME: 1207615
 P.O. NUMBER: _____

LAB USE ONLY
 UAS SAMPLE NUMBER: 1216853

Asbestos		Lead	Other	Turn-Around Time	
PCM <input type="checkbox"/> NIOSH 7400	TEM Air	<input type="checkbox"/> Air <input type="checkbox"/> Paint <input type="checkbox"/> Dust <input type="checkbox"/> Soil <input type="checkbox"/> TCLP	<input type="checkbox"/> _____ Notes:	<input type="checkbox"/> 2-8 Hours (RUSH / SAME DAY) <input type="checkbox"/> 4-6 Hours (TEM AHERA ONLY) <input type="checkbox"/> 6-8 Hours (TEM AHERA ONLY) <input type="checkbox"/> 6-8 Hours (TEM NIOSH 7402)	<input type="checkbox"/> 1 Day <input type="checkbox"/> 2 - 4 Days <input checked="" type="checkbox"/> 5 or More Days
PLM <input checked="" type="checkbox"/> EPA 600 <input type="checkbox"/> 400 Point Count <input type="checkbox"/> Gravimetric	<input type="checkbox"/> AHERA <input type="checkbox"/> 7402	Bulk <input checked="" type="checkbox"/> Chatfield <input type="checkbox"/> Qualitative <input type="checkbox"/> Microvac		* Must be received by laboratory staff at or before 11:00AM for same day service.	

Date Sampled	Client Sample Number	Sample Description / Location	Volume/Area	Comments	Laboratory Sample Number
07/12/12	1207615-001B	Sediment	1L		
07/12/12	1207615-002B	Sediment	1L		
07/12/12	1207615-003B	Sediment	1L		

ADDITIONAL COMMENTS/REQUESTS: _____ Please analyze for PLM and TEM by EPA 600 Series

Relinquished By: KO [Signature] Date: 7/15/12 Time: 2:33
 Relinquished By: _____ Date: _____ Time: _____
 Relinquished By: _____ Date: _____ Time: _____

Received By: [Signature] Date: 7/15/12 Time: 2:33
 Received By: _____ Date: _____ Time: _____
 Received By: _____ Date: _____ Time: _____



United Analytical Services, Inc./Laboratory/General/Chain of Custody 1.04
 Revised 7-7-05





Summary

Project	USACE Sediment Samples
Client	Suburban Laboratories-Hillside, IL
File #	6054

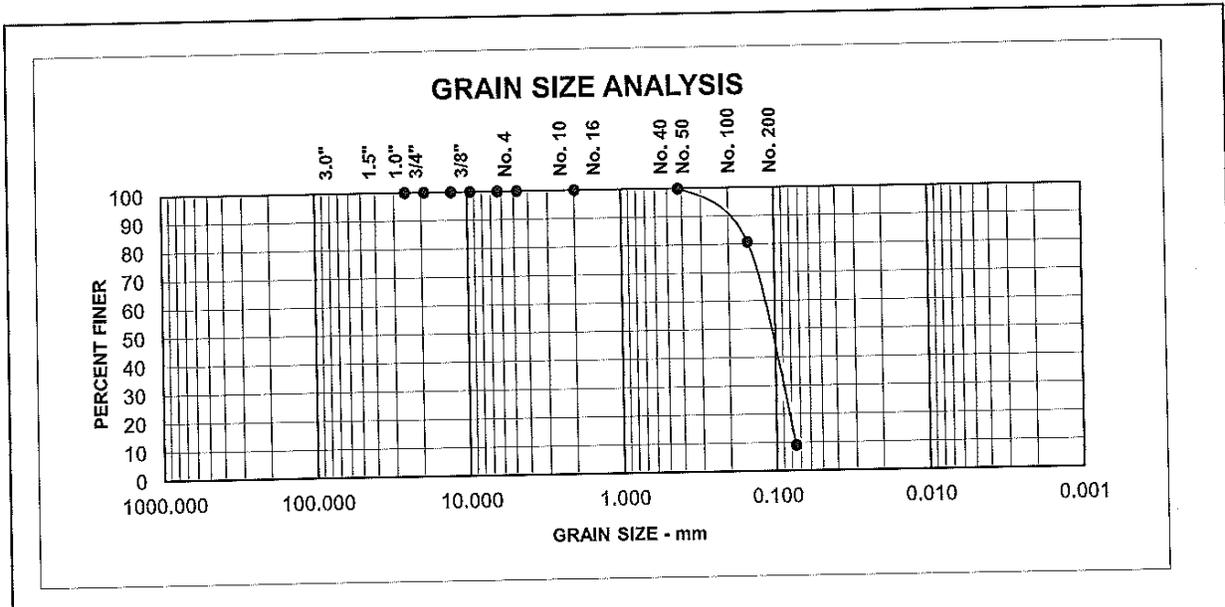
Sample ID	Atterberg, ASTM D4318	Grain Size ASTM D422,		IEPA,	Standard Proctor ASTM D698	
		Classification	Percent Fines, Sieve #230	Percent Fines, sieve #230	Maximum Density, pcf	Optimum Moisture, %
1 1207615-001C	N/A	SP-SM	6.1	6.26	N/A	N/A
2 1207615-002C	N/A	SP	1.0	1.38	N/A	N/A
3 1207615-003C	N/A	SP	2.1	2.66	N/A	N/A



GRAIN SIZE ANALYSIS

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1207615-001C	Date Tested	7/16/2012	Tested by:	PP
						Qc by:	KDK

Date Sample Received:	7/13/12
Sample Location:	
Sample Description:	Brown & Gray poorly graded sand with silt (Sediment)



% + 3"	% Gravel	% Sand	% Fines
0.0	0.0	93.8	6.1

Sieve Size	Percent Passing	D85 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	Cc	Cu
1.5"	100.0	0.17	0.12	0.09	0.075	0.9	1.6
1.0"	100.0	Soil Classification		SP-SM			
3/4"	100.0						
1/2"	100.0	Soil Description		Poorly graded sand with silt			
3/8"	100.0						
1/4"	100.0	System		USCS			
#4	100.0						
#10	100.0						
#40	99.8						
#100	80.7						
#200	9.1						
#230	6.1						

Remarks:

Test ID	49012

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IEPA

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1207615-001C	Date Tested	7/17/2012	Tested By	PP
						Qc By	KDK

Date Sample Received	7/13/2012
Sample Location	
Sample Description	Brown & Gray poorly graded sand with silt (Sediment)
<p>Control Sieve No. : 230 (63-micron sieve)</p> <p>Pan No. : CC-1</p> <p>Pan Weight : 172.28 gm</p> <p>Pan + Dry Sample Weight Before Wash : 222.28 gm</p> <p>Pan + Dry Sample Weight After Wash : 219.15 gm</p> <p>Percent Fines : 6.26 %</p>	

Remarks

	Test ID	49013
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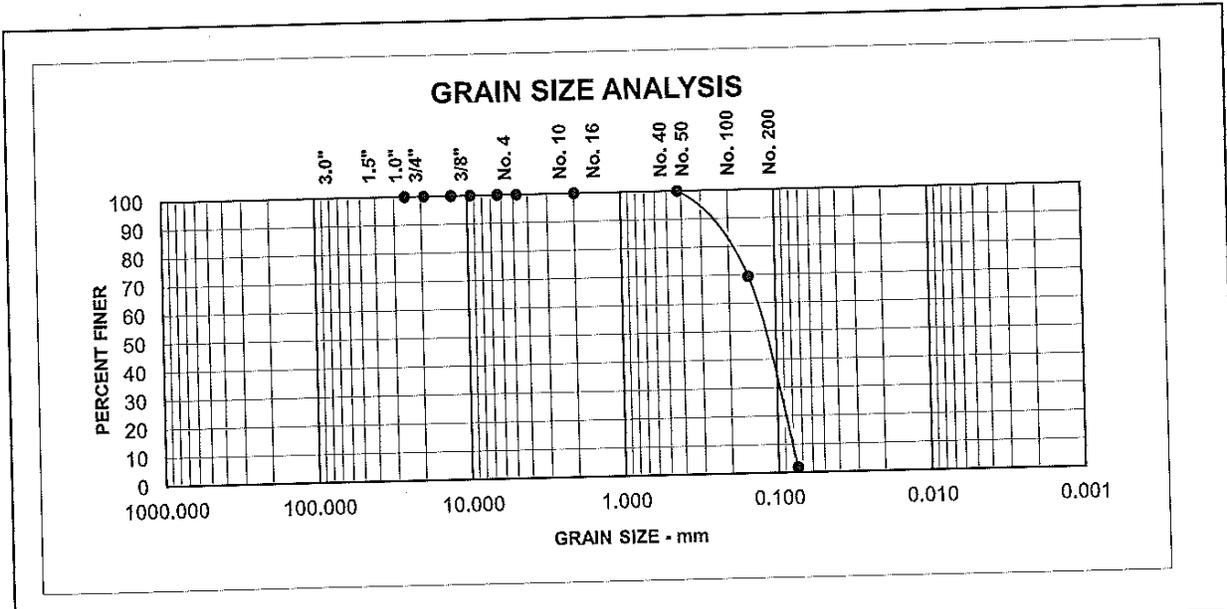
Test ID 49013



GRAIN SIZE ANALYSIS

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1207615-002C	Date Tested	7/16/2012	Tested by:	PP
				Qc by:	KDK		

Date Sample Received:	7/13/12
Sample Location:	
Sample Description:	Brown & Gray poorly graded sand (Sediment)



% + 3"	% Gravel	% Sand	% Fines
0.0	0.0	99.0	1.0

Sieve Size	Percent Passing	D85 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	Cc	Cu
1.5"	100.0	0.21	0.14	0.096	0.08	0.8	1.8
1.0"	100.0						
3/4"	100.0						
1/2"	100.0						
3/8"	100.0	Soil Classification		SP			
1/4"	100.0	Soil Description		Poorly graded sand			
#4	100.0	System		USCS			
#10	100.0						
#40	99.9						
#100	69.4						
#200	1.9						
#230	1.0						

Remarks:

Test ID 49014



IEPA

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1207615-002C	Date Tested	7/17/2012	Tested By	PP
						Qc By	KDK

Date Sample Received	7/13/2012
Sample Location	
Sample Description	Brown & Gray poorly graded sand (Sediment)
Control Sieve No. : 230 (63-micron sieve)	
Pan No. : CC-3	
Pan Weight :	156.28 gm
Pan + Dry Sample Weight Before Wash :	206.28 gm
Pan + Dry Sample Weight After Wash :	205.59 gm
Percent Fines :	1.38 %

Remarks

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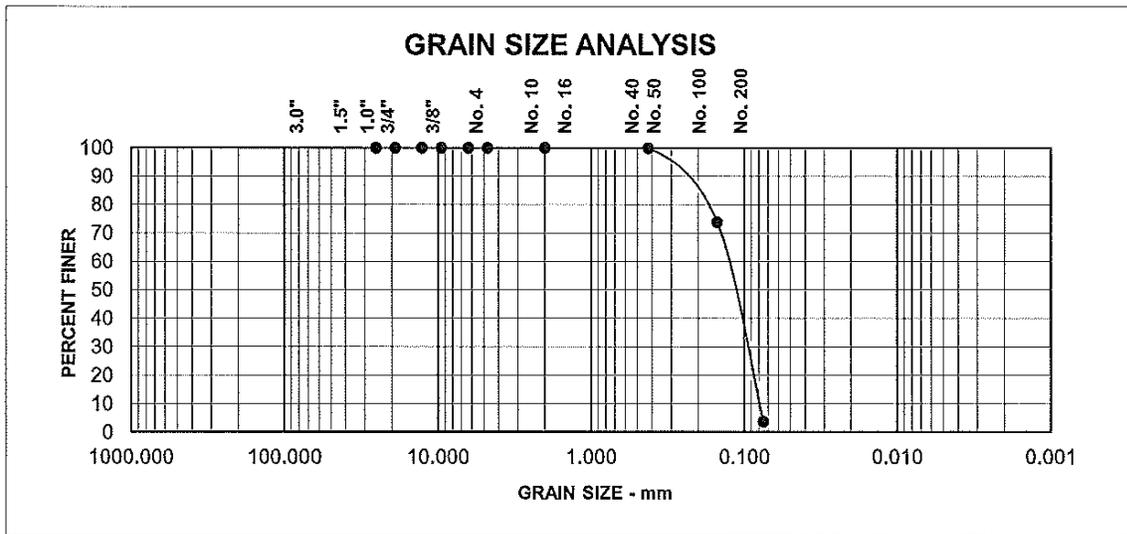
www.interra.co

Test ID	49015
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GRAIN SIZE ANALYSIS

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1207615-003C	Date Tested	7/16/2012	Tested by:	PP
						Qc by:	KDK
Date Sample Received:	7/13/12						
Sample Location:							
Sample Description:	Brown & Gray poorly graded sand (Sediment)						



% + 3"	% Gravel	% Sand	% Fines
0.0	0.1	97.8	2.1

Sieve Size	Percent Passing	D85 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	Cc	Cu
1.5"	100.0	0.19	0.13	0.093	0.08	0.8	1.6
1.0"	100.0	Soil Classification		SP			
3/4"	100.0						
1/2"	100.0						
3/8"	100.0						
1/4"	100.0	Soil Description		Poorly graded sand			
#4	100.0						
#10	99.9	System		USCS			
#40	99.9						
#100	73.8						
#200	3.7						
#230	2.1						

Remarks:

www.interra.co

Test ID	49016
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IEPA

Project	USACE Sediment Samples						
Client	Suburban Laboratories, 4140 Litt Dr., Hillside, IL 60162						
File No.	6054	Sample #	1207615-003C	Date Tested	7/17/2012	Tested By	PP
						Qc By	KDK

Date Sample Received	7/13/2012
Sample Location	
Sample Description	Brown & Gray poorly graded sand (Sediment)
Control Sieve No. : 230 (63-micron sieve)	
Pan No. : CC-2	
Pan Weight : 148.19 gm	
Pan + Dry Sample Weight Before Wash : 198.19 gm	
Pan + Dry Sample Weight After Wash : 196.86 gm	
Percent Fines : 2.66 %	

Remarks	
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www.interra.co

Test ID	49017
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Suburban Laboratories, Inc.

4140 Litt Drive
Hillside, IL 60162-1183
P: (708) 544-3260 F: (708) 544-8587
www.SuburbanLabs.com

Ryba Marine Construction Co.

FY11/FY12
Dredging of Waukegan Harbor Approach Channel
After Operations Sediment Sampling

Suburban Labs Field Sampling Technician(s) - PRINT: <i>PAT BREW</i>				
Weather and water conditions: <i>Sun / cloudy WSEM</i>			Eutech Inst. Oakton Field pH Meter, pHTestr 30 Serial No.: <i>-</i>	
	<i>K</i> After Operations Sediment 1	<i>✓</i> After Operations Sediment 2	<i>L</i> After Operations Sediment 3	Additional Comments:
Sampling Technique:	grab	grab	grab	
GPS coordinate (Lat./Long.) of sample collection: ¹	<i>E 1126352.981 N 2675010.379</i>	<i>E 1126060.771 N 2675032.193</i>	<i>E 1126055.899 N 2674996.651</i>	
GPS coordinate (state plane) of sample collection: ¹	<i>NAD 83</i>	<i>NAD 83</i>	<i>NAD 83</i>	
Date & Time of collection:	<i>7/12/12 11:45 AM 11:45 AM</i>	<i>7/12/12 12:20 PM</i>	<i>7/12/12 12:45 PM</i>	
Sample appearance: (clear, tinted, dark, etc..)	<i>Dark (low) →</i>			
pH & Time of reading:				
Temperature (degrees C):				
Comments:	<i>2 scoops</i>	<i>5 scoops</i>	<i>5 scoops</i>	

See also chain of custody form for bottles and preservatives

SIGNATURES:

Version 0 06/16/2010

SLI Field Tech 1: 

SLI Field Tech 2: _____

After Operations Sediment
07/12/12

