

Project Description

Located centrally in the Village Area of Town between Front Street and Spring Street and adjacent to Ryder Lane, the G. Richard Duffy Athletic Field (Tabor Field) was installed to meet Tabor's need for additional, multifunctional athletic space. CLE was contracted by Tabor to conduct the engineering design, permitting, and construction oversight of the new field. Based on the documentation provided by CLE, improvements either implemented or planned in the field area included upgrades to infrastructure connected to the Town's drainage system.

The field drainage system consists primarily of a series of underdrains, which discharge in several locations to an on-site pond. The outfall for the pond directs flow to a marsh area adjacent to Front Street. From the marsh area, a Town-owned 12-inch culvert diverts the majority of flow under Front Street to a wetland area bordering Sippican Harbor. The northern and eastern sections of the field also contain an 18-inch culvert that connects to drainage systems on Ryder Lane and Front Street. During the recent field construction, this culvert was rerouted and replaced, and a new catch basin was installed at a low point in the western section of the field.

Peer Review

CDM Smith has reviewed the following documents that were provided by CLE in relation to Tabor Field:

- Field Drainage Design
- Permitting
- Flood Plain Mapping
- Construction

A list of the documents reviewed is included in the cover letter accompanying the documents provided by CLE. The documents were reviewed with a focus on the field's impact on the Town's drainage infrastructure and quality of stormwater discharge to Sippican Harbor. The following comments on these documents are grouped by document type.

Field Drainage Design

Design documents were reviewed for conformance with Massachusetts Department of Environmental Protection (MassDEP) stormwater standards, Section 6 of the Marion Sanitary Code, and engineering industry standards.

1. The drainage calculations submitted by CLE did not include a hydraulic analysis of the existing or proposed drainage systems. Given the proximity to Sippican Harbor and the influence of the tides on drainage systems, we believe that this should have been a requirement during design to determine the efficiency of the overall system.
2. From the drainage calculations provided, it generally appears that the peak flow has increased under post-construction conditions. The calculations provided were conservative with respect to not taking credit for storage below the field within the subgrade material. Discharge from the field underdrain system into the pond is discharged to a small marsh area and then to the Town-owned drainage system. Based on CDM Smith's field investigation and review of CLE documents, planned improvements to the Town-owned drainage system were not made, including increasing the existing pipe in Front Street from 12 inches to 24 inches. Based on

the athletic fields, this review is based on field observations made by CDM Smith and evaluation of the provided construction plans.

1. Based on field investigations it has been determined that the planned drainage improvements on Front Street were not completed to the extent planned.
2. The field subbase depicted on the provided construction documents appears to be in conformance with industry standards.
3. It was noted during a field observation that the drainage outfalls in the pond are partially submerged, which may affect the capability of the field's drainage system to fully discharge stormwater runoff. The field may have enough storage to decrease the likelihood of this being a problem, but it is suggested that calculations in relation to storage and capacity of the drainage system and field be performed to ensure that the drainage system functions properly.

Result: The planned drainage improvements on Front Street will be implemented as part of the Town-wide drainage program and no further action is required. It is recommended that the pond elevation be kept low enough to allow for free discharge from the outfall pipes, but it is not anticipated that this action will have either a positive or negative affect on the Town drainage system.

Flood Plain Mapping

Flood plain mapping documents were reviewed to determine susceptibility to impacts from flooding and storm surges and compared to the most recent information available from the Federal Emergency Management Agency (FEMA). On July 17th, 2012, FEMA issued updated Flood Insurance Rate Maps (FIRMs) for Marion and several adjacent towns. Preliminary FIRMs designated Tabor Field as being within Zone VE. This zone is classified by FEMA as "areas subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action". FEMA has since updated the FIRMs and removed Tabor Fields from Zone VE. The effective FIRM for Marion, as viewed in June 2013 shows the field being within Zone AE, classified by FEMA as "areas subject to inundation by the 1-percent-annual-chance flood event".

Result: Based on review of the provided documentation, the change in flood designation appears to be appropriate for the Tabor Field area. The FEMA correspondence provided by CLE was in accordance with proper procedure and suitable for an appeal to FEMA. No further action is recommended.

Summary

The peer review included an evaluation of field drainage design, permitting, flood plain mapping, and construction. Since the Town is anticipating a drainage program in the area which will replace the culvert in Front Street no additional drainage system improvements are needed by Tabor Academy as a result of construction of the athletic field.

Water Quality Testing

Water quality testing was performed at Tabor Field to determine if the new synthetic turf may be contributing excess metals to stormwater runoff. Testing included taking a sample of the synthetic turf to perform the synthetic precipitation leaching procedure (SPLP) and collecting wet weather samples from outfalls within the pond that discharge runoff from the field. The SPLP method was used to identify the potential of metal leachate concentrations from the synthetic turf fibers, infill materials, and fabric base that makes up the top layers of the artificial field. The stormwater samples were taken



Memorandum

To: *Paul F. Dawson*
Town Administrator

From: *Cindy Baumann, P.E.*

Date: *March 13, 2014*

Subject: *Tabor Academy - Synthetic Turf Athletic Field Evaluation*

The Town of Marion (the Town) has undertaken several efforts to improve water quality within the Towns receiving waters. As part of these efforts, and based on an agreement between the Town and Tabor Academy (Tabor), CDM Smith was asked to evaluate the potential water quality impacts of the synthetic turf field installed on the Tabor campus in 2011. This memorandum summarizes the results of that evaluation, including a peer review of engineering, construction, and permitting documents related to the field and results of water quality testing conducted in the summer and fall of 2013.

Executive Summary

The synthetic athletic field at Tabor Academy was designed and permitted by CLE Engineering (CLE). The design included a drainage system consisting primarily of a series of underdrains that discharge to an on-site pond. The pond discharges to a marsh area adjacent to Front Street then through a culvert under Front Street that is connected to the Town drainage system. CDM Smith conducted a peer review of documents associated with the construction of the field and analyzed samples of both the turf field and stormwater runoff from the field to determine if harmful levels of metal concentrations are present.

The peer review included an evaluation of drainage design, permitting, flood plain mapping, and construction. As a result of this review, it is noted that a portion of the proposed drainage system for the field identified in construction documents was not completed. This drainage system consists of a culvert under Front Street that collects flow from the Tabor pond that was proposed to be replaced as part of the field construction. However, due to decisions by the Town at the time of construction and the Town's anticipated improvements to this system under a phased program to replace the drainage system in the area, it was decided that the culvert replacement was not warranted at the time and has been included in future plans by the Town. As a result no additional drainage system improvements are needed by Tabor Academy as a result of construction of the athletic field.

For the evaluation of water quality, a turf sample was collected from a section of the field in June 2013. The piece of turf field was removed from an active section of the field and tested using the synthetic precipitation leaching procedure (SPLP). Water samples were collected from the field underdrain outfalls during four rain events from June to November 2013. Both the athletic field and water samples were tested for arsenic, cadmium, chromium, lead, mercury, and zinc and were compared to criteria from the U.S. Environmental Protection Agency (EPA) for freshwater aquatic life and drinking water. Based on the results of the sampling effort, the athletic field is not a source of metal concentrations.

Table 2: Wet Weather Testing Results

Analyte	Standard (µg/L)	Sample Date	Sample Location Results (µg /l)				
			West Outfall 1	West Outfall 2	North Outfall	East Outfall	Baseline
Arsenic	340 ¹	6/7/2013	<50	<50	<50	<50	
		7/11/2013	<50	<50	<50	<50	<50
		8/9/2013	<50	<50	220	67	<50
		11/27/2013	<50	<50	<50	<50	<50
Cadmium	5 ²	6/7/2013	<4	<4	<4	<4	
		7/11/2013	<4	<4	<4	<4	<4
		8/9/2013	<4	<4	<4	<4	<4
		11/27/2013	<4	<4	<4	<4	<4
Chromium	100 ²	6/7/2013	<5	<5	<5	<5	
		7/11/2013	<5	<5	<5	<5	<5
		8/9/2013	<5	13	60	39	<5
		11/27/2013	<5	<5	<5	<5	<5
Lead	65 ¹	6/7/2013	<40	<40	<40	<40	
		7/11/2013	<40	<40	<40	<40	<40
		8/9/2013	<40	<40	120	79	<40
		11/27/2013	<40	<40	<40	<40	<40
Mercury	1.4 ¹	6/7/2013	<0.5	<0.5	<0.5	<0.5	
		7/11/2013	<0.5	<0.5	<0.5	<0.5	<0.5
		8/9/2013	<0.5	<0.5	<0.5	<0.5	<0.5
		11/27/2013	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc	120 ¹	6/7/2013	<20	<20	<20	<20	
		7/11/2013	<20	38	31	35	<20
		8/9/2013	<20	135	304	385	89
		11/27/2013	<20	<20	<20	21	<20

¹ Chronic Concentrations, Freshwater Aquatic Life Criteria, National Recommended Water Quality Criteria, US EPA

² Drinking Water Standards, US EPA

Note: Highlighted cells exceed the standard for that analyte.

discussions during coordination meetings, it was stated by both the Town and Tabor that these improvements were not required at the time of the field construction.

3. It appears that calculations were not performed for the Town-owned drainage system that was rerouted and partially replaced during field construction. According to construction documents, the drainage system was replaced in kind from a catch basin within the athletic field to an existing drainage system on Front Street.

Result: The comments stated above will be addressed by the planned drainage improvements within Ryder Lane and Front Street by the Town, and no further action is required by Tabor.

Permitting

Permitting documents were reviewed relative to compliance with MassDEP regulations and the Order of Conditions for the athletic field construction. The Order of Conditions issued for the field construction was reviewed for conformance to the extent practicable. Since CDM Smith was not present during the construction of the field it is not possible to verify some of the conditions specified in the Special Conditions section.

1. Based on a review of construction photos and field observations, construction of the field appears to comply with construction stormwater regulations set by the National Pollutant Discharge Elimination System (NPDES) and the Order of Conditions.
2. CDM Smith has conducted a field visit to the field and observed that the majority of activities described in the NOI appear to have been built except for the drainage system improvements previously stated in the Field Drainage Section of this memorandum.
3. The Order of Conditions issued for the project states:

"If erosion or storm damage occurs to the roadway due to overtopping caused by a one hundred (100) year frequency storm or a storm of greater frequency, the Marion Conservation Commission may require further information relative to the delineation of the floodplain, the maximum flow and the ability of the culverts to handle that flow."

The calculations provided by CLE show a capacity of the proposed system to handle stormwater flow from a 100-year storm, yet not all of the improvements were implemented. It is recommended that a hydrologic and hydraulic evaluation of the as-built drainage system be performed to assess the current systems ability to handle a 100-year storm. This evaluation should include calculations related to the storage capability of the field (above ground and subbase), bottlenecking at the 12-inch culvert on Front Street, and the effects on the drainage system when a storm and high tide occur simultaneously.

Result: The 12-inch culvert on Front Street will be replaced as part of the Town-wide drainage improvements program, and the necessary calculations have been performed as part of a Town drainage study. No further action is required by Tabor.

Construction

Construction documents were assessed for conformance to athletic field design standards and conformance with applicable codes. Since as-built drawings were not provided for the construction of

Attachment B

Wet Weather Testing Results

to evaluate if any potential leached metals are being discharged to local waterbodies. All samples were evaluated by RI Analytical during summer and winter 2013.

Synthetic Precipitation Leaching Procedure Testing

SPLP extraction testing simulates the breakdown of materials over time and was used to identify the potential for metal leachates in synthetic turf. A sample of the Tabor Field was taken on June 21, 2013 and transferred to the laboratory for testing. Table 1 below summarizes the results of the SPLP testing and the results are provided in Attachment A.

Table 1: SPLP Testing Results

Analyte	Standard ¹ (µg/L)	Tabor Field Results (µg/L)
Arsenic	340	<50
Cadmium	5 ²	<4
Chromium	100 ²	<5
Lead	65	<40
Mercury	1.4	<0.5
Zinc	120	95

¹ Chronic Concentrations, Freshwater Aquatic Life Criteria, National Recommended Water Quality Criteria, US EPA

² Drinking Water Standards, US EPA

As shown in Table 1, the laboratory results from the SPLP testing were all below industry standards.

Wet Weather Testing

Wet weather samples were taken during four storm events from four outfalls discharging flow to the field's underdrain system. All four outfalls discharge to the pond in the southeast corner of the field as shown in Figure 1. During each rain event, samples for the baseline data were obtained through rainwater collection.

Water quality samples were taken in accordance with a Quality Assurance Project Plan (QAPP) developed for previous stormwater sampling projects performed in Marion. The QAPP was approved by the US Environmental Protection Agency (EPA), Massachusetts Department of Environmental Protection (MassDEP), and the Buzzards Bay National Estuary Program (BBNEP) in summer 2012 and includes sections on sampling procedures, laboratory qualifications, and safety information.

Samples were collected during four rain events on June 7, July 11, August 9, and November 27, 2013. Each sample was tested for arsenic, cadmium, chromium, lead, mercury, and zinc. The results of the laboratory analysis are summarized in Table 2 on the following page and provided in Attachment B.

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	06/14/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	06/14/2013
Chromium	<0.005	0.005	mg/l	EPA 200.7	06/14/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	06/14/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	06/14/2013
Zinc	<0.020	0.020	mg/l	EPA 200.7	06/14/2013

SAMPLE #: 005

SAMPLE DESCRIPTION: TABOR-B

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 06/07/2013 @ 09:20AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	06/14/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	06/14/2013
Chromium	0.012	0.005	mg/l	EPA 200.7	06/14/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	06/14/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	06/14/2013
Zinc	0.105	0.020	mg/l	EPA 200.7	06/14/2013

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As shown in Table 2, the majority of outfall samples do not exceed standard concentrations. Laboratory results from the samples taken on August 9th, 2013 show concentrations of lead and zinc above the recommended criteria. Since elevated lead and zinc levels were detected only during this storm event, the storm characteristics and sampling conditions were reviewed. These higher concentrations are attributed to three conditions that were present during this rain event and not present during the other three rain events:

1. Higher concentrations of zinc were present in the baseline sample during this sampling event, due to naturally high levels of zinc in the rain water (baseline was at 89 µg/L).
2. Samples were collected from the underdrain outfalls under a submerged condition. As a result samples were collected from a mixture of runoff from both the main pond and the underdrain system. This pond had not received recent rainfall and includes runoff from adjacent parking lots that would typically include higher concentrations of zinc and lead.
3. This storm event was slow in developing and had a smaller rainfall amount than the other storm events. Due to the characteristics of an underdrain system, the field was not discharging much flow from this type of rain event. The amount of material underneath the field, the intensity of the storm, and the rainfall amount produced very little discharge from the underdrain system.

Summary

Based on the field conditions of the third sampling event and the results of the other three rounds of samples, it does not appear that the elevated zinc concentrations are typical within the stormwater runoff from the athletic field outfalls. The other three sampling events demonstrate that the discharge from the field underdrain system is not contributing pollutants of concern to the receiving waters.

Coordination

Throughout the project duration, the Town and Tabor Academy worked together to provide historical information, evaluate the results and coordinate findings. Coordination meetings were held on August 20 and December 20, 2013. These meetings included representatives from the Town, Tabor Academy, Marion Board of Health, CLE Engineering and CDM Smith.

In response to a request by members of the Marion Board of Health, CDM Smith provided a project summary prior to their Board meeting on January 14, 2014. Representatives from CDM Smith, Tabor Academy and CLE Engineering were present at the public meeting and provided responses to questions from the Board. At the conclusion of the public meeting it was agreed upon that the synthetic field is not contributing pollutants of concern to Marion's receiving waters.

Conclusion

Due to the wet weather and athletic turf sample results, stormwater runoff from the athletic field is not a source of pollutants/contaminants that would pose a threat to the harbor. Additionally, the comments provided in the peer review have become immaterial based on the planned drainage improvements on Ryder Lane and Front Street. Based on the results of the peer review and stormwater sampling, it was determined that no further action is required related to the athletic turf fields.

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	07/15/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	07/15/2013
Chromium	<0.005	0.005	mg/l	EPA 200.7	07/15/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	07/15/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	07/17/2013
Zinc	0.038	0.020	mg/l	EPA 200.7	07/15/2013

SAMPLE #: 005

SAMPLE DESCRIPTION: TABOR - B

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 07/11/2013 @ 10:30AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	07/15/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	07/15/2013
Chromium	<0.005	0.005	mg/l	EPA 200.7	07/15/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	07/15/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	07/17/2013
Zinc	<0.020	0.020	mg/l	EPA 200.7	07/15/2013

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RI Analytical Laboratories, Inc.
ONLINE REPORTING SYSTEM

Work Order #: 130611925
Description #: FIVE SURFACE WATER SAMPLES
Date Received: 06/07/2013
Date Completed: 06/14/2013

CDM Smith
260 West Exchange Street Suite 300 Providence,
RI 02903

SAMPLE #: 001
SAMPLE DESCRIPTION: TABOR-NE
SAMPLE TYPE: GRAB
SAMPLE DATE/TIME: 06/07/2013 @ 09:00AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	06/14/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	06/14/2013
Chromium	<0.005	0.005	mg/l	EPA 200.7	06/14/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	06/14/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	06/14/2013
Zinc	<0.020	0.020	mg/l	EPA 200.7	06/14/2013

SAMPLE #: 002
SAMPLE DESCRIPTION: TABOR-N
SAMPLE TYPE: GRAB
SAMPLE DATE/TIME: 06/07/2013 @ 09:05AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	06/14/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	06/14/2013
Chromium	<0.005	0.005	mg/l	EPA 200.7	06/14/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	06/14/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	06/14/2013
Zinc	<0.020	0.020	mg/l	EPA 200.7	06/14/2013

SAMPLE #: 003
SAMPLE DESCRIPTION: TABOR-WL
SAMPLE TYPE: GRAB
SAMPLE DATE/TIME: 06/07/2013 @ 09:10AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	06/14/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	06/14/2013
Chromium	<0.005	0.005	mg/l	EPA 200.7	06/14/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	06/14/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	06/14/2013
Zinc	<0.020	0.020	mg/l	EPA 200.7	06/14/2013

SAMPLE #: 004
SAMPLE DESCRIPTION: TABOR-WR
SAMPLE TYPE: GRAB
SAMPLE DATE/TIME: 06/07/2013 @ 09:10AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	08/14/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	08/14/2013
Chromium	0.013	0.005	mg/l	EPA 200.7	08/14/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	08/14/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	08/15/2013
Zinc	0.135	0.020	mg/l	EPA 200.7	08/14/2013

SAMPLE #: 005

SAMPLE DESCRIPTION: TABOR-B

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 08/09/2013 @ 11:50AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	08/14/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	08/14/2013
Chromium	<0.005	0.005	mg/l	EPA 200.7	08/14/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	08/14/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	08/15/2013
Zinc	0.089	0.020	mg/l	EPA 200.7	08/14/2013

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ONLINE REPORTING SYSTEM

Work Order #: 130817081
Description #: FIVE SURFACE WATER SAMPLES
Date Received: 08/09/2013
Date Completed: 08/15/2013

CDM Smith
260 West Exchange Street Suite 300 Providence,
RI 02903

SAMPLE #: 001
SAMPLE DESCRIPTION: TABOR-NE
SAMPLE TYPE: GRAB
SAMPLE DATE/TIME: 08/09/2013 @ 11:46AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	0.067	0.05	mg/l	EPA 200.7	08/14/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	08/14/2013
Chromium	0.039	0.005	mg/l	EPA 200.7	08/14/2013
Lead	0.079	0.040	mg/l	EPA 200.7	08/14/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	08/15/2013
Zinc	0.385	0.020	mg/l	EPA 200.7	08/14/2013

SAMPLE #: 002
SAMPLE DESCRIPTION: TABOR-N
SAMPLE TYPE: GRAB
SAMPLE DATE/TIME: 08/09/2013 @ 11:47AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	0.22	0.05	mg/l	EPA 200.7	08/14/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	08/14/2013
Chromium	0.060	0.005	mg/l	EPA 200.7	08/14/2013
Lead	0.120	0.040	mg/l	EPA 200.7	08/14/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	08/15/2013
Zinc	0.304	0.020	mg/l	EPA 200.7	08/14/2013

SAMPLE #: 003
SAMPLE DESCRIPTION: TABOR-WL
SAMPLE TYPE: GRAB
SAMPLE DATE/TIME: 08/09/2013 @ 11:48AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	08/14/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	08/14/2013
Chromium	<0.005	0.005	mg/l	EPA 200.7	08/14/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	08/14/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	08/15/2013
Zinc	<0.020	0.020	mg/l	EPA 200.7	08/14/2013

SAMPLE #: 004
SAMPLE DESCRIPTION: TABOR-WR
SAMPLE TYPE: GRAB
SAMPLE DATE/TIME: 08/09/2013 @ 11:49AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	12/02/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	12/02/2013
Chromium	<0.005	0.005	mg/l	EPA 200.7	12/02/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	12/02/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	12/03/2013
Zinc	<0.020	0.020	mg/l	EPA 200.7	12/02/2013

SAMPLE #: 005

SAMPLE DESCRIPTION: TABOR - B

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 11/27/2013 @ 05:26AM

Parameter	Sample Results	Detection Limit	Units	Method	Date Analyzed
Arsenic	<0.05	0.05	mg/l	EPA 200.7	12/02/2013
Cadmium	<0.004	0.004	mg/l	EPA 200.7	12/02/2013
Chromium	<0.005	0.005	mg/l	EPA 200.7	12/02/2013
Lead	<0.040	0.040	mg/l	EPA 200.7	12/02/2013
Mercury	<0.0005	0.0005	mg/l	EPA 245.1	12/03/2013
Zinc	<0.020	0.020	mg/l	EPA 200.7	12/02/2013

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Figure 1: Sampling Locations

