



Consulting June 19, 2018 (Revised June 21, 2018)
Engineers and Project 1700396
Scientists
Via E-mail: NPDES.Generalpermits@epa.gov

Ms. Shelly Puleo
Environmental Protection Agency
RGP NOI Processing
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, MA 02109-3912

Dear Ms. Puleo:

**Re: Notice of Intent
NPDES Remediation General Permit
Berth 10
South Boston, Massachusetts**

On behalf of the Massachusetts Port Authority (Massport), GEI Consultants, Inc. has prepared this Notice of Intent (NOI) for coverage under the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP), Massachusetts General Permit (MAG910000). This NOI was prepared in accordance with the general requirements of the NPDES RGP under Federal Register, Vol. 82, No. 12, dated January 19, 2017, and related guidance documentation provided by the U.S. Environmental Protection Agency (EPA). The completed NOI form is provided in Appendix A.

Massport will be constructing a new berth (Berth 10) expansion and rehabilitation of the Conley Terminal in South Boston, Massachusetts. Berth 10 will be constructed at the Former Coastal Oil New England (CONE) property which is a Massachusetts Department of Environmental Protection (MassDEP) disposal site tracked under Release Tracking Number (RTN) 3-0257 (the Coastal Site; Figs. 1 and 2). There is an Activity and Use Limitation (AUL) on the Site.

Site Information and Regulatory Status

The Coastal Site is a nearly square parcel (approximately 1,100 feet by 1,200 feet or 30 acres) of land that is bordered by the Reserved Channel in Boston Harbor to the north, East First Street to the south, Massport Conley Terminal to the east, and Massport-owned property to the west. The Site was a petroleum receiving and distribution terminal between 1937 and 2000. Petroleum impacts related to historic releases of No. 2 and No. 6 fuel oil from former above ground storage tanks were identified and investigated at the Site as early as 1965 by the former owner, Texaco. CONE took over operation of the facility in 1985 and, in the 1990s, began performing investigations to characterize the nature and extent of historical releases including light non-aqueous phase liquid (LNAPL). CONE ceased petroleum receiving and distribution operations in 2000 and all tanks associated with the former CONE facility were removed and all associated piping either removed or cleaned and abandoned in place.

Various remedial actions have been conducted at the Coastal Site. In November 2015, Massport implemented an AUL and in December 2015 GEI submitted a Partial Permanent Solution for the Site.

Planned Construction

The Berth 10 project work area (Project Area; Fig. 2) is located at the northern extent of the Coastal Site and borders the Reserved Channel. Construction for Berth 10 has been divided into two phases of work. Phase I construction for the new Berth 10 will include installation of a steel sheetpile bulkhead, removal of material on the waterside (north) of the bulkhead, in-situ solidification (ISS) of soil on the landside (south) of the bulkhead, and ground improvement using ISS methods in Fill Area B (Fig. 3). The material to be excavated from the waterside of the proposed bulkhead is separated into two areas: Cut Area A and Cut Area C (Fig. 3). Soil and sediment excavated and dredged from the waterside will be reused on the Coastal Site, transported to a licensed upland facility, disposed at the Boston Harbor Confined Aquatic Disposal (CAD) Cell (BHCC), or disposed offshore at the Massachusetts Bay Disposal Site (MBDS).

Influent Source and Off-Site Discharge

Construction groundwater dewatering, accumulated stormwater removed from excavations, runoff from the soil management area, and oily water generated from dredging will be collected, treated, and discharged to one of two potential discharge locations in the Reserved Channel in South Boston. The proposed discharge locations are shown on Fig. 2. We anticipate having one treatment system during construction.

Owner and Operator Information

Owner

Massport
100 Harborside Drive
East Boston, MA
Contact: Chet Myers
Project Manager
617-568-3661
cmyers@massport.com

Operator

DW White
867 Middle Road
Acushnet, MA 02743
Contact: Mark White
Project Manager
508-728-1371
mwhite@dwwhite.com

As the owner, Massport has operational control over the construction plans and specifications, including the ability to make modifications to those plans and specifications. DW White, as the operator, will direct the personnel responsible for the implementation and day-to-day operations and activities that are necessary to ensure compliance with the NPDES RGP, including operation, inspection, monitoring, and reporting. The owner and operator are applying for coverage under the RGP as co-permittees.

Receiving Water Quality and Dilution Factor

On August 30, 2017, GEI collected a receiving water sample from the Reserved Channel adjacent to the pier, toward the center of the Channel (Fig. 4). The receiving water will also be a component of the source; therefore, the receiving water was submitted for analysis of the parameters required under the NPDES RGP for a source and salinity. The sample was submitted to AMRO Environmental Laboratories, Inc. (AMRO) of Merrimack, New Hampshire. The results are summarized in Table 1 and the associated laboratory data report is in Appendix B.

Receiving water temperature was obtained in the field and is noted on the effluent limitations input calculation page in Appendix A.

Since the receiving water is a saltwater body, and based on confirmation from MassDEP (Appendix A), the dilution factor for the Reserved Channel is 1. Since the receiving water is a saltwater body, hardness does not need to be analyzed on either the effluent water or receiving water. The effluent limits were generated using the NPDES RGP NOI Dilution Factor Calculation spreadsheet. As requested by EPA, a copy of the spreadsheet will be submitted via email to EPA for their review with this NOI. In addition, copies of the “EnterData” and “Saltwater Results” tabs from the spreadsheet are provided in Appendix A. The resulting calculated effluent limits are in Table 2.

Source Water Information

Source water will be a combination of groundwater, surface water, and stormwater. To evaluate the proposed influent quality, we collected a receiving water sample (as discussed above) and four groundwater samples from the Site. The groundwater samples were collected from monitoring wells WE-2 on August 30, 2017 and WE-10, GEI-212, and GEI-302 on October 4, 2017 (Fig. 2) and submitted to AMRO for analysis of the parameters required under the NPDES RGP. In addition, the pH and temperature of the proposed influent was measured in the field to evaluate existing conditions. The results are in Table 2 and the associated laboratory data report for this sample are provided in Appendix C.

The analytical results indicated the presence of total petroleum hydrocarbons (TPH), ammonia, chloride, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, fluoranthene, fluorene, naphthalene, phenanthrene and pyrene (polycyclic aromatic hydrocarbon (PAH) compounds), arsenic, iron, and zinc. The measured pH of the groundwater within the project site ranges from approximately 6.83 to 7.75 standard units (s.u.). The pH range detected is within the RGP effluent limit for Massachusetts waters (6.5 to 8.3 s.u.).

Although not indicated by the source water sampling results, it is expected that construction activities will generate source water that is contaminated with separate phase product associated with dredging activities.

Method detection limits in some samples for nickel, silver, and total cyanide are above the minimum levels approved by the RGP. Consequently, we have indicated that these compounds are believed to be present on the NOI form in Appendix A so that the most stringent limitation for effluent monitoring will apply to the RGP Authorization.

Discharge Information

Dewatering activities are expected to start in July 2018 and continue through February 2019. We anticipate treated effluent discharge rates to be about 50 gallons per minute (gpm) or less, with occasional peak flows of approximately 100 gpm during significant precipitation events. The water will be discharged from one treatment system directly into the Reserved Channel of the Boston Harbor at one of two potential discharge locations as shown in Fig. 2.

Treatment System Information

During construction, the collected water will be treated to remove suspended solids using a sedimentation tank and bag filters. The proposed conceptual treatment system is shown in the process flow diagram in Fig. 5. Additional treatment may include oil/water separator, granulated

activated carbon (GAC), iron removal (e.g. flocculation/coagulation and clarifying), and pH adjustment, if necessary.

Although final products for additional treatment will be determined by the operator or their designated contractor, example product information, including Safety Data Sheets (SDSs), associated hazards, and operation recommendations, and product information for GAC and iron removal system adjustment are in Appendix A. These systems will be mobilized as necessary to achieve effluent limitations. If required, pH adjustment will consist of using a metered sulfuric acid (70-100%) system. Similarly, oxidizers such as ferric sulfate may be used to treat for iron. Additives will be stored in 55-gallon drums with secondary containment systems. Procedures for proper handling and spill prevention are included in the site-specific Best Management Practices Plan (BMPP). The addition of ferric sulfate for iron treatment and sulfuric acid to reduce pH levels are established practices for temporary construction dewatering, and are not expected to exceed applicable effluent limits, water quality standards, or alter conditions in the receiving water. In addition, use of these additives will not add any pollutants that would justify application of additional permit conditions. Therefore, it is our opinion, that no additional testing is necessary for use of ferric sulfate or sulfuric acid or to demonstrate that use of these products will adversely affect the receiving water.

Endangered Species Act Eligibility

We reviewed the U.S. Fish and Wildlife Service (FWS) Information, Planning, and Conservation (IPAC) online database for the site and receiving water ("project action area"). A copy of the database report is in Appendix D. Based on this report, there are no listed species or critical habitats within the project action area.

Because the proposed effluent discharge is to nearshore marine waters in Massachusetts (i.e., Massachusetts Bay, inclusive of Boston Harbor), and there has been no previous consultation with National Marine Fisheries Services (NMFS) for this project, we reviewed EPA's determination made during their consultation with the NMFS, dated December 18, 2016. According to the determination, the endangered or protected species under jurisdiction of the NMFS that could potentially encounter RGP discharge in the project area are the shortnose sturgeon, Atlantic sturgeon, four species of sea turtles, and two species of whales. According to the determination, the turtles and whales are highly unlikely to be present in the project action area (Reserved Channel) where the proposed discharge effluent will occur, and sturgeon are expected to be present transiently. Because discharge is not to the Connecticut, Merrimack, or Taunton Rivers, where the sturgeon spawn, both species of sturgeon are expected to be present only in adult life stages in the project action area.

Based on our review, the project action area meets FWS Criterion A (i.e. no listed species or critical habitats are within the project action area) and NMFS Criterion (i.e. the project will have either no effect on or are not likely to adversely affect listed species or habitats under jurisdiction of the NMFS).

National Historic Preservation Requirements

We reviewed online records from the U.S. National Register of Historic Places database and the Massachusetts Cultural Resource Information System (MACRIS). Maps of the Site and surrounding areas obtained from both databases are included in Appendix E. Based on the review, the Site is not a listed as a National Historic Place.

Coverage Under NPDES RGP

It is our opinion that the proposed discharge is eligible for coverage under the NPDES RGP based on the requirements of the NPDES RGP and our evaluation of the available site-specific information. On behalf of Massport, we are requesting coverage under the NPDES RGP for the discharge of treated construction dewatering effluent to the surface waters of the Reserved Channel of the Boston Inner Harbor.

The enclosed NOI form and supporting documentation provides required information on the general site conditions, discharge, treatment system, receiving water, and consultation with federal services (Appendices A through E).

Please contact me at 781.721.4012 or igladstone@geiconsultants.com or Russell Titmuss at 774.277.6003 or rtitmuss@geiconsultants.com if you have any questions.

Very truly yours,

GEI CONSULTANTS, INC.



Heen S. Gladstone, P.E., LSP, LEED AP
Senior Vice President



Russell Titmuss
Senior Project Manager

CMM:jam

Attachments:

- Table 1 – Chemical Testing Results-Surface Water
- Table 2 – Chemical Testing Results-Groundwater
- Figure 1 – Property Location Map
- Figure 2 – Site, Discharge Location and Groundwater Monitoring Well Location Plan
- Figure 3 – Project Area Plan
- Figure 4 – Receiving Water Sample Location
- Figure 5 – Proposed Treatment System Schematic
- Appendix A – Notice of Intent (NOI) for Remediation General Permit (RGP)
- Appendix B – Laboratory Data Reports-Receiving Water
- Appendix C – Laboratory Data Reports-Groundwater
- Appendix D – Endangered Species Act Documentation
- Appendix E – National Register of Historic Places and Massachusetts Historical Commission Doc

c: Chester Myers, Massport
Mark White, DW White
Surface Water Discharge Program, MassDEP

Tables

Table 1. Chemical Testing Results - Surface Water
Berth 10
South Boston, Massachusetts

Sample Location:				SW-1	
Sample Date:				8/30/2017	
Analyte					
	Method	Units	MCP RCGW-2	Site Specific Effluent Limits	
Inorganic Compounds					
Ammonia as N	4500-NH3, C	mg/L	10000	Report	< 1.0
Chloride	9056	mg/L	NS	Report	20,200
Total Residual Chlorine	4500-CL G	ug/l	NS	8	< 0.10
Total Suspended Solids	2540D	mg/l	NS	NS	4.0
Antimony	200.9	µg/L	8000	640	< 5.0
Arsenic	200.9	µg/L	900	36	< 2.0
Cadmium	200.7	µg/L	4	8.9	< 12
Chromium	200.7	µg/L	300	100	< 30
Hexavalent Chromium	7196A	mg/L	NS	50	< 0.010
Hexavalent Chromium (Dissolved)	7196A	mg/L	NS	50	< 0.010
Copper	200.7	µg/L	10,000	4	< 75
Iron	200.7	µg/L	NS	NA	< 300
Lead	200.9	µg/L	10	8.5	< 5.0
Mercury	245.1	µg/L	20	1.110	< 0.20
Nickel	200.7	µg/L	200	8.3	< 120
Selenium	200.9	µg/L	100	71	< 5.0
Silver	200.7	µg/L	7	2.2	< 21
Zinc	200.7	µg/L	900	86	< 60
Total Cyanide	4500-CN C,E	mg/L	NS	1	< 0.010
Non-Halogenated Volatile Organic Compounds (VOCs)					
Total BTEX	8260C	µg/L			
Total Non-Halogenated VOCs ¹			NS	NS	ND
Halogenated Volatile Organic Compounds (VOCs)					
Total Halogenated VOCs ²	8260C	µg/L			
			NS	NS	ND
Non-Halogenated Semivolatile Organic Compounds (SVOCs)					
Total Phthalates	8270D-PAHSIM	µg/L			
Total Group I PAHs ³			NS	NS	< 10
Total Group II PAHs ⁴			NS	NS	ND
Halogenated Semivolatile Organic Compounds (SVOCs)					
PCBs, Total	8082	µg/L	5	NS	ND
Fuel Parameters					
Total Petroleum Hydrocarbons	1664	mg/L	5,000	NS	< 5.0
Ethanol	8260C	µg/L	NS	NS	NT
Methyl-tert-butyl ether	8260C	µg/L	5,000	20	< 2.0
tert-butyl alcohol	8260C	µg/L	10,000	NS	< 20
tert-amyl-methyl ether	8260C	µg/L	NS	NS	< 2.0
Other					
Salinity	2520B	ppt	NS	NS	28
Temperature	Field	Deg C	NS	NS	20.66
pH	Field	S.U.	6.61	6.5 to 8.3	7.75
Isopropylbenzene	8260 C	ug/L	100	NS	< 2.0
n-Propylbenzene	8260 C	ug/L	10	NS	< 2.0

General Notes:

- For a complete list of analytes, see the laboratory data sheets.
- "<" = Analyte not detected at a concentration above the laboratory reporting limit.
- MCP = 310 CMR 40.0000 Massachusetts Contingency Plan with revisions effective April 25, 2014
- RCGW-2 = Reportable Concentration for category GW-2 Groundwater
- µg/l = micrograms per liter.
- mg/l = milligram per liter
- deg C = Degrees Celsius
- S.U. = standard units
- Dilution Factor of 1 used to establish effluent limits.
- Effluent limits calculated using NPDES RGP NOI Dilution Factor Spreadsheet.
- Temperature and pH were measured in the field.
- Sample locations are shown on drawings B-103 and C-106.

Footnotes:

- Total Non-Halogenated VOCs include benzene, ethylbenzene, toluene, and xylenes (BTEX), acetone, 1,4-dioxane, and
- Total Halogenated VOCs include carbon tetrachloride, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, 1,2-dichloroethene, ethylene dibromide, methylene chloride, 1,1,1-trichloroethane,
- Group I PAHs include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene,
- Group II PAHs include: acenaphthene, acenaphthylene, anthracene, bezon(g,h,i)perylene, fluoranthene, fluorene,

Qualifying Notes:

- The result is estimated due to holding time exceedance.
- The result is estimated due to duplicate precision outside control limits.

Table 2. Chemical Testing Results - Groundwater
Berth 10
South Boston, Massachusetts

Analyte	Sample Location: Well Screen Interval (ft bgs): Sample Date:				WE-02 4-19 8/30/2017	WE-10 5-20 10/4/2017	GEI-212(MW) 5-20 10/4/2017	GEI-302(MW) 5-20 10/4/2017
	Method	Units	MCP RCGW-2	Site Specific Effluent Limits				
Inorganic Compounds								
Ammonia as N	4500-NH3, C	mg/L	10000	Report	< 1.0	2.4	< 1.0	< 1.0
Chloride	9056	mg/L	NS	Report	15,300	242 G	5,950 G	10,500 G
Total Residual Chlorine	4500-CL G	ug/l	NS	8	< 0.10 A	<0.10 A	<0.10 A	<0.10 A
Total Suspended Solids	2540D	mg/l	NS	NS	68	45	12	17
Antimony	200.9	µg/L	8000	640	< 5.0	< 5.0 G	< 5.0 G	< 5.0 G
Arsenic	200.9	µg/L	900	36	5.4	< 2.0	< 2.0	< 2.0
Cadmium	200.7	µg/L	4	8.9	< 8.0	< 4.0	< 4.0	< 4.0
Chromium	200.7	µg/L	300	100	< 20	< 10	< 10	< 10
Hexavalent Chromium	7196A	mg/L	NS	50	< 0.010	< 0.010	< 0.010	< 0.010
Hexavalent Chromium (Dissolved)	7196A	mg/L	NS	50	< 0.010	< 0.010	< 0.010	< 0.010
Copper	200.7	µg/L	10,000	4	< 50	< 25	< 25	< 25
Iron	200.7	µg/L	NS	NA	27,000	21,000	170	100
Lead	200.9	µg/L	10	8.5	< 5.0	< 2.0	< 2.0	< 2.0
Mercury	245.1	µg/L	20	1.110	< 0.20	< 0.20	< 0.20	< 0.20
Nickel	200.7	µg/L	200	8.3	< 80	< 40	< 40	< 40
Selenium	200.9	µg/L	100	71	< 5.0	< 5.0	< 5.0	< 5.0
Silver	200.7	µg/L	7	2.2	< 14	< 7.0	< 7.0	< 7.0
Zinc	200.7	µg/L	900	86	470	< 20	< 20	< 20
Total Cyanide	4500-CN C,E	mg/L	NS	1	< 0.010	< 0.010	< 0.010	< 0.010
Non-Halogenated Volatile Organic Compounds (VOCs)								
Total BTEX	8260C	µg/L	NS	NS	ND	ND	ND	ND
Total Non-Halogenated VOCs ¹			NS	NS	ND	ND	ND	ND
Halogenated Volatile Organic Compounds (VOCs)								
Total Halogenated VOCs ²	8260C	µg/L	NS	NS	ND	ND	ND	ND
Non-Halogenated Semivolatile Organic Compounds (SVOCs)								
Total Phthalates	8270D-PAHSIM	µg/L	NS	NS	ND	ND	ND	ND
Total Group I PAHs ³			NS	NS	ND	ND	0.085	0.074
Benzo(a)anthracene			1,000	0.004	< 0.062	< 0.062	0.085	0.074
Anthracene			30	NS	< 0.10	0.13	0.4	< 0.11
Acenaphthene			6,000	NS	< 0.10	1.5	4.6	0.33
Acenaphthylene			40	NS	< 0.10	< 0.10	0.62	< 0.11
Fluoranthene			200	NS	< 0.10	< 0.10	0.46	< 0.11
Fluorene			40	NS	< 0.10	0.24	< 0.10	< 0.11
Phenanthrene			10,000	NS	< 0.072	< 0.073	0.69	< 0.074
Pyrene			20	NS	< 0.10	< 0.10	0.39	< 0.11
Total Group II PAHs ⁴			NS	NS	ND	3.74	14.32	0.66
Naphthalene			700	NS	< 0.10	0.12	0.12	< 0.11
Halogenated Semivolatile Organic Compounds (SVOCs)								
PCBs, Total	8082	µg/L	5	NS	ND	ND	ND	ND
Fuel Parameters								
Total Petroleum Hydrocarbons	1664	mg/L	5,000	NS	< 5.0	< 5.0	14	< 5.0
Ethanol			NS	NS	NT	NT	NT	NT
Methyl-tert-butyl ether	8260C		5,000	20	< 2.0	< 2.0	< 2.0	< 2.0
tert-butyl alcohol	8260C		10,000	NS	< 20	< 20	< 20	< 20
tert-amyl-methyl ether	8260C		NS	NS	< 2.0	< 2.0	< 2.0	< 2.0
Other								
Temperature	Field	Deg C	10.43	NS	NM	17.32	20.36	18.88
pH	Field	S.U.	6.61	6.5 to 8.3	NM	6.83	6.90	7.23
Isopropylbenzene	8260 C	ug/L	100	NS	< 2.0	4.0	< 2.0	< 2.0
n-Propylbenzene	8260 C	ug/L	10	NS	< 2.0	5.8	< 2.0	< 2.0

General Notes:

- For a complete list of analytes, see the laboratory data sheets.
- "<" = Analyte not detected at a concentration above the laboratory reporting limit.
- MCP = 310 CMR 40.0000 Massachusetts Contingency Plan with revisions effective April 25, 2014
- RCGW-2 = Reportable Concentration for category GW-2 Groundwater
- µg/l = micrograms per liter.
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- deg C = Degrees Celsius
- S.U. = standard units
- Dilution Factor of 1 used to establish effluent limits.
- Effluent limits calculated using NPDES RGP NOI Dilution Factor Spreadsheet.
- Temperature and pH were measured in the field.
- Sample locations are shown on drawings B-103 and C-106.

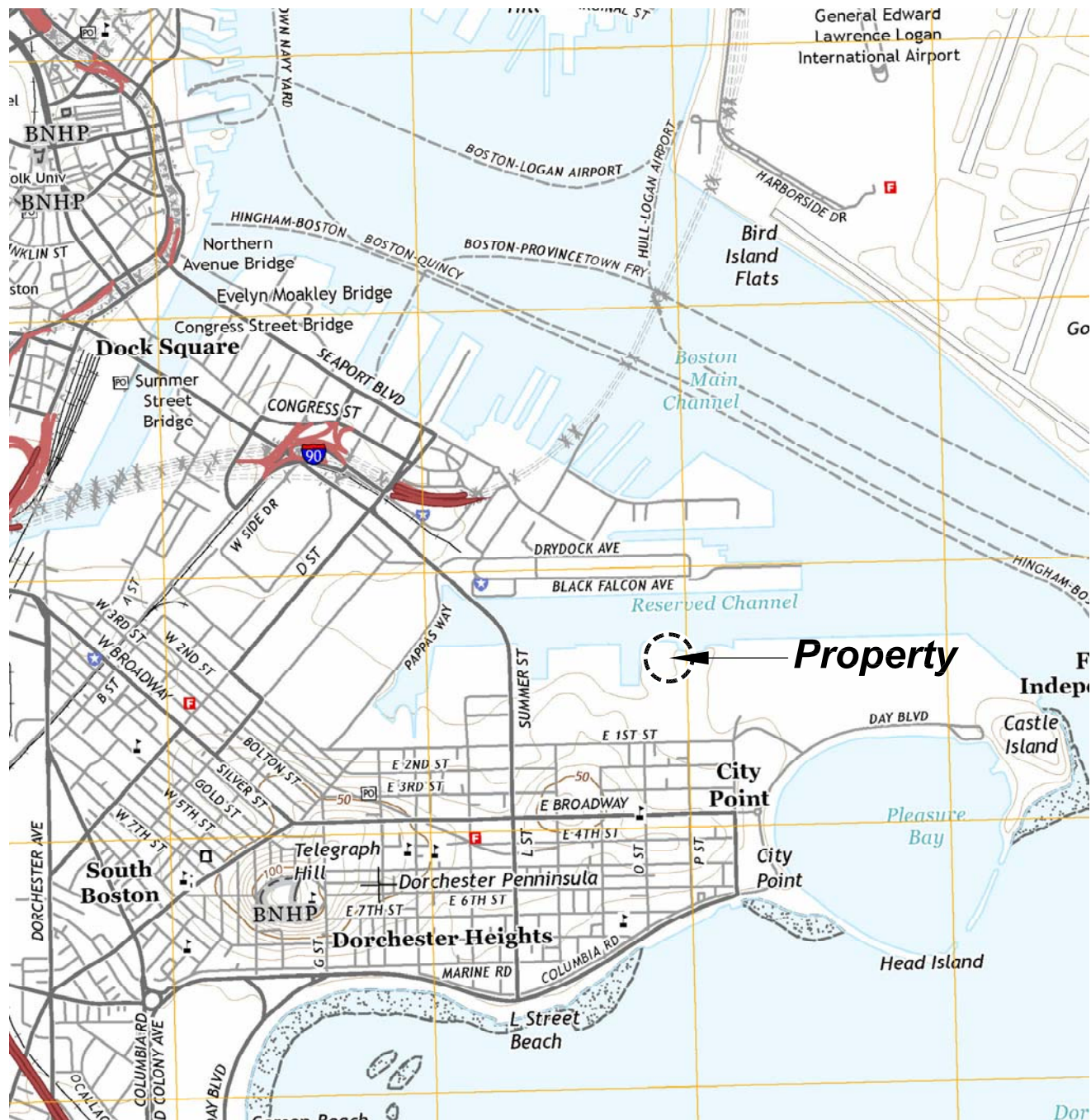
Footnotes:

- Total Non-Halogenated VOCs include benzene, ethylbenzene, toluene, and xylenes (BTEX), acetone, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, 1,2-dichloroethene, ethylene dibromide, methylene
- Total Halogenated VOCs include carbon tetrachloride, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, 1,2-dichloroethene, ethylene dibromide, methylene
- Group I PAHs include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and ideno(1,2,3-cd)pyrene.
- Group II PAHs include: acenaphthene, acenaphthylene, anthracene, bezon(g,h,i)perylene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene.

Qualifying Notes:

- The result is estimated due to holding time exceedance.
- The result is estimated due to duplicate precision outside control limits.

Figures



0 1000 2000 4000 6000

SCALE, FEET

This Image is from U.S.G.S. Topographic 7.5 Minute Series
 Boston South, MA Quadrangle, 2015.
 Datum is North American Vertical Datum of 1988 (NAVD88).
 Contour Interval is 10 Feet.



QUADRANGLE LOCATION

NPDES RGP Notice of Intent
 New Berth 10 - Conley Terminal
 South Boston, Massachusetts
 Massachusetts Port Authority
 Boston, Massachusetts



Project 1700396

PROPERTY
 LOCATION MAP

June 2018

Fig. 1



NPDES RGP Notice of Intent
New Berth 10 - Conley Terminal
South Boston, Massachusetts

Massachusetts Port Authority
Boston, Massachusetts

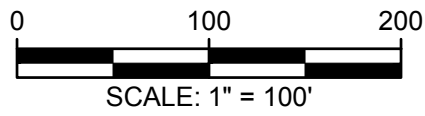
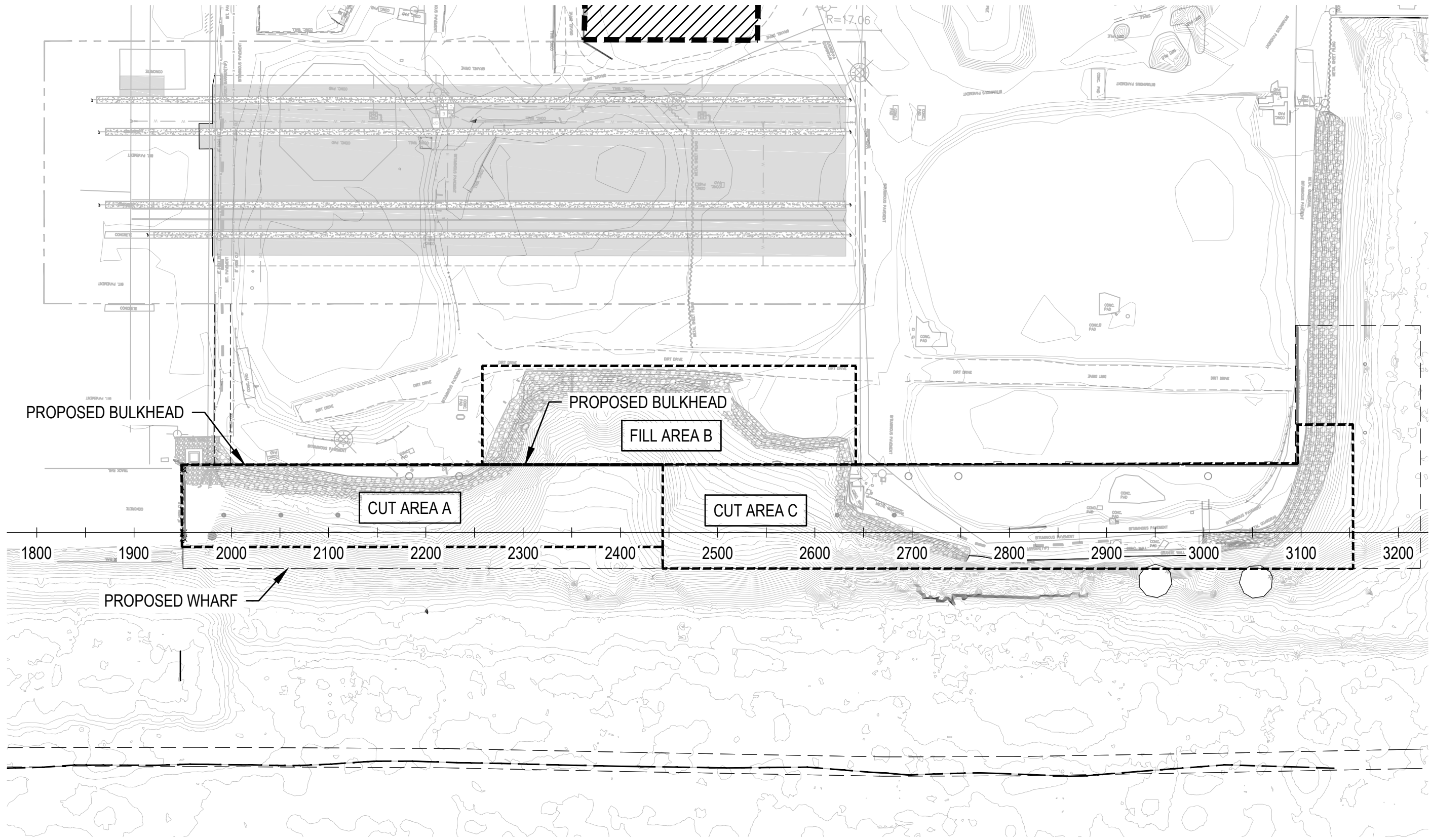


Project 1700396

SITE PLAN

June 2018

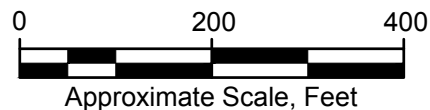
Fig. 2



<p>NPDES RGP Notice of Intent New Berth 10 - Conley Terminal South Boston, Massachusetts</p>	<p>GEI Consultants</p>	<p>PROJECT AREA PLAN</p>
<p>Massachusetts Port Authority Boston, Massachusetts</p>	<p>Project 1700396</p>	<p>June 2018 Fig. 3</p>



GOOGLE EARTH IMAGE DATED 6/9/2017.



NPDES RGP Notice of Intent
New Berth 10 - Conley Terminal
South Boston, Massachusetts

Massachusetts Port Authority
Boston, Massachusetts

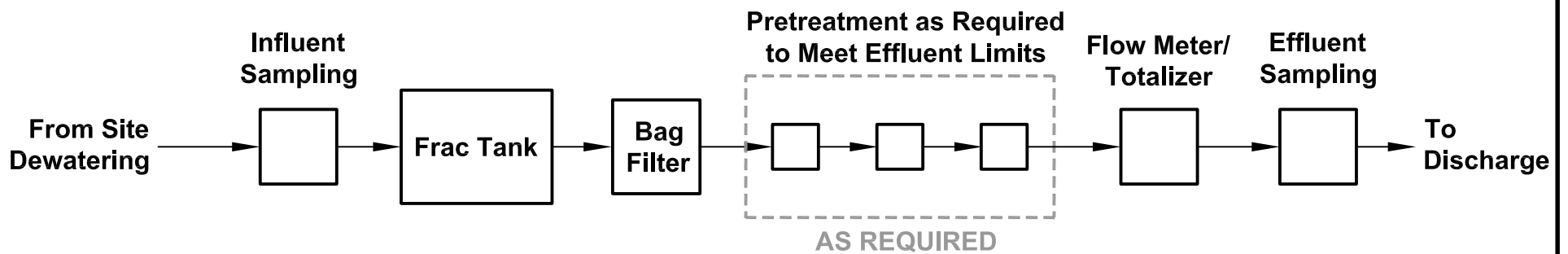


Project 1700396

RECEIVING WATER
SAMPLE LOCATION

June 2018

Fig. 4



PROCESS FLOW DIAGRAM

Not to Scale

NPDES RGP Notice of Intent
New Berth 10 - Conley Terminal
South Boston, Massachusetts

Massachusetts Port Authority
Boston, Massachusetts



Project 1700396

PROCESS FLOW DIAGRAM

June 2018

Fig. 5

Appendix A

Remediation General Permit

Notice of Intent

II. Suggested Format for the Remediation General Permit Notice of Intent (NOI)

A. General site information:

1. Name of site: Berth 10	Site address: 900 East 1st Street Street:		
2. Site owner Massachusetts Port Authority Owner is (check one): <input type="checkbox"/> Federal <input type="checkbox"/> State/Tribal <input type="checkbox"/> Private <input checked="" type="checkbox"/> Other; if so, specify: State Authority	City: Boston	State: MA	Zip: 02127
3. Site operator, if different than owner DW White Construction Inc.	Contact Person: Chester Myers Telephone: 617-426-6654 Email: chmyers@massport.com Mailing address: One Harborside Drive Suite 2005 Street: City: East Boston State: MA Zip: 02128		
4. NPDES permit number assigned by EPA: NPDES permit is (check all that apply): <input type="checkbox"/> RGP <input type="checkbox"/> DGP <input type="checkbox"/> CGP <input type="checkbox"/> MSGP <input type="checkbox"/> Individual NPDES permit <input type="checkbox"/> Other; if so, specify:	5. Other regulatory program(s) that apply to the site (check all that apply): <input checked="" type="checkbox"/> MA Chapter 21e; list RTN(s): 3-257 <input type="checkbox"/> NH Groundwater Management Permit or Groundwater Release Detection Permit: <input type="checkbox"/> CERCLA <input type="checkbox"/> UIC Program <input type="checkbox"/> POTW Pretreatment <input type="checkbox"/> CWA Section 404		

B. Receiving water information:

1. Name of receiving water(s): Reserved Channel	Waterbody identification of receiving water(s): MA70-02	Classification of receiving water(s): SB(CSO)
Receiving water is (check any that apply): <input type="checkbox"/> Outstanding Resource Water <input type="checkbox"/> Ocean Sanctuary <input type="checkbox"/> territorial sea <input type="checkbox"/> Wild and Scenic River		
2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Are sensitive receptors present near the site? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, specify:		
3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. Impaired water body -Enterococcus, fecal coliform, oxygen, PCB in fish tissue, other (contaminants in fish and shellfish). No final TMDL		
4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.		NA (saltwater)
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.		1 (saltwater)
6. Has the operator received confirmation from the appropriate State for the 7Q10 and dilution factor indicated? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, indicate date confirmation received: email from MassDEP dated April 3, 2018.		
7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

C. Source water information:

1. Source water(s) is (check any that apply):			
<input checked="" type="checkbox"/> Contaminated groundwater Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Contaminated surface water Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> The receiving water	<input type="checkbox"/> Potable water; if so, indicate municipality or origin: <input type="checkbox"/> Other; if so, specify:
		<input type="checkbox"/> A surface water other than the receiving water; if so, indicate waterbody:	

2. Source water contaminants: Summarized on Tables 1 and 2.	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): <input type="checkbox"/> Existing discharge <input checked="" type="checkbox"/> New discharge <input type="checkbox"/> New source	
Outfall(s): Direct discharge from one treatment system to Reserved Channel, 2 potential locations	Outfall location(s): (Latitude, Longitude) 1. Y 42.341109N X 71.029575W 2. Y42.341807N X 71.028587W
<p>Discharges enter the receiving water(s) via (check any that apply): <input checked="" type="checkbox"/> Direct discharge to the receiving water <input type="checkbox"/> Indirect discharge, if so, specify:</p> <p><input type="checkbox"/> A private storm sewer system <input type="checkbox"/> A municipal storm sewer system</p> <p>If the discharge enters the receiving water via a private or municipal storm sewer system:</p> <p>Has notification been provided to the owner of this system? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Has the operator has received permission from the owner to use such system for discharges? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No, if so, explain, with an estimated timeframe for obtaining permission:</p> <p>Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	
Provide the expected start and end dates of discharge(s) (month/year): July 2018 to February 2019	
Indicate if the discharge is expected to occur over a duration of: <input checked="" type="checkbox"/> less than 12 months <input checked="" type="checkbox"/> 12 months or more <input type="checkbox"/> is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

2. Activity Category: (check all that apply)	3. Contamination Type Category: (check all that apply)	
<input type="checkbox"/> I – Petroleum-Related Site Remediation <input type="checkbox"/> II – Non-Petroleum-Related Site Remediation <input checked="" type="checkbox"/> III – Contaminated Site Dewatering <input type="checkbox"/> IV – Dewatering of Pipelines and Tanks <input type="checkbox"/> V – Aquifer Pump Testing <input type="checkbox"/> VI – Well Development/Rehabilitation <input type="checkbox"/> VII – Collection Structure Dewatering/Remediation <input checked="" type="checkbox"/> VIII – Dredge-Related Dewatering	<p>a. If Activity Category I or II: (check all that apply)</p> <p><input type="checkbox"/> A. Inorganics</p> <p><input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds</p> <p><input type="checkbox"/> C. Halogenated Volatile Organic Compounds</p> <p><input type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds</p> <p><input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds</p> <p><input type="checkbox"/> F. Fuels Parameters</p>	
	<p>b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</p>	
	<table border="1"> <tr> <td data-bbox="970 799 1419 873"><input checked="" type="checkbox"/> G. Sites with Known Contamination</td><td data-bbox="1419 799 2003 873"><input type="checkbox"/> H. Sites with Unknown Contamination</td></tr> </table>	<input checked="" type="checkbox"/> G. Sites with Known Contamination
<input checked="" type="checkbox"/> G. Sites with Known Contamination	<input type="checkbox"/> H. Sites with Unknown Contamination	
<table border="1"> <tr> <td data-bbox="970 873 1419 1409"> <p>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)</p> <p><input checked="" type="checkbox"/> A. Inorganics</p> <p><input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds</p> <p><input type="checkbox"/> C. Halogenated Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds</p> <p><input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> F. Fuels Parameters</p> </td><td data-bbox="1419 873 2003 1409"> <p>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</p> </td></tr> </table>	<p>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)</p> <p><input checked="" type="checkbox"/> A. Inorganics</p> <p><input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds</p> <p><input type="checkbox"/> C. Halogenated Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds</p> <p><input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> F. Fuels Parameters</p>	<p>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</p>
<p>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)</p> <p><input checked="" type="checkbox"/> A. Inorganics</p> <p><input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds</p> <p><input type="checkbox"/> C. Halogenated Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds</p> <p><input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> F. Fuels Parameters</p>	<p>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</p>	

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✓	5	4500-NH3,	1000	2.4	0.88	Report mg/L	---
Chloride		✓	5	9056	1000	15,300,000	10438400	Report µg/l	---
Total Residual Chlorine	✓		5	4500-CL,	10	< 10	0	0.2 mg/L	7.5
Total Suspended Solids		✓	5	2540D	4	68	29.2	30 mg/L	---
Antimony	✓		5	200.9	5	< 5	0	206 µg/L	
Arsenic		✓	5	200.9	2	5.4	1.88	104 µg/L	
Cadmium	✓		5	200.7	4	< 4	0	10.2 µg/L	
Chromium III	✓		5	200.7	10	< 10	0	323 µg/L	
Chromium VI	✓		5	200.7	10	< 10	0	323 µg/L	
Copper	✓		5	200.7	25	< 25	0	242 µg/L	
Iron		✓	5	200.7	100	27,000	4,824	5,000 µg/L	
Lead	✓		5	200.9	2	< 2	0	160 µg/L	
Mercury	✓		5	245.1	0.20	< 0.20	0	0.739 µg/L	
Nickel		✓	5	200.7	40	< 40	0	1,450 µg/L	
Selenium	✓		5	200.9	5	< 5	0	235.8 µg/L	
Silver		✓	5	200.7	7	< 7	0	35.1 µg/L	
Zinc		✓	5	200.7	20	470	106	420 µg/L	86
Cyanide		✓	5	4500-CN,	10	< 10	0	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✓		5	8260C	2.0	< 2.0	0	100 µg/L	---
Benzene	✓		5	8260C	1.0	< 1.0	0	5.0 µg/L	---
1,4 Dioxane	✓		5	8260C	50	< 50	0	200 µg/L	---
Acetone	✓		5	8260C	10	< 10	0	7.97 mg/L	---
Phenol	✓		5	8260C	10	< 10	0	1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✓		5	8260C	2.0	< 2.0	0	4.4 µg/L	
1,2 Dichlorobenzene	✓		5	8260C	2.0	< 2.0	0	600 µg/L	---
1,3 Dichlorobenzene	✓		5	8260C	2.0	< 2.0	0	320 µg/L	---
1,4 Dichlorobenzene	✓		5	8260C	2.0	< 2.0	0	5.0 µg/L	---
Total dichlorobenzene	✓		5	8260C	2.0	< 2.0	0	763 µg/L in NH	---
1,1 Dichloroethane	✓		5	8260C	1.0	< 1.0	0	70 µg/L	---
1,2 Dichloroethane	✓		5	8260C	2.0	< 2.0	0	5.0 µg/L	---
1,1 Dichloroethylene	✓		5	8260C	2.0	< 2.0	0	3.2 µg/L	---
Ethylene Dibromide	✓		5	8260C	2.0	< 2.0	0	0.05 µg/L	---
Methylene Chloride	✓		5	8260C	5.0	< 5.0	0	4.6 µg/L	---
1,1,1 Trichloroethane	✓		5	8260C	2.0	< 2.0	0	200 µg/L	---
1,1,2 Trichloroethane	✓		5	8260C	2.0	< 2.0	0	5.0 µg/L	---
Trichloroethylene	✓		5	8260C	2.0	< 2.0	0	5.0 µg/L	---
Tetrachloroethylene	✓		5	8260C	2.0	< 2.0	0	5.0 µg/L	
cis-1,2 Dichloroethylene	✓		5	8260C	2.0	< 2.0	0	70 µg/L	---
Vinyl Chloride	✓		5	8260C	2.0	< 2.0	0	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✓		5	8270D	10	< 10	0	190 µg/L	
Diethylhexyl phthalate	✓		5	8270D	10	< 10	0	101 µg/L	
Total Group I PAHs		✓	5	8270D	0.10	< 0.10	0	1.0 µg/L	---
Benzo(a)anthracene		✓	5	8270D	0.062	0.085	1.04	As Total PAHs	0.0038
Benzo(a)pyrene	✓		5	8270D	0.10	< 0.10	0		
Benzo(b)fluoranthene	✓		5	8270D	0.083	< 0.083	0		
Benzo(k)fluoranthene	✓		5	8270D	0.10	< 0.10	0		
Chrysene	✓		5	8270D	0.10	< 0.10	0		
Dibenzo(a,h)anthracene	✓		5	8270D	0.10	< 0.10	0		
Indeno(1,2,3-cd)pyrene	✓		5	8270D	0.10	< 0.10	0		

[illegible]

E. Treatment system information

<p>1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)</p> <p> <input type="checkbox"/> Adsorption/Absorption <input type="checkbox"/> Advanced Oxidation Processes <input type="checkbox"/> Air Stripping <input checked="" type="checkbox"/> Granulated Activated Carbon (“GAC”)/Liquid Phase Carbon Adsorption <input checked="" type="checkbox"/> Ion Exchange <input checked="" type="checkbox"/> Precipitation/Coagulation/Flocculation <input checked="" type="checkbox"/> Separation/Filtration <input checked="" type="checkbox"/> Other; if so, specify: </p> <p>Treatment will be applied as required to meet effluent discharge requirements.</p>	
<p>2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.</p> <p>Prior to discharge, dewatering effluent will be routed through a sedimentation tank, oil/water separator, bag filters and other necessary treatment components (such as ion exchange, GAC, precipitation/coagulation/flocculation, as required) to remove suspended solids, and dissolved and undissolved chemical compounds. See attached Figure 5.</p> <p>Identify each major treatment component (check any that apply):</p> <p> <input checked="" type="checkbox"/> Fractionation tanks <input type="checkbox"/> Equalization tank <input checked="" type="checkbox"/> Oil/water separator <input type="checkbox"/> Mechanical filter <input type="checkbox"/> Media filter <input type="checkbox"/> Chemical feed tank <input type="checkbox"/> Air stripping unit <input checked="" type="checkbox"/> Bag filter <input checked="" type="checkbox"/> Other; if so, specify: Granulated activated carbon, ion exchnage, precipitation and other treatments as need to meet effluent limits. </p> <p>Indicate if either of the following will occur (check any that apply):</p> <p> <input type="checkbox"/> Chlorination <input type="checkbox"/> De-chlorination </p>	
<p>3. Provide the design flow capacity in gallons per minute (gpm) of the most limiting component.</p> <p>Indicate the most limiting component: Flowmeter</p> <p>Is use of a flow meter feasible? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, if so, provide justification:</p>	250
<p>Provide the proposed maximum effluent flow in gpm.</p>	100
<p>Provide the average effluent flow in gpm.</p>	50
<p>If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:</p>	N/A
<p>4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	

F. Chemical and additive information

<p>1. Indicate the type(s) of chemical or additive that will be applied to effluent prior to discharge or that may otherwise be present in the discharge(s): (check all that apply)</p> <p><input type="checkbox"/> Algaecides/biocides <input type="checkbox"/> Antifoams <input checked="" type="checkbox"/> Coagulants <input type="checkbox"/> Corrosion/scale inhibitors <input type="checkbox"/> Disinfectants <input checked="" type="checkbox"/> Flocculants <input type="checkbox"/> Neutralizing agents <input type="checkbox"/> Oxidants <input type="checkbox"/> Oxygen <input type="checkbox"/> scavengers <input type="checkbox"/> pH conditioners <input type="checkbox"/> Bioremedial agents, including microbes <input type="checkbox"/> Chlorine or chemicals containing chlorine <input type="checkbox"/> Other; if so, specify: coagulants and/or flocculants may be added to the treatment system if necessary to meet effluent limits.</p>
<p>2. Provide the following information for each chemical/additive, using attachments, if necessary:</p> <p>a. Product name, chemical formula, and manufacturer of the chemical/additive; b. Purpose or use of the chemical/additive or remedial agent; c. Material Safety Data Sheet (MSDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive; d. The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the chemical/additive; e. Any material compatibility risks for storage and/or use including the control measures used to minimize such risks; and f. If available, the vendor's reported aquatic toxicity (NOAEL and/or LC50 in percent for aquatic organism(s)).</p>
<p>3. Has the operator attached an explanation which demonstrates that the addition of such chemicals/additives may be authorized under this general permit in accordance with the instructions in F, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; if no, has the operator attached data that demonstrates each of the 126 priority pollutants in CWA Section 307(a) and 40 CFR Part 423.15(j)(1) are non-detect in discharges with the addition of the proposed chemical/additive? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p>

G. Endangered Species Act eligibility determination

<p>1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:</p> <p><input checked="" type="checkbox"/> FWS Criterion A: No endangered or threatened species or critical habitat are in proximity to the discharges or related activities or come in contact with the “action area”.</p> <p><input type="checkbox"/> FWS Criterion B: Formal or informal consultation with the FWS under section 7 of the ESA resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by FWS on a finding that the discharges and related activities are “not likely to adversely affect” listed species or critical habitat (informal consultation). Has the operator completed consultation with FWS? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No; if no, is consultation underway? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> FWS Criterion C: Using the best scientific and commercial data available, the effect of the discharges and related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the operator and affirmed by EPA, that the discharges and related activities will have “no effect” on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the FWS. This determination was made by: (check one) <input type="checkbox"/> the operator <input type="checkbox"/> EPA <input type="checkbox"/> Other; if so, specify:</p>
--

☒ **NMFS Criterion:** A determination made by EPA is affirmed by the operator that the discharges and related activities will have “no effect” or are “not likely to adversely affect” any federally threatened or endangered listed species or critical habitat under the jurisdiction of NMFS and will not result in any take of listed species. Has the operator previously completed consultation with NMFS? (check one): ☐ Yes ☒ No

2. Has the operator attached supporting documentation of ESA eligibility in accordance with the instructions in Appendix I, and G, above? (check one): ☒ Yes ☐ No

Does the supporting documentation include any written concurrence or finding provided by the Services? (check one): ☒ Yes ☐ No; if yes, attach.

H. National Historic Preservation Act eligibility determination

1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:

- ☒ **Criterion A:** No historic properties are present. The discharges and discharge-related activities (e.g., BMPs) do not have the potential to cause effects on historic properties.
- ☐ **Criterion B:** Historic properties are present. Discharges and discharge related activities do not have the potential to cause effects on historic properties.
- ☐ **Criterion C:** Historic properties are present. The discharges and discharge-related activities have the potential to have an effect or will have an adverse effect on historic properties.

2. Has the operator attached supporting documentation of NHPA eligibility in accordance with the instructions in H, above? (check one): ☒ Yes ☐ No

Does the supporting documentation include any written agreement with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (TPHO), or other tribal representative that outlines measures the operator will carry out to mitigate or prevent any adverse effects on historic properties? (check one): ☐ Yes ☒ No

I. Supplemental information

Describe any supplemental information being provided with the NOI. Include attachments if required or otherwise necessary.

See attached letter report prepared by GEI.

Has the operator attached data, including any laboratory case narrative and chain of custody used to support the application? (check one): ☒ Yes ☐ No

Has the operator attached the certification requirement for the Best Management Practices Plan (BMPP)? (check one): ☒ Yes ☐ No

J. Certification requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

BMPP certification statement: A BMPP meeting the requirements of this general permit will be implemented on the Site.

Notification provided to the appropriate State, including a copy of this NOI, if required.

Check one: Yes ☐ No ☒

Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.

Check one: Yes ☐ No ☒

Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.

Check one: Yes ☐ No ☐ NA ☒

Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.

Check one: Yes ☐ No ☐ NA ☒

Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☒ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:

Check one: Yes ☒ No ☐ NA ☐

Signature:

Date: 6/18/18

Print Name and Title:

Chester Myers, Senior Waterfront Project Manager

J. Certification requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

BMPP certification statement: A BMPP meeting the requirements of this general permit will be implemented on the Site.

Notification provided to the appropriate State, including a copy of this NOI, if required.

Check one: Yes ☐ No ☒

Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.

Check one: Yes ☐ No ☒

Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.

Check one: Yes ☐ No ☐ NA ☒

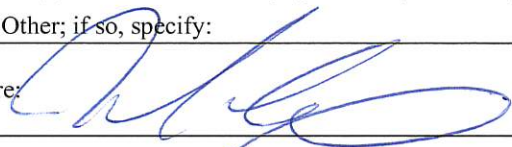
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.

Check one: Yes ☐ No ☐ NA ☒

Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☒ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:

Check one: Yes ☒ No ☐ NA ☐

Signature:



Date:

6/15/18

Print Name and Title:

MARK WHITE PRESIDENT

Enter number values in green boxes below

Enter values in the units specified



0	Q_R = Enter upstream flow in MGD
1	Q_P = Enter discharge flow in MGD
0	Downstream 7Q10

Enter a dilution factor, if other than zero



1

Enter values in the units specified



	C_d = Enter influent hardness in mg/L CaCO_3
	C_s = Enter receiving water hardness in mg/L CaCO_3

Enter **receiving water** concentrations in the units specified



7.75	pH in Standard Units
20.66	Temperature in °C
0	Ammonia in mg/L
0	Hardness in mg/L CaCO_3
28	Salinity in ppt
0	Antimony in µg/L
0	Arsenic in µg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
0	Copper in µg/L
0	Iron in µg/L
0	Lead in µg/L
0	Mercury in µg/L
0	Nickel in µg/L
0	Selenium in µg/L
0	Silver in µg/L
0	Zinc in µg/L

Enter **influent** concentrations in the units specified

↓

0	TRC in µg/L
2.4	Ammonia in mg/L
0	Antimony in µg/L
5.4	Arsenic in µg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
0	Copper in µg/L
27000	Iron in µg/L
0	Lead in µg/L
0	Mercury in µg/L
0	Nickel in µg/L
0	Selenium in µg/L
0	Silver in µg/L
470	Zinc in µg/L
0	Cyanide in µg/L
0	Phenol in µg/L
0	Carbon Tetrachloride in µg/L
0	Tetrachloroethylene in µg/L
0	Total Phthalates in µg/L
0	Diethylhexylphthalate in µg/L
0.085	Benzo(a)anthracene in µg/L
0	Benzo(a)pyrene in µg/L
0	Benzo(b)fluoranthene in µg/L
0	Benzo(k)fluoranthene in µg/L
0	Chrysene in µg/L
0	Dibenzo(a,h)anthracene in µg/L
0	Indeno(1,2,3-cd)pyrene in µg/L
0	Methyl-tert butyl ether in µg/L

Notes:

Freshwater: Q_R equal to the 7Q10; enter alternate Q_R if approved by the State; enter 0 if no dilution factor

Saltwater (estuarine and marine): enter Q_R if approved by the State; enter 0 if no entry

Discharge flow is equal to the design flow or 1 MGD, whichever is less

Only if approved by State as the entry for Q_R ; leave 0 if no entry

Saltwater (estuarine and marine): only if approved by the State

Leave 0 if no entry

Freshwater only

pH, temperature, and ammonia required for all discharges

Hardness required for freshwater

Salinity required for saltwater (estuarine and marine)

Metals required for all discharges if present and if dilution factor is > 1

Enter 0 if non-detect or testing not required

if >1 sample, enter maximum

if >10 samples, may enter 95th percentile

Enter 0 if non-detect or testing not required

Dilution Factor

1.0

A. Inorganics

TBEL applies if bolded

WQBEL applies if bolded

Ammonia	Report	mg/L	---	
Chloride	Report	µg/L	---	
Total Residual Chlorine	0.2	mg/L	7.5	µg/L
Total Suspended Solids	30	mg/L	---	
Antimony	206	µg/L	640	µg/L
Arsenic	104	µg/L	36	µg/L
Cadmium	10.2	µg/L	8.9	µg/L
Chromium III	323	µg/L	100.0	µg/L
Chromium VI	323	µg/L	50	µg/L
Copper	242	µg/L	3.7	µg/L
Iron	5000	µg/L	---	µg/L
Lead	160	µg/L	8.5	µg/L
Mercury	0.739	µg/L	1.11	µg/L
Nickel	1450	µg/L	8.3	µg/L
Selenium	235.8	µg/L	71	µg/L
Silver	35.1	µg/L	2.2	µg/L
Zinc	420	µg/L	86	µg/L
Cyanide	178	mg/L	1.0	µg/L

B. Non-Halogenated VOCs

Total BTEX	100	µg/L	---	
Benzene	5.0	µg/L	---	
1,4 Dioxane	200	µg/L	---	
Acetone	7.97	mg/L	---	
Phenol	1,080	µg/L	300	µg/L

C. Halogenated VOCs

Carbon Tetrachloride	4.4		1.6	µg/L
1,2 Dichlorobenzene	600	µg/L	---	
1,3 Dichlorobenzene	320	µg/L	---	
1,4 Dichlorobenzene	5.0	µg/L	---	
Total dichlorobenzene	---	µg/L	---	
1,1 Dichloroethane	70	µg/L	---	
1,2 Dichloroethane	5.0	µg/L	---	
1,1 Dichloroethylene	3.2	µg/L	---	
Ethylene Dibromide	0.05	µg/L	---	
Methylene Chloride	4.6	µg/L	---	
1,1,1 Trichloroethane	200	µg/L	---	
1,1,2 Trichloroethane	5.0	µg/L	---	
Trichloroethylene	5.0	µg/L	---	
Tetrachloroethylene	5.0	µg/L	3.3	µg/L
cis-1,2 Dichloroethylene	70	µg/L	---	

Vinyl Chloride	2.0	µg/L	---	
D. Non-Halogenated SVOCs				
Total Phthalates	190	µg/L	---	µg/L
Diethylhexyl phthalate	101	µg/L	2.2	µg/L
Total Group I Polycyclic				
Aromatic Hydrocarbons	1.0	µg/L	---	
Benzo(a)anthracene	1.0	µg/L	0.0038	µg/L
Benzo(a)pyrene	1.0	µg/L	0.0038	µg/L
Benzo(b)fluoranthene	1.0	µg/L	0.0038	µg/L
Benzo(k)fluoranthene	1.0	µg/L	0.0038	µg/L
Chrysene	1.0	µg/L	0.0038	µg/L
Dibenzo(a,h)anthracene	1.0	µg/L	0.0038	µg/L
Indeno(1,2,3-cd)pyrene	1.0	µg/L	0.0038	µg/L
Total Group II Polycyclic				
Aromatic Hydrocarbons	100	µg/L	---	
Naphthalene	20	µg/L	---	
E. Halogenated SVOCs				
Total Polychlorinated Biphenyls	0.000064	µg/L	---	
Pentachlorophenol	1.0	µg/L	---	
F. Fuels Parameters				
Total Petroleum Hydrocarbons	5.0	mg/L	---	
Ethanol	Report	mg/L	---	
Methyl-tert-Butyl Ether	70	µg/L	20	µg/L
tert-Butyl Alcohol	120	µg/L	---	
tert-Amyl Methyl Ether	90	µg/L	---	

Compliance Level
applies if shown

50 $\mu\text{g/L}$

--- $\mu\text{g/L}$

0.1	µg/L
---	µg/L
---	µg/L
---	µg/L
---	µg/L
---	µg/L
---	µg/L

0.5	µg/L
-----	------

Malagrida, Catherine

From: Vakalopoulos, Catherine (DEP) <Catherine.Vakalopoulos@MassMail.State.MA.US>
Sent: Tuesday, April 03, 2018 8:49 AM
To: Malagrida, Catherine; Ruan, Xiaodan (DEP)
Subject: RE: Dilution Factor Calculation - Reserved Channel

Hi Cat,

Yes, the dilution factor to saltwater is 1 unless there is modeling or a dye study that shows otherwise.

Take care,

Cathy

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection
1 Winter St., Boston, MA 02108, 617-348-4026

 Please consider the environment before printing this e-mail

From: Malagrida, Catherine [mailto:CMalagrida@geiconsultants.com]
Sent: Monday, April 02, 2018 4:33 PM
To: Vakalopoulos, Catherine (DEP); Ruan, Xiaodan (DEP)
Subject: Dilution Factor Calculation - Reserved Channel

Hello

I am preparing a NPDES RGP for the Berth 10 redesign in South Boston. Our effluent would discharge to the Reserved Channel. Can you confirm that as the Reserved Channel is saltwater that the dilution factor is 1.

Thank you,
Cat

Catherine Malagrida, P.G.

Project Geologist



GEI Consultants
Consulting Engineers & Scientists

GEI Consultants, Inc.

400 Unicorn Park Drive | Woburn, MA 01801

T: 781.721.4025 | **M:** 339.221.3521 | **F:** 781.721.4073

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→ Applications

- Automotive
- Biodiesel
- Dairy Industry
- Industrial Wastewater
- Food Processing Industry
- Iron Removal
- Latex Removal
- Metals Treatment
- Mining Industry
- Municipal Wastewater
- Odor Control
- Petrochemical Industry
- Poultry Industry

→ Products

- Activated Carbon
- Bag Filtration
 - Bag Filter Housings
 - Bag Filter Media
- Biological Treatment
- Chemicals (Specialty)
- Clarifiers
- Controls
- Dissolved Air Flotation
- Dewatering
- Evaporators
- Membrane Filtration
- Microbial Bacteria
- Oil/Water Separators
- Ozone
- Pressure Filtration
- Screens
- Separators/Strainers
- Tanks

[Bag Filters](#) / [Accugaf Filter Bags](#)

Accugaf filter bags are constructed from FDA compliant materials. They are ideal for food processing applications and will filter particulate from 1 micron to 25 microns with 99% efficiency..

Related Product Links

[Accugaf Filter Bags](#) | [Duragaf Filter Bags](#) | [Hayflow Filter Element](#) | [Lofclear Filter Bags](#) | [Nylon & Polyester Mesh](#) | [Progaf Filter Bags](#) | [Sentinel® Filter Bags & Seal](#) | [Snap Ring Filtration Media Overview](#)

ACCUGAF™, Filter Bags for Applications Demanding Efficiency >99%

The ACCUGAF filter bag pushes the boundaries of bag filtration technology far beyond traditional designs. With efficiencies >99%, each A model provides cost-effective filtration solutions for demanding applications. The five models assure users that particles from the range of can be removed effectively while delivering long service life.



Material	Filter Model	Buy Now	Particle Size at Common Removal Efficiencies (µm)					ΔP (psi) Size 02 @ 45 gpm
			>60%	>90%	>95%	>99%	>99.9%	
Polypropylene	AGF 51		0.2	0.6	0.8	1.5	5	1.30
	AGF 53		0.8	1	2	3	5	3.20
	AGF 55		1	2	3	5	15	0.73
	AGF 57		2	4	5	10	25	0.60
	AGF 59		10	25	30	25	35	0.44
Polyester	AGFE 51		0.2	0.6	0.8	1.5	5	1.30
	AGFE 55		1	2	3	5	15	0.73
	AGFE 57		2	4	5	10	25	0.60

High-Efficiency Performance

ACCUGAF filter bags feature:

- 100% welded seams
- Patented SENTINEL® seal ring
- Meltblown filtration media in polypropylene or polyester
- No additives, such as resins, binders or surface treatments

FDA Compliant Materials

ACCUGAF Polypropylene filter bags are constructed entirely of materials compliant to FDA requirements for materials in contact with food materials conform to US Code of Federal Regulations 21 CFR Part 177 and EU Directive 2002/72/EC.

Applications

Although ideally suited for food and beverages, ACCUGAF filter bags will deliver equal performance in a wide range of demanding applications as:

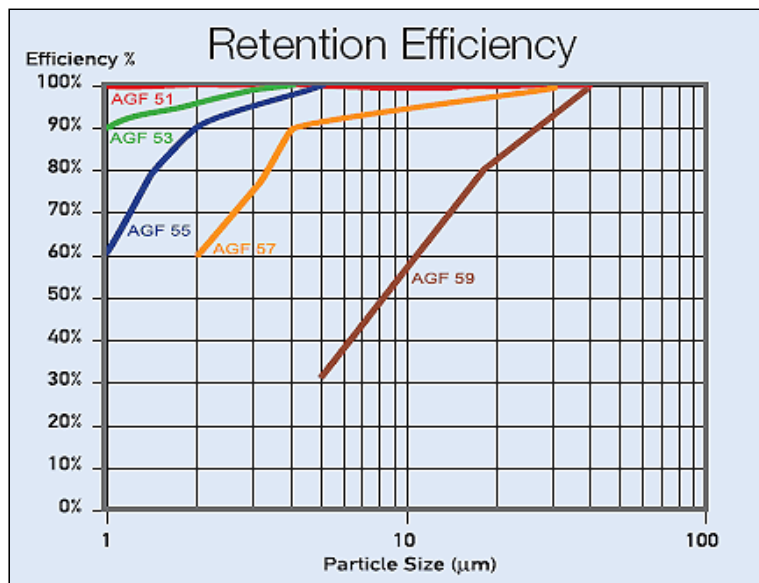
- Beer, wine, spirits and beverage filtration
- Fine particle removal in parts cleaning
- Final filtration of lacquers
- Final filtration of vinegar
- Activated carbon removal in process systems
- Final filtration of hydraulic oils and lubricants

Bag Positioner

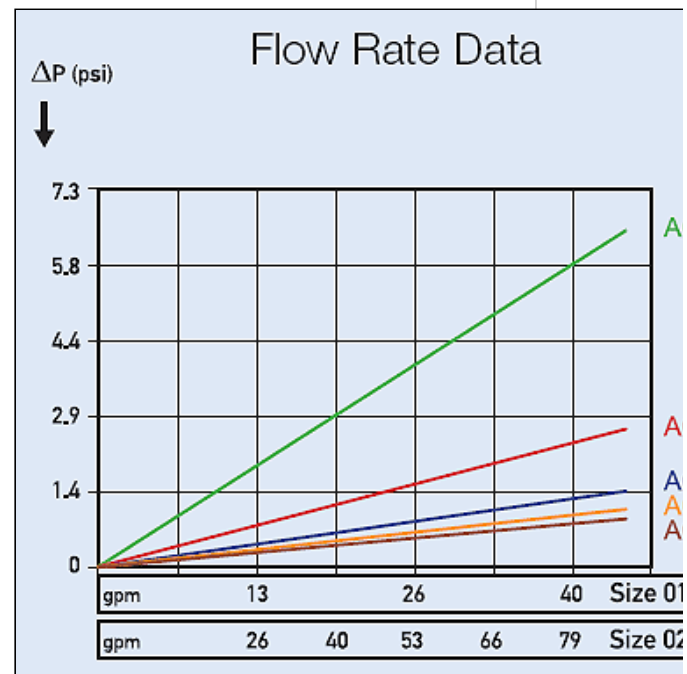
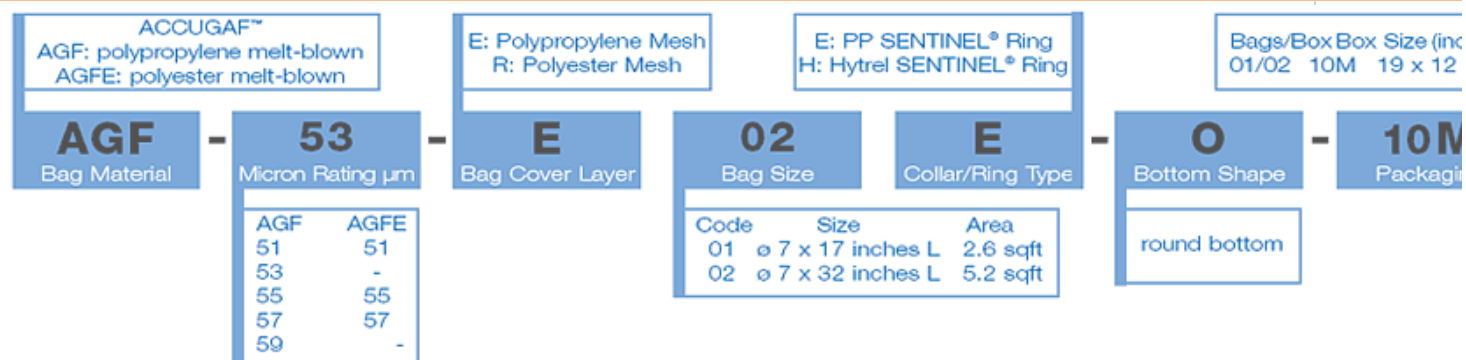
ACCUGAF filter bags must be used with the Eaton bag positioner. This eases insertion and assures correct alignment of the filter bag inside the restrainer basket. In addition, the bag is protected against damage to inadvertent back-flow.

Pre-Wetting in Aqueous Solutions

ACCUGAF polypropylene filter bags are fabricated from microfiber filtration media. These materials are hydro-phobic, indicating that water will not wet the fiber surfaces. As with all polypropylene filters, a lower surface tension fluid (wetting agent) must be used to wet the media prior to introducing water. Prior to service, the filter bags must be immersed in a solution compatible with the process fluid. After wetting, an aqueous fluid will be drawn into the media through capillary action. Full details about installation and wetting are provided on every box of ACCUGAF filter bags.



ACCUGAF Filter Bags are available in retention codes of 51, 53, 55, 57, and 59. To select the perfect ACCUGAF Filter Bag for your application use the chart and choose the retention efficiency level you need on the left side (Y Axis) of the chart at the particle size in microns at the bottom (X Axis). Next find which bag efficiency code (identified by the colored lines) is closest to that point. This will assist you in finding the most cost effective filter bag for your critical filtration application.

**BAG FILTER PRODUCT CODE EXPLANATION**





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[Bag Filter Media](#) / [Lofclear Absolute Rate Oil Removal Filter Bags](#)

Accugaf filter bags are constructed from FDA compliant materials. They are ideal for food processing applications and will filter particulate from 1 micron to 25 microns with 99% efficiency..

Related Product Links

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LOFCLEAR: Cost Effective Filter Bags for Absolute Filtration Applications



A pleated prefilter provides a very large surface (about 32 sq ft) to collect

LOFCLEAR filter bags now make absolute filtration viable in many applications where only standard bags could be used due to cost constraints. Made from 100% pure polypropylene materials compliant with food requirements, LOFCLEAR filter bags contain no leachables or lubricants such as silicone oils. In addition, their excellent oil adsorbancy makes LOFCLEAR filter bags ideally suited to the oil removal needs of the paint and coatings industries.

LOFCLEAR™ Filter Bag Filtration Ratings

Filter Model		Particle Size at Common Removal Efficiencies (µm)				ΔP (psi) Size 02 @ 45 gpm
		Buy Now	>60%	>90%	>95%	>99%
113/123		0.5	1	2	4	0.36
114/124		0.75	2	3	5	0.30
115/125		1.5	3.5	8	10	0.15
116/126		2	6	13	15	<0.15
118/128		25	35	37	40	<0.15
119/129		15	25	27	30	<0.15
130		6	14	15	20	0.72
135		1	6	8	10	0.29
522		0.5	1	1.5	2.6	1.45
525		1	2	3.5	6	0.26
527		2	5	9	13	0.15
529		10	20	23	32	<0.15

Two Series to Match Filters to Applications

→ Applications

- Automotive
- Biodiesel
- Dairy Industry
- Industrial Wastewater
- Food Processing Industry
- Iron Removal
- Latex Removal
- Metals Treatment
- Mining Industry
- Municipal Wastewater
- Odor Control
- Petrochemical Industry
- Poultry Industry

→ Products

- Activated Carbon
- Bag Filtration
 - Bag Filter Housings
 - Bag Filter Media
- Biological Treatment
- Chemicals (Specialty)
- Clarifiers
- Controls
- Dissolved Air Flotation
- Dewatering
- Evaporators
- Membrane Filtration
- Microbial Bacteria
- Oil/Water Separators
- Ozone
- Pressure Filtration

- Screens
- Separators/Strainers
- Tanks

gels and solids before it reaches the final filter layers.



LOFCLEAR filter bags are available in two styles, Series 100 and Series 500. These two styles make it possible to match the requirements of a wide range of applications, depending on the needs for efficiency and long life. The Series 100 filters use a multi-layer construction for applications where high efficiency is of prime importance. The Series 500 filters utilize a patent pending pleated construction to increase surface area for applications requiring high dirt capacities and long life.

Perfect for Removal of Gelatinous Materials

LOFCLEAR filter bags have proven to be highly effective in the removal of gelatinous contaminants. The combination of deep micro fiber filtration media breaks up gels and retains them within the media depth. These features prevent surface blockage and breakthrough typical of standard filter bag materials.

LOFCLEAR™ Series 100 Filter Bags

LOFCLEAR Series 100 Filter Bags feature a proven three layer construction with a sewn filter welded to the SENTINEL® seal. They feature efficiencies >99% over a wide range of particle sizes, with dirt capacities up to 1/2 pound. The seven models feature:

- Polypropylene pre filter
- Meltblown polypropylene microfiber final filter
- Polypropylene outer migration barrier

LOFCLEAR Series 100 filter bags are an excellent choice for application such as high purity fluids with low particulate concentration, first pass guard filtration, oil adsorption and activated carbon removal.

The LOFCLEAR 128 and 129 were especially developed for the filtration of electro-coatings in the automotive industry. The filtration design allows pigments to pass through the filtration layers, while retaining impurities and removing silicones and other crater forming substances. The LOFCLEAR 130 filter bag adds extra adsorption capacity for retaining high amounts of oils or other crater forming substances. The LOFCLEAR 135 delivers high removal of particulate and oils for clear coat applications where pigment removal is not an issue.

LOFCLEAR™ Series 500 Filter Bags

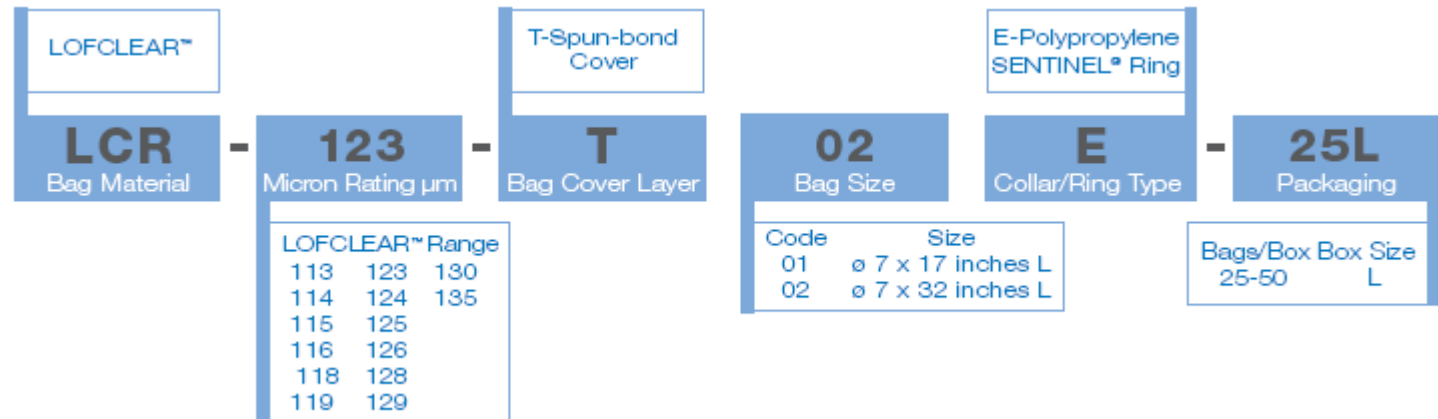
LOFCLEAR Series 500 Filter Bags have an all welded multi-pleated construction for high efficiency and long life. This series of bags has a pleated prefiltration layer and a complex design of final filtration layers, allowing the removal of difficult to filter gels and deformable particles with a high capacity of solids loading. The outer web covering eliminates any downstream fiber migration.

LOFCLEAR Series 500 Filter Bags are available in four different efficiency ratings so you can choose your exact required filtration efficiency. LOFCLEAR Filter Bags have filtration efficiencies from 95 to 99%, with a dirt holding capacity of over 2 pounds.

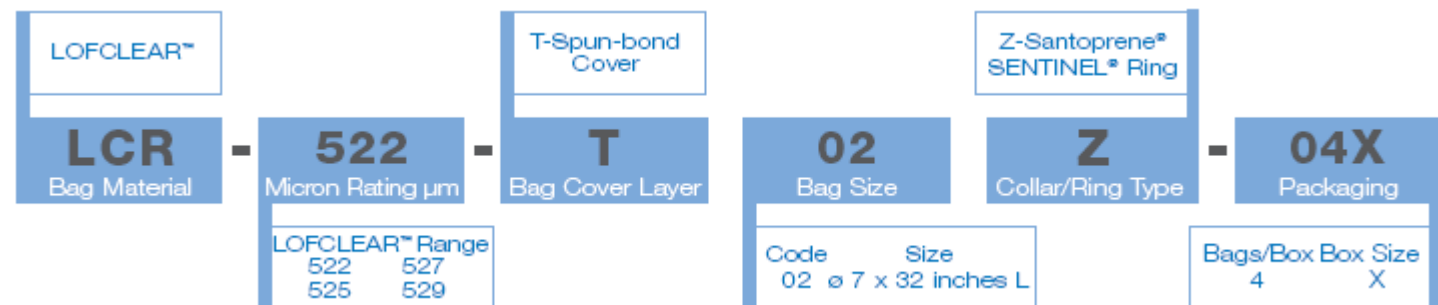
Among the many applications for LOFCLEAR Series 500 Filter Bags are oils, slurries, dilute oil removal, re-circulating batch systems, and systems with heavy contamination.

Operational Considerations

LOFCLEAR Series 500 Filter Bags must be used with a bag positioner. This eases insertion and assures correct alignment of the filter bag inside the restrainer basket. In addition, the positioner protects the filter bag from potential damage that could be caused by inadvertent back flow.



LOFCLEAR 500 SERIES BAG FILTER PRODUCT CODE EXPLANATION



[Activated Carbon](#) | [Aeration](#) | [Air Treatment](#) | [Bag Filters & Housings](#) | [Chemicals](#) | [Dissolved Air Flotation](#) | [Dust Collection](#) | [Evaporators](#) | [Filter Presses](#) | [Flocculation](#) | [Inline Filter Vessels](#) | [Membrane Filtration](#) | [Odor Control](#) | [Ozone](#) | [Oil Water Separators](#) | [Sewage Systems](#) | [Liquid and Vapor Phase Vessels](#) | [Wet Scrubbers](#) | [Careers](#)





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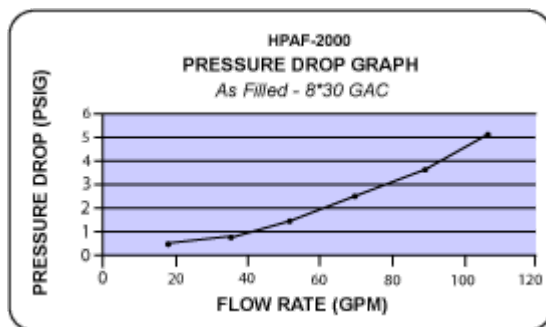


[Liquid Phase V essels](#) > [HPAF 2000](#)

General Description

The HPAF-2000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorbntion unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit



Standard Specifications

HPAF-2000 SPECIFICATIONS			
Overall Height	8'6"	Vessel/Internal Piping Materials	CS(SA-36) / SCH 40 PVC
Diameter	48"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	3"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	3/4" / 1/2"	Maximum Pressure / Temp	75PSIG / 140° F
GAC Fill (lbs)	2,000	Cross Sectional Bed Area	12.5 FT ²
Shipping / Operational Weight (lbs)	3,020/6,775	Bed Depth/Volume	5.5 FT / 68.7 FT ³
Capacity in gallons	570	Flow rate based on 5-10 min. contact time	57 - 114 GPM

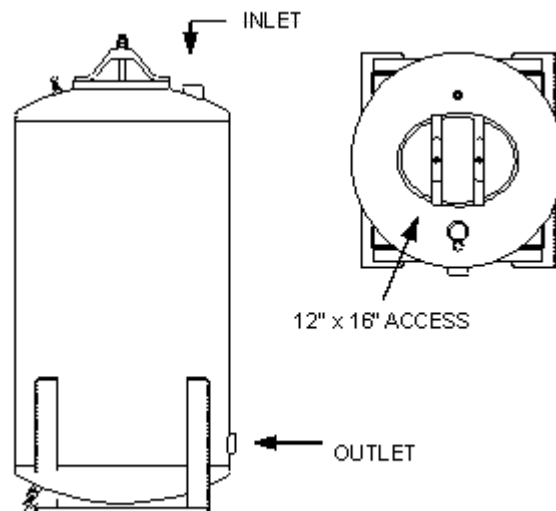
→ Applications

- Automotive
- Biodiesel
- Dairy Industry
- Industrial Wastewater
- Food Processing Industry
- Iron Removal
- Latex Removal
- Metals Treatment
- Mining Industry
- Municipal Wastewater
- Odor Control
- Petrochemical Industry
- Poultry Industry

→ Products

- Activated Carbon
- Bag Filtration
- Biological Treatment
- Chemicals (Specialty)
- Clarifiers
- Controls
- Dissolved Air Flotation
- Dewatering
- Evaporators
- Membrane Filtration
- Microbial Bacteria
- Oil/Water Separators
- Ozone
- Pressure Filtration
- Screens
- Separators/Strainers

■ Tanks



Liquid Phase V essels, Filter Series

AFD Series	AF Series	HPAF Series	HPP Series
AFD 30	AF 250	HPAF 500	HPP 50
AFD 55	AF 500	HPAF 1000	HPP 100
AFD 85	AF 1000	HPAF 2000	HPP 200
AFD 110	AF 2000	HPAF 3000	HPP 300
AHP 55	AF 3000	HPAF 5000	HPP 500
N/A	AF 5000	HPAF10000	HPP 1000
N/A	AF10000	HPAF20000	HPP2000

[Activated Carbon](#) | [Aeration](#) | [Air Treatment](#) | [Bag Filters & Housings](#) | [Chemicals](#) | [Dissolved Air Flotation](#) | [Dust Collection](#) | [Evaporators](#) | [Filter Presses](#) | [Flocculation](#) | [Inline Filter Vessels](#) | [Membrane Filtration](#) | [Odor Control](#) | [Ozone](#) | [Oil Water Separators](#) | [Sewage Systems](#) | [Liquid and Vapor Phase Vessels](#) | [Wet Scrubbers](#) | [Careers](#)



“CLEANING THE WORLD WITH ACTIVATED CARBON”



SAFETY DATA SHEET

Section 1 - Identity

Identity (As Used on Label and List): GC Activated Carbon (Including, but not limited to GC C-40, GC 4 x 8B, GC 4 x 8S, GC 6 x 12, GC 6 x 12S, GC 8 x 30, GC 8 x 30AW, GC 8 x 30S, GC 8 x 30SAW, GC 12 x 40, GC 12 x 40AW, GC 12x40SAW, GC 20 x 50, GC 20 x 50S, GC Powdered, GC WDC activated carbons)

Manufacturers Name: General Carbon Corporation
33 Paterson Street
Paterson, NJ 07501
Tel: (973)523-2223
www.generalcarbon.com
Date Prepared: February 16, 2017

Section 2 - Hazardous Identification

2.1 GHS-US Classification

Eye Irritation	2B H320
STOT	SE 3 H335

Hazards not otherwise classified: Combustible dust. May form combustible dust concentrations in air. All powdered activated carbons are classified as weakly explosive (Dust explosion class St1): Given the necessary conditions of a strong ignition source, right concentrations of airborne carbon dust, adequate oxygen levels, and confinement, the potential for a deflagration event exists. A combustible dust hazard assessment and employee training should be carried out. See sections 7 and 9 for further information on combustible dust precautions.

2.2 Label Elements



Hazard Pictograms

Signal word (GHS-US)

Hazard Statements

Precautionary statements (GHS-US)

: Warning
: H320- Causes eye irritation
: H335- May cause respiratory irritation
: P261- Avoid breathing dust
: P264- Wash thoroughly after handling
: P271- Use in well-ventilated area
: P280- Wear protective gloves/clothing/eye & face protect
: P304&340: IF INHALED: Remove person to fresh air

: P305&351&P338: If in eyes, Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.
 : P312- Call Poison Control Center/Doctor if you feel sick
 : P403& P233- Store in well-ventilated place. Keep container tightly closed
 : P405- Store locked up
 : P501- Dispose of container to appropriate receptacle

2.3 Other Hazards

No additional information available

2.4 Unknown acute toxicity (GHS-US)

No data available

Section 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixture

Name	CAS #	%	GHS US classification
Carbon	7440-44-0	100	Not classified

Section 4 – First Aid Measures

4.1 Description of first aid measures

First aid after inhalation	Remove person to fresh air. If not breathing, administer CPR or artificial respiration. Get immediate medical attention.
First aid after skin contact	If skin reddening or irritation develops, seek medical attention
First aid after eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, get medical attention.
First aid after ingestion	If the material is swallowed, get immediate medical attention or advice. DO NOT induce vomiting unless directed to do so by medical personnel.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	May cause respiratory irritation
Symptoms/injuries after skin contact	May cause skin irritation
Symptoms/injuries after eye contact	Causes serious eye damage
Symptoms/injuries after ingestion	May be harmful if swallowed

4.3 Indication of any immediate medical attention and special treatment needed

No additional information available.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	If involved with fire, flood with plenty of water
Unsuitable extinguishing media	None

5.2 Special hazards arising from substance or mixture

Fire hazard	None known
Explosion hazard	None known
Reactivity	Contact with strong oxidizers such as ozone, liquid oxygen, chlorine, etc. may result in fire.

5.3 Advice for firefighters

Protection during firefighting	Firefighters should wear full protective gear
--------------------------------	---

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

General measures

Avoid contact with the skin and eyes

6.1.1 For non-emergency personnel

No additional information available

6.1.2 For emergency responders

No additional information available

6.2 Environmental precautions

None

6.3 Methods and material for containment and cleaning up

For containment

If possible, stop flow of product

Methods for cleaning up

Shovel or sweep up and put in closed container for disposal

6.4 Reference to other sections

No additional information available

Section 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling

Avoid contact with eyes. Wet activated carbon removes oxygen from air causing severe hazard to workers inside carbon vessels or confined spaces

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Protect containers from physical damage. Store in dry, cool, well-ventilated area. Store away from strong oxidizers, strong acids, ignition sources, combustible materials, and heat. An adequate air gap between packages is recommended to reduce propagation in the case of fire .

Handling: A hazard assessment should be carried out. As with all finely divided materials, ground all transfer, blending, and dust collecting equipment to prevent static discharge. Remove all strong ignition sources from material handling, transfer, and processing areas where dust may be present or accumulate. Practice good housekeeping. Excessive accumulations of dust or dusty conditions can create the potential of secondary explosions. Inspection of hidden surfaces for dust accumulation should be made routinely. If possible, eliminate the pathways for dust to accumulate in hidden areas. Fine carbon dust may penetrate electrical equipment and cause electrical shorts. Where dusting is unavoidable, dust-proof boxes and regular electrical line maintenance are recommended. Refer to NFPA standards 654 for guidance.

Caution employees-no smoking in carbon storage and handling areas. Carbon is difficult to ignite, however, cutting and welding operations should be carried out using hot work permit systems where precautions are taken not to ignite carbon, which may smolder undetected.

7.3 Specific end use(s)

No additional information available

Section 8: Exposure controls/ personal protection

8.1 Control parameters

No additional information available

8.2 Exposure controls

Appropriate engineering controls	: Local exhaust and general ventilation must be adequate to meet exposure standards
Hand Protection	: None required under normal product handling conditions
Eye Protection	: safety glasses
Skin and body protection	: Wear suitable working clothes
Respiratory protection	: If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Particulate
Color	: Black
Odor	: No data available
Odor threshold	: No data available
Ph	: No data available
Relative evaporation rate	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor Pressure	: No data available
Relative Vapor density @ 20 deg C	: No data available
Relative Density	: 28-33 lb/ cubic foot
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

Combustible dust- These products may contain combustible dusts. May form combustible dust concentrations in air. All powdered activated carbons are weakly explosive. No specific information on these carbons are available.

Typical combustible dust data for a variety of activated carbons:

K_{st} values reported between 43-113 (various sources).

Dust explosion class St1 (K_{st} values < 200 are Class St1-weakly explosive).

MEC (minimum explosible concentration) in air 50 and 60 g/m³ (two reports)

Volatile content (by weight): < 8% ASTM D3175-11 (Watercarb)

MIT (minimum ignition temperature) values reported between 400-680°C (752-1256°F) (four reports)

Maximum Absolute Explosion pressure values reported between 6.0-8.6 bar (four reports)

9.2 Other information

No additional information available

Section 10: Stability and reactivity

10.1 Reactivity

Contact with strong oxidizers such as ozone, liquid oxygen, chlorine, etc. may result in fire

10.2 Chemical stability

Stable under normal conditions

10.3 Possibility of hazardous reactions

Will not occur

10.4 Conditions to avoid

None

10.5 Incompatible materials

Strong oxidizing and reducing agents such as ozone, liquid oxygen or chlorine.

10.6 Hazardous decomposition products

Carbon monoxide may be generated in the event of a fire.

Section 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity : Not classified

Carbon (7440-44-0)

LD50 oral rat : >10000 mg/kg

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes eye irritation

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity : May cause respiratory irritation (single exposure)

Specific target organ toxicity : Not classified (repeated exposure)

Aspiration hazard : Not classified

Section 12: Ecological Information

12.1 Toxicity

No additional information available

12.2 Persistence and degradability

No additional information available

12.3 Bioaccumulative potential

No additional information available

12.4 Mobility in soil

No additional information available

12.5 Other adverse effects

No additional information available

Section 13: Disposal concerns

13.1 Waste treatment methods

Waste Disposal recommendations : Dispose of contents/container in accordance with local/ regional/ international regulations

Section 14: Transportation information

In accordance with DOT/ADR/RID/ADNR/IMDG/ICAO/IATA

14.1 UN Number

Not applicable. See Note 1 below.

14.2 UN proper shipping name

Not applicable

Note 1: Under the UN classification for activated carbon, all activated carbons have been identified as a class 4.2 product. However, This product has been tested according to the United Nations Transport of Dangerous Goods test protocol for a “self-heating substance” (United Nations Transportation of Dangerous Goods, Manual of Tests and Criteria, Part III, Section 33.3.1.6 - Test N.4 - Test Method for Self Heating Substances) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material. This information is applicable only for the Activated Carbon Product identified in this document.

Section 15: Regulatory information

15.1 US Federal regulations

Carbon (7440-44-0)

Listed on the United States TSCA inventory

15.3 US State regulations

No additional information available

Section 16: Other information

Full text of H-phrases:

Eye Irrit. 2B

Serious eye damage/eye irritation Category 2B

STOT SE 3

Specific target organ toxicity (single exposure) Category 3

H335

May cause respiratory irritation

NFPA®



NFPA health hazard

: 1-Exposure could cause irritation but only minor residual injury even if no treatment is given

NFPA fire hazard

: 1- Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur (e.g. [mineral oil](#)). Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F)

NFPA reactivity

: 0- Normally stable, even under fire exposure conditions, and are not reactive with water

The information contained herein is accurate to the best of our knowledge. General Carbon Corporation makes no warranty with respect hereto said information and disclaims all liability from reliance there in.

Compact tank dosing unit for floor mounting CTD



The new sera compact tank dosing unit for floor mounting

- Highest precision and safety through the use of the most modern and proven pump technology
- Wide range of application by 7 different sizes which can be combined with various pump sizes
- Minimum space requirement through compact design
- Use of standard components which can be upgraded by standardized accessories
- Optimized processing and delivery times by setting a standard



Supported by:



Federal Ministry
of Economics
and Technology

on the basis of a decision
by the German Bundestag

Compact tank dosing unit for floor mounting CTD



Capability characteristics

- The most modern pump technology
- Standardized dosing tanks
- Highest accuracy
- Flexible control
- High operational safety
- High quality materials
- Easy to operate
- Compact design

Configuration example

Basic design with following options:

- Chemical vapour lock (gas-tight design)
- Drain cock
- Dosing pump
- Container screw connection
- Filling valve
- Level indication



Compact tank dosing unit for floor mounting CTD



Technical specifications

Type	Container volume l	Suction lance (without pump)	Flow rate l/h	Pump series (option)	Admissible backpressure bar
CTD-40.1	40	DN5	up to max. 35	R/C 204.1-0,4e ... R/C 204.1-35e	up to max. 10
CTD-75.1	75	DN10	up to max. 180	R/C 204.1-0,4e ... R/RF/C 409.2-180e	up to max. 10
CTD-100.1	100	DN10	up to max. 180	R/C 204.1-0,4e ... R/RF/C 409.2-180e	up to max. 10
CTD-200.1	200	DN10 / DN15	up to max. 570	R/C 204.1-0,4e ... R/RF/C 410.2-570e	up to max. 10
CTD-300.1	300	DN10 / DN15	up to max. 570	R/C 204.1-0,4e ... R/RF/C 410.2-570e	up to max. 10
CTD-500.1	500	DN10 / DN15	up to max. 570	R/C 204.1-0,4e ... R/RF/C 410.2-570e	up to max. 10
CTD-1000.1	1000	DN10 / DN15	up to max. 570	R/C 204.1-0,4e ... R/RF/C 410.2-570e	up to max. 10

Compact tank dosing unit for floor mounting CTD

Standard scope of delivery

- PE container with litre scale and screw cap
- Type plate
- 4 x angle bracket
- Aeration and vent pipe bend
- Suction lance with foot valve and sieve

Option / Accessories

- Gas-tight design
(connection to the ventilation system or chemical vapour lock)
- Dosing pump
- Multifunction valve
- Level indication
- Filling valve
- Container screw connection
- Drain cock or collecting basin
- Agitator
- Level indicator (for black container)
- Cabling
- Control system
- Splash guard
- Dosing technology equipment (pressure keeping valve, pulsation damper, shut off valve)
- Solvent cage
- plug lock for screw cap
- Terminal boxes or electrical connection sets



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[illegible]

Influent is fed into the top of the clarifier (A) and flows under a baffle to the integral flash mixing tank (B). The flash mixing tank is where flocculant may be added with a PolyMark™ polymer blending system and blended with the fluid using an optional high speed mixer.

From the flash mix tank, the fluid flows over a baffle into the integral flocculation tank (C), which may include an optional low speed mixer.

From the flocculation tank, the fluid flows downward through the feed channel between the two plate stacks to the sludge chamber at the bottom of the clarifier. At this point, the fluid velocity decreases and large particles drop out of suspension.

The flow then enters the bottom of the plate stacks and flows between the settling plates. Between each of the plates, the fluid has a low velocity, laminar flow profile which encourages the remaining solids to settle on the surface of the lower plate and flow downward to the sludge holding tank.

As the solids are settling along the plate surfaces, the fluid is moving upward through the plate stacks, over the weirs, and into the discharge trough.

Clarified effluent is then discharged through a flanged pipe connection at the bottom of the trough. Sludge is periodically drawn off the bottom of the sludge holding tank at the bottom of the clarifier.

Sample ports are provided to assist with determining the sludge level, which is periodically pumped to a batch storage tank for further liquid-solid separation via an M.W. Watermark Filter Press for eventual disposal.

Fig.1a – Top View

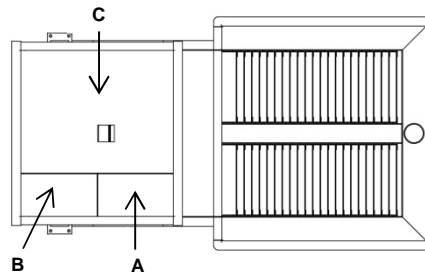


Fig.1b – Isometric View

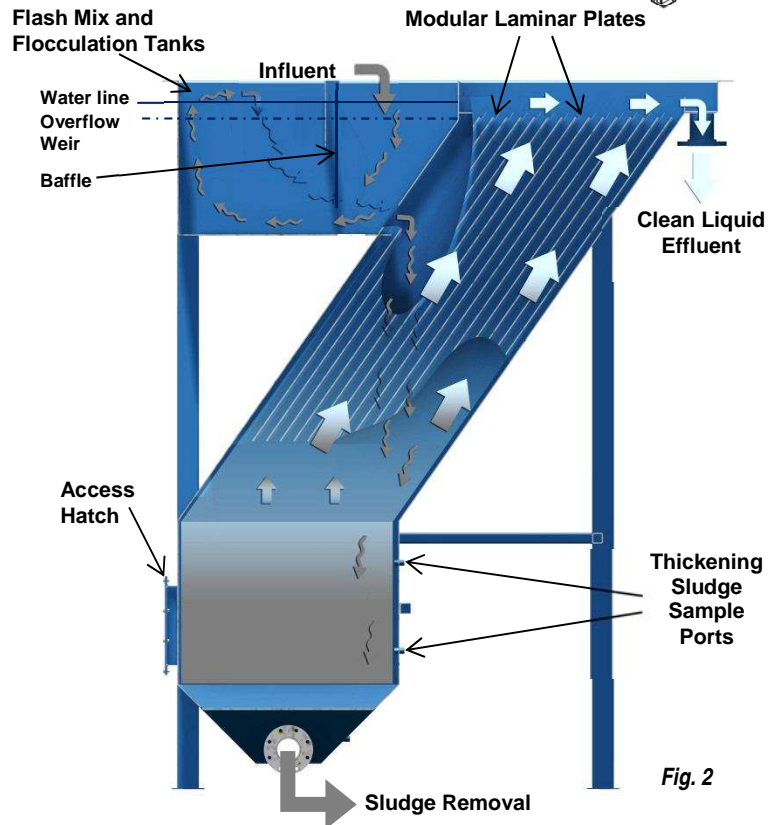
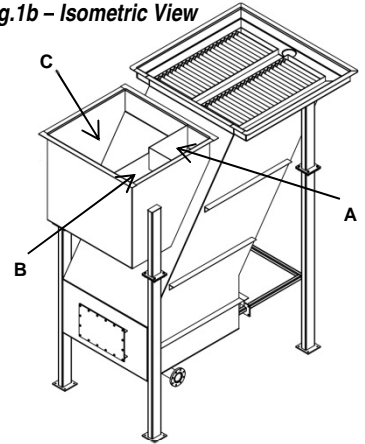
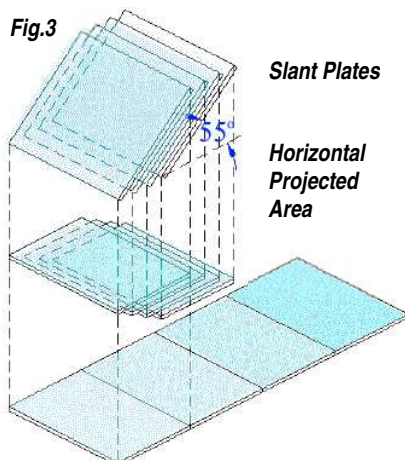


Fig. 2

Floor Space Requirement Horizontal vs. Slant Plate Clarifier

Fig.3



Equipment Design

The M.W. Watermark SPC Slant Plate Clarifiers are designed to provide efficient solids removal from a wide range of waste and process liquids. The settling plates are inclined at an angle of 55° with 2-inch spacing. The slope of the plates allows the solids to settle by gravity while the fluid moves upward through the plate stack.

Stacking the plates reduces the floor space required by the clarifier compared to a horizontal clarifier. The inclined plate design allows the total gravity settling area to be as much as ten times the floor space occupied by the clarifier.

Fig. 3 illustrates the floor space reduction resulting from stacked plates.



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Alpharetta, GA 30009
Tel: 678-514-2100 / 888-326-2020
Web Site: www.EcologixSystems.com

DATE OF ISSUE: 05/12/2003

DATE OF LATEST REVISION: 12/12/2010

SECTION 1: PRODUCT & COMPANY IDENTIFICATION

PRODUCT NAME: CIFS

PRIMARY FUNCTION: Coagulant

CHEMICAL FAMILY: Inorganic salts

CHEMICAL NAME: Iron (III) Sulfate

MANUFACTURER: Ecologix Environmental Systems, LLC

11800 Wills Road, Suite 100

Alpharetta, GA 30009 USA

PHONE: 678-514-2100 Fax: 678-514-2106

EMERGENCY 24/7 CONTACT: ECOLOGIX 1-888-326-2020

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>(CAS #)</u>	<u>%WT</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OTHER</u>
Hydroxy ferric sulfate	127687-53-0	<50		1mg/m ³ TWA	

Other components may be blended in this formulation. The precise composition is proprietary. Bona fide requests for disclosure to medical personnel must be made in accordance with the procedures in 29 CFR 1910.1200(i) 1-13. This MSDS contains valuable information critical to the safe handling and proper use of the product and should be retained and available for employees and other users of this product. This material is classified as hazardous under OSHA regulations.

SECTION 3: HAZARDS IDENTIFICATION

EYES: May cause pain and is corrosive. May cause burns to inner eyelids.

SKIN: May cause skin irritation. Prolonged contact may cause dermatitis and burns.

INGESTION: May produce mild to moderately severe oral and esophageal burns, with mild to severe stomach burns.

INHALATION: Mist or spray may be irritating to mucous membranes, respiratory tract and lung tissues.

SECTION 4: FIRST AID MEASURES

EYES: Flush eyes gently with water for at least 15 minutes while holding eyelids apart. Seek medical attention immediately.

SKIN: Remove contaminated clothing and wash with soap and water for at least 15 minutes. Seek medical attention.

INGESTION: Immediately rinse mouth with water. **Do not induce vomiting.** Do not give bicarbonate to neutralize.

Drink milk or water to dilute. If vomiting occurs, drink more liquids. Seek medical attention.

INHALATION: Remove to fresh air. Give oxygen/artificial respiration if needed. Seek medical attention for breathing difficulty.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: N/A

EXTINGUISHING MEDIA: Any appropriate. Respiratory and eye protection required.

SPECIAL FIRE FIGHTING PROCEDURES: Dike area to prevent runoff and contamination of water sources.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Sulfuric acid could react with metals to produce hydrogen.

SECTION 6: ACCIDENTAL RELEASE MEASURES

SMALL SPILLS: Wear appropriate personal protective equipment. Neutralize with lime, limestone or soda ash.

LARGE SPILLS: Dike the spilled liquid and collect residues for proper disposal. Neutralize with lime, limestone or soda ash. This will generate carbon dioxide, so additional ventilation may be necessary. Notify appropriate authorities.

WASTE DISPOSAL METHOD: Dispose of in accordance with local, state and federal regulations.

SECTION 7: HANDLING and STORAGE

HANDLING AND STORAGE: Protect drum from damage, freezing and intense heat. Keep containers closed and away from light. Do not store in metal containers which will dissolve and generate hydrogen.

OTHER PRECAUTIONS: Do not swallow. Wear protective eye goggles, gloves, boots and clothing.

SECTION 8: EXPOSURE CONTROLS & PERSONAL PROTECTION

EYE PROTECTION: Wear chemical splash-proof goggles.

PROTECTIVE GLOVES: Wear rubber gloves, apron and shoe covers.

RESPIRATORY PROTECTION: If vapors or mists excessive, wear a NIOSH/MSHA approved respirator with mist prefilter.

VENTILATION: Always store and use all chemicals in well ventilated areas.

OTHER PROTECTIVE EQUIPMENT: Provide eye wash and safety shower stations.

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

BOILING POINT: 220° - 230°F

SPECIFIC GRAVITY: 1.35 – 1.55

EVAPORATION RATE: N/A

VAPOR DENSITY: N/A

VAPOR PRESSURE: N/A

SOLUBILITY IN WATER: Infinite below pH 2. Above pH 3, reddish ferric hydroxide precipitates.

pH of NEAT SOLUTION: <1

APPEARANCE/ODOR: Reddish brown solution; little or no odor.

SECTION 10: STABILITY & REACTIVITY

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

INCOMPATIBILITY (MATERIALS TO AVOID): Fairly corrosive to mild steel. Avoid contact with bases or alkalies.

HAZARDOUS DECOMPOSITION PRODUCTS: Produces sulfur oxides

SECTION 11: TOXICOLOGICAL INFORMATION

CHRONIC EFFECTS AND MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None noted.

SPECIAL NOTE: None of the components in this product are considered a carcinogen by OSHA, NTP or IARC.

SECTION 12: ECOLOGICAL INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with federal, state, and local environmental laws.

SECTION 14: TRANSPORT INFORMATION

DOT Proper Shipping Name: Corrosive Liquid, acidic, inorganic, n.o.s. (contains ferric sulfate), 8, UN 3264, Pg III

SECTION 15: REGULATORY INFORMATION

FEDERAL EPA

Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA):

Requires notification to the National Response Center of releases of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQ) in 40 CFR 302.4. Components present in this product at a level which would require reporting under the statute are:

<u>Chemical</u>	<u>CAS Number</u>	<u>RQ</u>
NONE		

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III:

Requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQ) in 40 CFR 355 (SARA 302, 304, 311 and 312) Components present in this product at a level which could require reporting under the statute are: NONE

Toxic Substances Control Act (TSCA) Status:

All components of this product are on the TSCA inventory

EPA Priority Pollutants: NONE

RCRA Hazard Class: If discarded - non-hazardous.

SECTION 16: OTHER INFORMATION

HMIS RATINGS: Health=, Flammability=, Reactivity=
HMIS HAZARD INDEX: 0=MINIMAL, 1=SLIGHT, 2=MODERATE, 3=SERIOUS, 4=SEVERE

LEGEND:

CAS Chemical Abstract Number
CERCLA Comprehensive Environmental Response, Compensation and Liability Act
CFR Code of Federal Regulations
DOT Department of Transportation
HMIS Hazardous Materials Identification System
IARC International Agency for Research on Cancer
MSDS Material Safety Data Sheet
N/A Not Applicable
N/D Not Determined

NTP National Toxicity Program
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
SARA Superfund Amendments and Reauthorization Act
TSCA Toxic Substance Control Act
TLV Threshold Limit Value

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. Users are responsible to determine the suitability of this product and to evaluate risks prior to use.

The Ultimate Polymer Dosing System

The M.W. Watermark PolyMark™ integrates the best features and designs developed and refined from decades of experience. The PolyMark™ is a combination of proven polymer blending technologies and today's latest in flow and integrated control devices.

M.W. Watermark offers a complete line of blending units ranging from 25 gph to 2400 gph solution flow rates with 0.05 gph to 60 gph neat polymer flow rates to meet all of your process, dewatering, and flocculation needs.

Parts

PolyMark™ polymer blender parts are interchangeable with existing leading brand units. Many parts are in-stock and can ship the same day. Contact M.W. Watermark for a complete list of replacement parts.

M.W. Watermark

M.W. Watermark is a leading supplier of water and wastewater equipment, parts, and service. We serve both municipal and industrial markets globally.

Our team strives to provide unmatched service and value to customers, helping reduce their costs while keeping the environment clean.

Contact us for more information.

PolyMark™ Polymer Blending

Representing the latest in flow control, polymer metering, and integrated controls:

- Superior Controls Flexibility
- Unmatched Quality
- World-Class Service



The PolyMark™ is the industry's best value, packed with features to optimize polymer consumption.





Industries & Applications

- Wastewater Treatment Plants
- Steel & Aluminum Plants
- Industrial Wastewater Solids
- Metal Finishing Operation
- Mining Industry Fines
- Chemical Processing
- Foundries
- Power Plants

Sludge Dewatering

- ✦ Belt Filter Presses
- ✦ Centrifuges
- ✦ Screw Presses
- ✦ Plate & Frame

Sludge Thickening

- ◆ Gravity Belt Thickeners (GBT)
- ◆ Diffused Air Flotation (DAF)

Control Options

The PolyMark™ controllers were developed as a result of customer requests, feedback, and experience. The Watermark engineering team, backed with many years designing, calibrating, and troubleshooting other polymer blending systems, created a superior product and the industry's best value.

The PolyMark™ was designed with two levels of control/automation:

- ♦♦ DC – Direct Control
- ♦♦ SFC – Solution Flow Control

DC Features

- On/Off/Remote start contact
- Optional 4-20 mA pump signal pass through for polymer pump control

SFC Features

- ✦ Touchscreen operation with remote capability
- ✦ Direct and proportional polymer dosing modes
- ✦ Trending display of water flows, polymer rate, percent concentration
- ✦ 4-20 mA input for solution concentration or pump rate
- ✦ Digital input for Start/Remote selection
- ✦ Digital output for Running/Alarm/Remote status
- ✦ Configurable start-up and shut down process including a day tank set-up
- ✦ Optional variable speed mixing
- ✦ Optional Loss of Polymer Flow sensor
- ✦ Fully automatic primary and post dilution flow control
- ✦ Precise, automated “make down” and “as delivered” solution control
- ✦ 4-20 mA input for sludge flow rate
- ✦ Recipes for varying polymer type, sludge characteristics, and dewatering equipment
- ✦ Trending for polymer dosage as mass of polymer/mass of solids (e.g. lbs/ton)

L00003 02 1216 PolyMark-Brochure

sc200™ UNIVERSAL CONTROLLER

Applications

- Drinking Water
- Wastewater
- Industrial Water
- Power



One Controller for the Broadest Range of Sensors.

Choose from 30 digital and analog sensor families for up to 17 different parameters.

Maximum Versatility

The sc200 controller allows the use of digital and analog sensors, either alone or in combination, to provide compatibility with Hach's broad range of sensors, eliminating the need for dedicated, parameter-specific controllers.

Ease of Use and Confidence in Results

Large, high-resolution, transreflective display provides optimal viewing resolution in any lighting condition. Guided calibration procedures in 19 languages minimize complexity and reduce operator error. Password-protected SD card reader offers a simple solution for data download and transfer. Visual warning system provides critical alerts.

Wide Variety of Communication Options

Utilize two to five analog outputs to transmit primary and secondary values for each sensor, or integrate Hach sensors and analyzers into MODBUS RS232/RS485, Profibus® DP, and HART networks.



Password protected SD card reader offers a simple solution for data download and transfer, and sc200 and digital sensor configuration file duplication and backup.

Controller Comparison



Features	Previous Models		sc200™ Controller	Benefits
	sc100™ Controller	GLI53 Controller		
Display	64 x 128 pixels 33 x 66 mm (1.3 x 2.6 in.)	64 x 128 pixels 33 x 66 mm (1.3 x 2.6 in.)	160 x 240 pixels 48 x 68 mm (1.89 x 2.67 in.) Transreflective	<ul style="list-style-type: none"> Improved user interface—50% bigger Easier to read in daylight and sunlight
Data Management	irDA Port/PDA Service Cable	N/A	SD Card Service Cable	<ul style="list-style-type: none"> Simplifies data transfer Standardized accessories/ max compatibility
Sensor Inputs	2 Max Direct Digital Analog via External Gateway	2 Max Analog Depending on Parameter	2 Max Digital and/or Analog with Sensor Card	<ul style="list-style-type: none"> Simplifies analog sensor connections Works with analog and digital sensors
Analog Inputs	N/A	N/A	1 Analog Input Signal Analog 4-20mA Card	<ul style="list-style-type: none"> Enables non-sc analyzer monitoring Accepts mA signals from other analyzers for local display Consolidates analog mA signals to a digital output
4-20 mA Outputs	2 Standard	2 Standard	2 Standard Optional 3 Additional	<ul style="list-style-type: none"> Total of five (5) 4-20 mA outputs allows multiple mA outputs per sensor input
Digital Communication	MODBUS RS232/RS485 Profibus DP V1.0	HART	MODBUS RS232/RS485 Profibus DP V1.0 HART 7.2	<ul style="list-style-type: none"> Unprecedented combination of sensor breadth and digital communication options

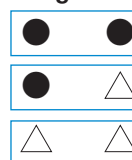
Choose from Hach's Broad Range of Digital and Analog Sensors

Parameter	Sensor	Digital or Analog
Ammonia	AMTAX™ sc, NH4D sc, AISE sc, AN-ISE sc	●
Chlorine	CLF10 sc, CLT10 sc, 9184 sc	●
Chlorine Dioxide	9185 sc	●
Conductivity	GLI 3400 Contacting, GLI 3700 Inductive	△
Dissolved Oxygen	LDO® Model 2, 5740 sc	●
Dissolved Oxygen	5500	△
Flow	U53, F53 Sensors	△
Nitrate	NITRATAX™ sc, NO3D sc, NISE sc, AN-ISE sc	●
Oil in Water	FP360 sc	●
Organics	UVAS sc	●
Ozone	9187 sc	●
pH/ORP	pHD	●
pH/ORP	pHD, pH Combination, LCP	△
Phosphate	PHOSPHAX™ sc	●
Sludge Level	SONATAX™ sc	●
Suspended Solids	SOLITAX™ sc, TSS sc	●
Turbidity	1720E, FT660 sc, SS7 sc, ULTRATURB sc, SOLITAX sc, TSS sc	●
Ultra Pure Conductivity	8310, 8311, 8312, 8315, 8316, 8317 Contacting	△
Ultra Pure pH/ORP	8362	△

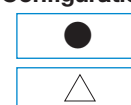
● = Digital △ = Analog

Connect up to two of any of the sensors listed above, in any combination, to meet your application needs. The diagrams below demonstrate the potential configurations. Operation of analog sensors requires the controller to be equipped with the appropriate sensor module. Contact Hach Technical Support for help with selecting the appropriate module.

2 Channel Configurations



1 Channel Configurations



Specifications*

Dimensions (H x W x D)	5.7 in x 5.7 in x 7.1 in (144 mm x 144 mm x 181 mm)
Display	Graphic dot matrix LCD with LED backlighting, transreflective
Display Size	1.9 x 2.7 in. (48 mm x 68 mm)
Display Resolution	240 x 160 pixels
Weight	3.75 lbs. (1.70 kg)
Power Requirements (Voltage)	100 - 240 V AC, 24 V DC
Power Requirements (Hz)	50/60 Hz
Operating Temperature Range	-20 to 60 °C , 0 to 95% RH non-condensing
Analog Outputs	Two (Five with optional expansion module) to isolated current outputs, max 550 Ω , Accuracy: $\pm 0.1\%$ of FS (20mA) at 25 °C, $\pm 0.5\%$ of FS over -20 °C to 60 °C range
Analog Output Functional Mode	Operational Mode: measurement or calculated value
Security Levels	Linear, Logarithmic, Bi-linear, PID
Mounting Configurations	2 password-protected levels
Enclosure Rating	Wall, pole, and panel mounting
Conduit Openings	NEMA 4X/IP66
Relay: Operational Mode	1/2 in NPT Conduit
	Primary or secondary measurement, calculated value (dual channel only) or timer

Relay Functions

Scheduler (Timer), Alarm, Feeder Control, Event Control, Pulse Width Modulation, Frequency Control, and Warning

Relays

Four electromechanical SPDT (Form C) contacts, 1200 W, 5 A

Communication

MODBUS RS232/RS485, PROFIBUS DPV1, or HART 7.2 optional

Memory Backup

Flash memory

Electrical

EMC

Certifications

CE compliant for conducted and radiated emissions:

- CISPR 11 (Class A limits)

- EMC Immunity EN 61326-1 (Industrial limits)

Safety

cETLus safety mark for:

- General Locations per ANSI/UL 61010-1 & CAN/CSA C22.2. No. 61010-1

- Hazardous Location Class I, Division 2, Groups A,B,C & D (Zone 2, Group IIC) per FM 3600 / FM 3611 & CSA C22.2 No. 213 M1987 with approved options and appropriately rated Class I, Division 2 or Zone 2 sensors

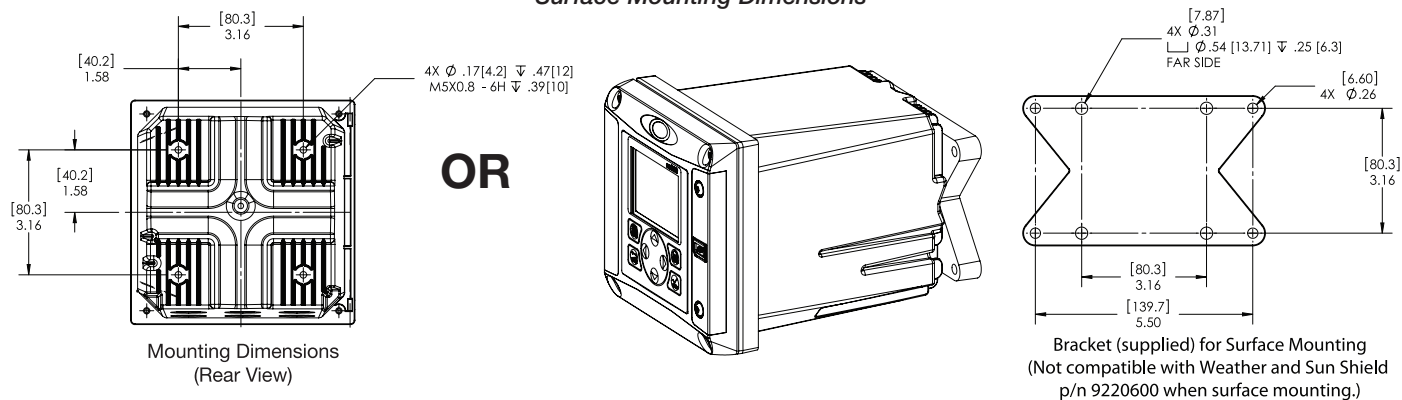
cULus safety mark

- General Locations per UL 61010-1 & CAN/CSA C22.2. No. 61010-1

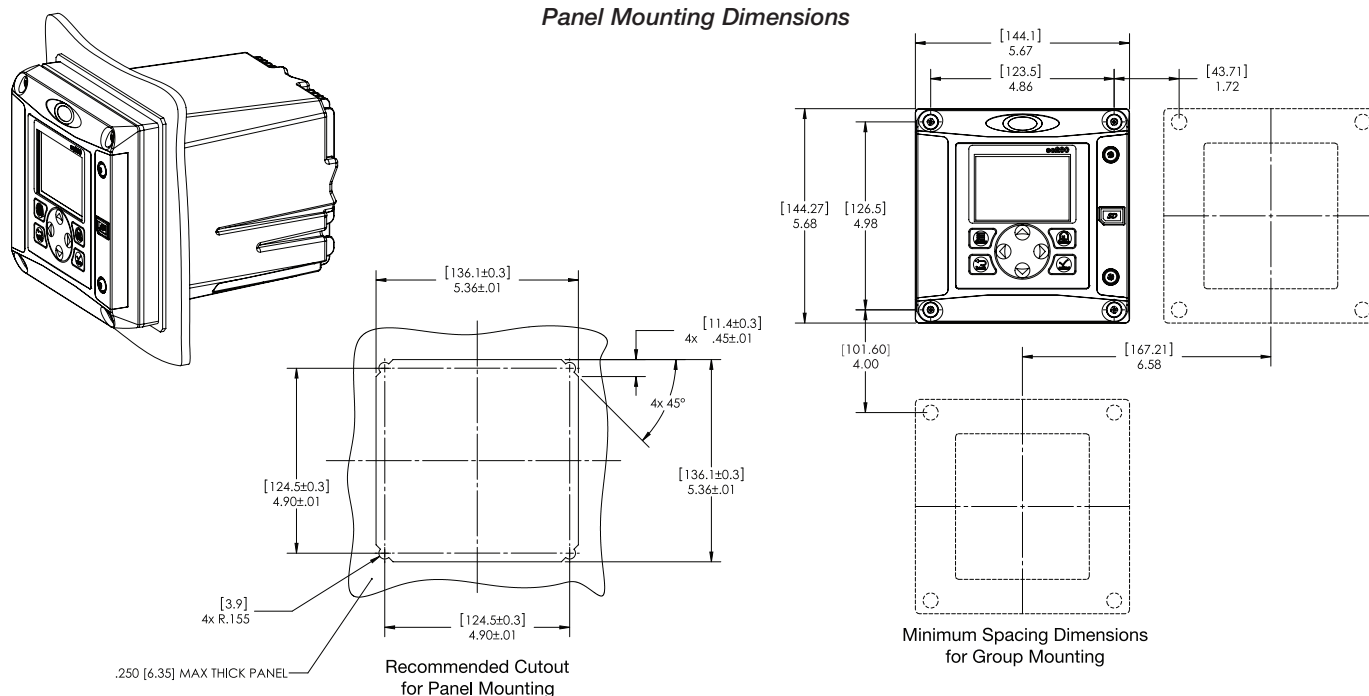
**Subject to change without notice.*

Dimensions

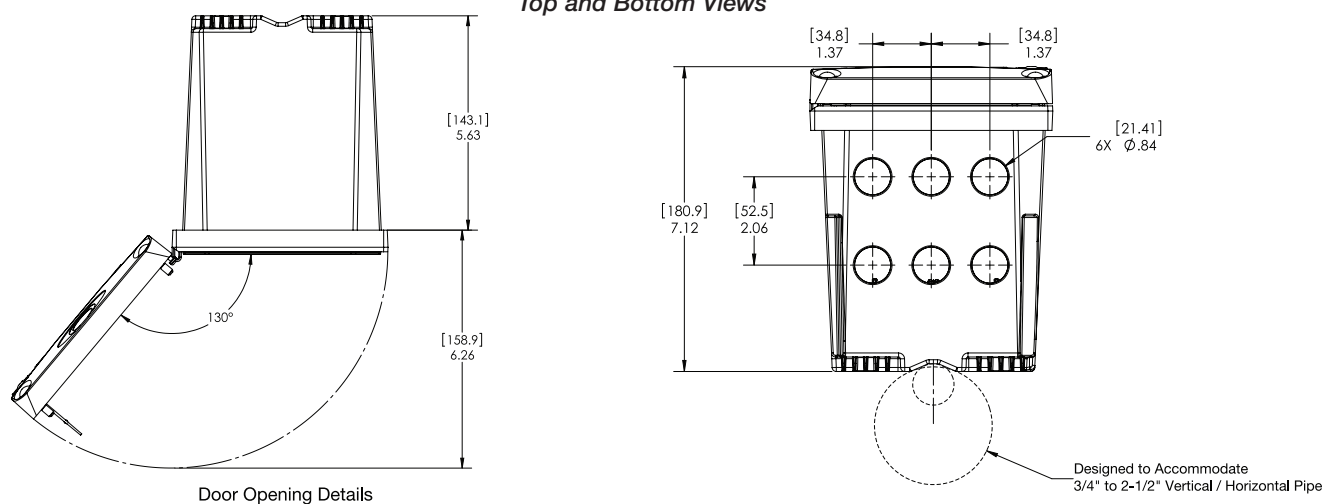
Surface Mounting Dimensions



Panel Mounting Dimensions



Top and Bottom Views



Ordering Information

sc200 for Hach Digital and Analog Sensors

LXV404.99.00552	sc200 controller, 2 channels, digital
LXV404.99.00502	sc200 controller, 1 channel, digital
LXV404.99.00102	sc200 controller, 1 channel, pH/DO
LXV404.99.00202	sc200 controller, 1 channel, Conductivity
LXV404.99.01552	sc200 controller, 2 channels, digital, Modbus RS232/RS485
LXV404.99.00112	sc200 controller, 2 channel, pH/DO

Note: Other Sensor combinations are available. Please contact Hach Technical Support or your Hach representative.

Note: Communication options (MODBUS, Profibus DPV1, and HART) are available. Please contact Hach Technical Support or your Hach representative.

sc200 for Ultrapure Sensors

9500.99.00602	sc200 controller, 1 channel, ultrapure conductivity
9500.99.00702	sc200 controller, 1 channel, ultrapure pH
9500.99.00662	sc200 controller, 2 channel, ultrapure conductivity
9500.99.00772	sc200 controller, 2 channel, ultrapure pH

Sensor and Communication Modules

9012900	Analog pH/ORP and DO module for GLI Sensors
9013000	Analog Conductivity module for GLI Sensors
9012700	Flow module
9012800	4-20 mA Input Module
9525700	Analog pH/ORP Module for Polymetron Sensors
9525800	Analog Conductivity Module for Polymetron Sensors
9013200	Modbus 232/485 Module
9173900	Profibus DP Module
9328100	HART Module
9334600	4-20 mA Output Module (Provides 3 additional mA Outputs)

Accessories

9220600	sc200 Weather and Sun Shield with UV Protection Screen
8809200	sc200 UV Protection Screen
9218200	SD card reader (USB) for connection to PC
9218100	4 GB SD card



HACH COMPANY World Headquarters: Loveland, Colorado USA

United States:	800-227-4224 tel	970-669-2932 fax	orders@hach.com
Outside United States:	970-669-3050 tel	970-461-3939 fax	int@hach.com
hach.com			

LIT2665 Rev 7

K13 Printed in U.S.A.

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In the interest of improving and updating its equipment,

Hach Company reserves the right to alter specifications to equipment at any time.



Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

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Sulfuric Acid, 3M

SECTION 1 : Identification of the substance/mixture and of the supplier

Product name : Sulfuric Acid, 3M

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: S25899

Recommended uses of the product and uses restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331

Supplier Details:

Fisher Science Education
15 Jet View Drive, Rochester, NY 14624

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2 : Hazards identification

Classification of the substance or mixture:



Health hazard

Skin corrosion, category 1A
Serious eye damage, category 1

Corrosive to metals, category 1

skin corr./irrit. 1A

Corrosive to metals. 1

Eye corr. 1

Signal word : Danger

Hazard statements:

May be corrosive to metals

Causes severe skin burns and eye damage

Causes serious eye damage

Precautionary statements:

If medical advice is needed, have product container or label at hand

Keep out of reach of children

Read label before use

Wear protective gloves/protective clothing/eye protection/face protection

Wash ... thoroughly after handling

Do not breathe dust/fume/gas/mist/vapours/spray

Keep only in original container

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.
Continue rinsing

Immediately call a POISON CENTER or doctor/physician

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

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Sulfuric Acid, 3M

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
Specific treatment (see ... on this label)
Absorb spillage to prevent material damage
Store locked up
Dispose of contents/container to ...

Other Non-GHS Classification:

WHMIS



NFPA/HMIS



NFPA SCALE (0-4)

Health	3
Flammability	0
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

SECTION 3 : Composition/information on ingredients

Ingredients:		
CAS 7664-93-9	Sulfuric Acid, ACS	31.004 %
CAS 7732-18-5	Water	68.996 %
Percentages are by weight		

SECTION 4 : First aid measures

Description of first aid measures

After inhalation: Loosen clothing as necessary and position individual in a comfortable position. Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Get medical assistance if cough or other symptoms appear.

After skin contact: Rinse/flush exposed skin gently using soap and water for 15-20 minutes. Seek medical advice if discomfort or irritation persists.

After eye contact: Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

After swallowing: Rinse mouth thoroughly. Do not induce vomiting. Seek medical attention if irritation, discomfort, or vomiting persists.

Most important symptoms and effects, both acute and delayed:

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Sulfuric Acid, 3M

Irritation.Headache.Nausea.Shortness of breath.;

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

SECTION 5 : Firefighting measures

Extinguishing media

Suitable extinguishing agents: Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

For safety reasons unsuitable extinguishing agents:

Special hazards arising from the substance or mixture:

Thermal decomposition can lead to release of irritating gases and vapors.

Advice for firefighters:

Protective equipment: Wear protective eyewear, gloves, and clothing. Refer to Section 8.Use NIOSH-approved respiratory protection/breathing apparatus.

Additional information (precautions): Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

SECTION 6 : Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation.Ensure that air-handling systems are operational.

Environmental precautions:

Should not be released into environment.Prevent from reaching drains, sewer, or waterway.

Methods and material for containment and cleaning up:

Wear protective eyewear, gloves, and clothing. Refer to Section 8.Always obey local regulations.Containerize for disposal. Refer to Section 13.If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Keep in suitable closed containers for disposal.

Reference to other sections:

SECTION 7 : Handling and storage

Precautions for safe handling:

Avoid contact with skin, eyes, and clothing.Follow good hygiene procedures when handling chemical materials. Refer to Section 8.Follow proper disposal methods. Refer to Section 13.Do not eat, drink, smoke, or use personal products when handling chemical substances.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from food and beverages.Protect from freezing and physical damage.Provide ventilation for containers. Keep container tightly sealed.Store away from incompatible materials.

SECTION 8 : Exposure controls/personal protection



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Sulfuric Acid, 3M

Control Parameters:	7664-93-9, Sulfuric Acid, ACS, OSHA PEL: 1mg/m3 7664-93-9, Sulfuric Acid, ACS, ACGIH TLV: 1 mg/m3
Appropriate Engineering controls:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.
Respiratory protection:	Not required under normal conditions of use. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.
Protection of skin:	Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.
Eye protection:	Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses or goggles are appropriate eye protection.
General hygienic measures:	Perform routine housekeeping. Wash hands before breaks and at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing wash contaminated clothing.

SECTION 9 : Physical and chemical properties

Appearance (physical state,color):	Clear, colorless liquid.	Explosion limit lower: Explosion limit upper:	Not Determined Not Determined
Odor:	Odorless	Vapor pressure:	<0.00120mmHg
Odor threshold:	Not Determined	Vapor density:	Not Determined
pH-value:	< 0.03	Relative density:	Not Determined
Melting/Freezing point:	11C	Solubilities:	Miscible
Boiling point/Boiling range:	105 - 325C	Partition coefficient (n-octanol/water):	Not Determined
Flash point (closed cup):	Not Determined	Auto/Self-ignition temperature:	Not Determined
Evaporation rate:	Not Determined	Decomposition temperature:	Not Determined
Flammability (solid,gaseous):	Not Determined	Viscosity:	a. Kinematic: Not Determined b. Dynamic: Not Determined
Density: Not Determined			

SECTION 10 : Stability and reactivity

Reactivity: Nonreactive under normal conditions.

Chemical stability: Stable under normal conditions.

Possible hazardous reactions: None under normal processing.

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Sulfuric Acid, 3M

Conditions to avoid:Incompatible materials.

Incompatible materials:Organics. Metals. Chlorates. Alkalines. Carbides. Fulminates. Reducing agents. Nitrates. Acetic acid. Oxidizing agents

Hazardous decomposition products:Oxides of sulfur.

SECTION 11 : Toxicological information

Acute Toxicity:		
Inhalation:	510 mg/m ³ 2 h	Inhalation LC50 Rat
Oral:	2140 mg/kg	Oral LD50 Rat
Chronic Toxicity: No additional information.		
Corrosion Irritation: No additional information.		
Sensitization:	No additional information.	
Single Target Organ (STOT):	No additional information.	
Numerical Measures:	No additional information.	
Carcinogenicity:	No additional information.	
Mutagenicity:	No additional information.	
Reproductive Toxicity:	No additional information.	

SECTION 12 : Ecological information

Ecotoxicity

Freshwater Fish: 96 Hr LC50 Brachydanio rerio: >500 mg/L [static]

Fish: LC50 - Gambusia affinis (Mosquito fish) - 42 mg/l - 96 h

Invertebrates: EC50 - Daphnia magna (Water flea) - 29 mg/l - 24 h

Persistence and degradability:

Bioaccumulative potential:

Mobility in soil:

Other adverse effects:

SECTION 13 : Disposal considerations

Waste disposal recommendations:

Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

SECTION 14 : Transport information

UN-Number

1830

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Sulfuric Acid, 3M

UN proper shipping name

Sulfuric Acid Solution

Transport hazard class(es)



Class:

8 Corrosive substances

Packing group:II

Environmental hazard:

Transport in bulk:

Special precautions for user:

SECTION 15 : Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Acute, Chronic

SARA Section 313 (Specific toxic chemical listings):

7664-93-9 Sulfuric Acid

RCRA (hazardous waste code):

None of the ingredients is listed

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

7664-93-9 Sulfuric Acid 1000 lbs

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed

Chemicals known to cause developmental toxicity:

None of the ingredients is listed

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%):

None of the ingredients is listed

SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

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Sulfuric Acid, 3M

SDS contains all the information required by the Controlled Products Regulations. Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases:

Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

PNEC: Predicted No-Effect Concentration (REACH)

CFR: Code of Federal Regulations (USA)

SARA: Superfund Amendments and Reauthorization Act (USA)

RCRA: Resource Conservation and Recovery Act (USA)

TSCA: Toxic Substances Control Act (USA)

NPRI: National Pollutant Release Inventory (Canada)

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

Effective date : 02.15.2015

Last updated : 03.19.2015

Appendix B

Receiving Water Laboratory Data Report



111 Herrick Street, Merrimack, NH 03054
TEL: (603) 424-2022 • FAX: (603) 429-8496
www.amrolabs.com

September 25, 2017

ANALYTICAL TEST RESULTS

Molly Greer
GEI Consultants, Inc.
400 Unicorn Park Drive
Woburn, MA 01801
TEL: (781) 721-4000
FAX: (781) 721-4073

Subject: 1700396 MPA Berth 10 Final Design

Workorder No.: 1708044

Dear Molly Greer:

AMRO Environmental Laboratories Corp. received 2 samples on 8/30/2017 for the analyses presented in the following report.

AMRO is accredited in accordance with NELAC and certifies that these test results meet all the requirements of NELAC, where applicable, unless otherwise noted in the case narrative.

The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt. Please be advised that any unused sample volume and sample extracts will be stored for a period of 60 days from sample receipt date (90 days for samples from New York). After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This report consists of a total of 73 pages. This letter is an integral part of your data report. All results in this project relate only to the sample(s) as received by the laboratory and documented in the Chain-of-Custody. This report shall not be reproduced except in full, without the written approval of the laboratory. If you have any questions regarding this project in the future, please refer to the Workorder Number above.

Sincerely,

Nancy Stewart
Vice President

State Certifications: NH (NELAC): 1001, MA: M-NH012, CT: PH-0758, NY: 11278 (NELAC), ME: NH012 and 1001.

Hard copy of the State Certification is available upon request.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design
Lab Order: 1708044
Date Received: 8/30/2017

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date	Collection Time
1708044-01A	1700396-WE-2	8/30/2017	10:30 AM
1708044-01B	1700396-WE-2	8/30/2017	10:30 AM
1708044-01C	1700396-WE-2	8/30/2017	10:30 AM
1708044-01D	1700396-WE-2	8/30/2017	10:30 AM
1708044-01E	1700396-WE-2	8/30/2017	10:30 AM
1708044-01F	1700396-WE-2	8/30/2017	10:30 AM
1708044-01G	1700396-WE-2	8/30/2017	10:30 AM
1708044-01H	1700396-WE-2	8/30/2017	10:30 AM
1708044-01I	1700396-WE-2	8/30/2017	10:30 AM
1708044-02A	1700396-SW-1	8/30/2017	12:00 PM
1708044-02B	1700396-SW-1	8/30/2017	12:00 PM
1708044-02C	1700396-SW-1	8/30/2017	12:00 PM
1708044-02D	1700396-SW-1	8/30/2017	12:00 PM
1708044-02E	1700396-SW-1	8/30/2017	12:00 PM
1708044-02F	1700396-SW-1	8/30/2017	12:00 PM
1708044-02G	1700396-SW-1	8/30/2017	12:00 PM
1708044-02H	1700396-SW-1	8/30/2017	12:00 PM
1708044-02I	1700396-SW-1	8/30/2017	12:00 PM

AMRO Environmental Laboratories Corp.

25-Sep-17

Lab Order: 1708044
 Client: GEI Consultants, Inc.
 Project: 1700396 MPA Berth 10 Final Desi

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Analytical Test Name Preparatory Test Name	Prep Date	Analysis Date Batch ID	TCLP Date
1708044-01A	1700396-WE-2	8/30/2017 10:30:00 AM	Groundwater	EPA 8260C VOLATILES by GC/MS EPA 5030B	8/30/2017	9/5/2017 R59921	
1708044-01B				EPA 8082A PCBs IN WATER EPA 3510 AQPREP SEP FUNNEL: PCB	9/5/2017	9/7/2017 27482	
				EPA 8270D SEMIVOLATILE ORGANICS, Aqueous EPA 3510 AQPREP SEP FUNNEL: BNA	8/31/2017	9/5/2017 27476	
				PAH BY EPA 8270D SIM	8/31/2017	9/6/2017 27476	
1708044-01C				TPH, EPA 1664A	8/31/2017	9/12/2017 R59950	
1708044-01D				SM 4500G Chlorine, Total Residual (modified)	8/31/2017	8/31/2017 R59941	
				Standard Methods - Total Suspended Solids	8/31/2017	8/31/2017 R59918	
1708044-01E				EPA 7196 HEXAVALENT CHROMIUM	8/31/2017	8/31/2017 R59951	
1708044-01F				EPA 7196 HEXA VALENT CHROMIUM	8/31/2017	8/31/2017 R59951	
1708044-01G				Standard Methods - Cyanide, Total	9/11/2017	9/11/2017 R59946	
1708044-01H				EPA 200.7 ICP METALS, TOTAL 200 Series Prep: ICP/GFAA	8/31/2017	9/1/2017 27472	
				EPA 200.7 ICP METALS, TOTAL	8/31/2017	9/1/2017 27472	

AMRO Environmental Laboratories Corp.

25-Sep-17

Lab Order: 1708044
 Client: GEI Consultants, Inc.
 Project: 1700396 MPA Berth 10 Final Desi

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Analytical Test Name	Prep Date	Batch ID	Analysis Date	TCLP Date
1708044-01H	1700396-WE-2	8/30/2017 10:30:00 AM	Groundwater	EPA 200.9 ARSENIC, Total	8/31/2017	27472	9/6/2017	
				200 Series Prep: ICP/GFAA				
				EPA 200.9 LEAD, Total	8/31/2017	27472	9/6/2017	
				EPA 200.9 SELENIUM, Total	8/31/2017	27472	9/5/2017	
				EPA 200.9 ANTIMONY, Total	8/31/2017	27472	9/5/2017	
				EPA 245.1 MERCURY, Total	8/31/2017	27472	9/6/2017	
				MERCURY PREP: EPA 245.1/7040	9/5/2017	27477		
				Standard Methods - Ammonia as Nitrogen			9/11/2017	
						RS9945		
1708044-02A	1700396-SW-1	8/30/2017 12:00:00 PM		EPA 8260C VOLATILES by GC/MS	8/30/2017	R59921	9/5/2017	
				EPA 5030B				
1708044-02B				EPA 8082A PCBs IN WATER	9/7/2017		9/7/2017	
				EPA 3510 AQPREP SEP FUNNEL: PCB	9/5/2017	27482		
				EPA 8270D SEMIVOLATILE ORGANICS, Aqueous			9/5/2017	
				EPA 3510 AQPREP SEP FUNNEL: BNA	8/31/2017	27476		
				PAH BY EPA 8270D SIM			9/6/2017	
					8/31/2017	27476		
1708044-02C				TPH, EPA 1664A			9/12/2017	
						RS9950		
1708044-02D				SM 4500G Chlorine, Total Residual (modified)			8/31/2017	
						R59941		

AMRO Environmental Laboratories Corp.

25-Sep-17

Lab Order: 1708044
 Client: GEI Consultants, Inc.
 Project: 1700396 MPA Berth 10 Final Desi

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Analytical Test Name	Preparatory Test Name	Prep Date	Batch ID	Analysis Date	TCLP Date
1708044-02D	1700396-SW-1	8/30/2017 12:00:00 PM	Groundwater	Standard Methods - Total Suspended Solids			8/31/2017		
1708044-02E				EPA 7196 HEXAVALENT CHROMIUM			R59918	8/31/2017	
1708044-02F				EPA 7196 HEXAVALENT CHROMIUM			R59951	8/31/2017	
1708044-02G				Standard Methods - Cyanide, Total			9/11/2017		
1708044-02H				EPA 200.7 ICP METALS, TOTAL			R59946	9/11/2017	
				200 Series Prep: ICP/GFAA		8/31/2017	27472		
				EPA 200.7 ICP METALS, TOTAL			9/1/2017		
						8/31/2017	27472		
				EPA 200.9 ARSENIC, Total			9/6/2017		
						8/31/2017	27472		
				EPA 200.9 LEAD, Total			9/6/2017		
						8/31/2017	27472		
				EPA 200.9 SELENIUM, Total			9/5/2017		
						8/31/2017	27472		
				EPA 200.9 ANTIMONY, Total			9/5/2017		
						8/31/2017	27472		
				EPA 245.1 MERCURY, Total			9/6/2017		
				MERCURY PREP: EPA 245.1/7040		9/5/2017	27477		
1708044-02I				Standard Methods - Ammonia as Nitrogen			9/11/2017		
							R59945		

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AMRO ID: 1708044

* = if the laboratory preserves the drinking water sample (s) for EPA Method 200 series, sample (s) should be held at least 16 hours prior to analysis or 24 hours for water sample (s).

pH Checked By: _____ Date: _____ pH adj. (16 or 24hrs) By: _____ Date: _____

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design
Lab Order: 1708044

CASE NARRATIVE**GC/MS VOLATILES- 8260C:**

1. A Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) were performed on 09/05/17 on V-3 (Batch ID: R59921). All %Rs and RPDs were within the laboratory control limits with the following exception(s):

- 1.1 The %R for 1 analyte out of 67 analytes in the LCS were outside the control limits.
- 1.2 The %R for 2 analytes out of 67 analytes in the LCSD were outside the control limits.
- 1.3 The RPD for 2 analytes out of 67 analytes were outside the control limits.

2. A Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample 1700396-WE-2 (1708044-01). All %Rs and RPDs were within the laboratory control limits with the following exception(s):

- 2.1 The RPD for 1 analyte out of 67 analytes was outside the control limits.

3. No analytical or quality issues were noted, other than those described above or in the Data Comment page.

GC/MS SEMIVOLATILES- 8270D:

1. A Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) were performed on 09/05/17 on SV-4 (Batch ID: 27476). All %Rs and RPDs were within the laboratory control limits with the following exception(s):

- 1.1 The %R for 5 analytes out of 67 analytes in the LCS were outside the control limits.
- 1.2 The %R for 4 analytes out of 67 analytes in the LCSD were outside the control limits.
- 1.3 The RPD for 1 analyte out of 67 analytes was outside the control limits.

2. No analytical or quality issues were noted, other than those described above or in the Data Comment page.

GC/MS SEMIVOLATILES- 8270D-SIM:

1. No analytical or quality issues were noted, other than those described in the Data Comment page.

GC/ECD-PCBs-8082A:

1. No analytical or quality issues were noted, other than those described in the Data Comment page.

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design
Lab Order: 1708044

CASE NARRATIVE

METALS:

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample 1700396-SW-1 (1708044-02). All %Rs and RPDs were within the laboratory control limits with the following exception(s):

1.1 Arsenic recovered above the control limits in the MS. However, in the MSD was within control limits .

1.2 Lead recovered below the control limits in both MS and MSD.

1.3 Selenium was not recovered in both MS and MSD

2. No analytical or quality issues were noted, other than those described above or in the Data Comment page.

WET CHEMISTRY:

1. The samples for Total Residual Chlorine were received past holding time.

2. A Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample 1700396-WE-2 (1708044-01) for Cyanide analysis. MS %R was below laboratory control limits.

3. No analytical or quality issues were noted, other than those described above or in the Data Comment page.

SUB-CONTRACTED

1. Some analyses in this project were sub-contracted to another laboratory. Please see the sample receipt checklist for details and the sub-contract lab report for their certification status. AMRO does not transcribe data from another lab. A copy of the subcontract lab report is included in this report. AMRO keeps the original report on file with this work order.

DATA COMMENT PAGE

Organic Data Qualifiers

ND	Indicates compound was analyzed for, but not detected at or above the reporting limit.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than the method detection limit.
H	Method prescribed holding time exceeded.
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
B	This flag is used when the analyte is found in the associated blank as well as in the sample.
R	RPD outside accepted recovery limits
RL	Reporting limit; defined as the lowest concentration the laboratory can accurately quantitate.
S	Spike Recovery outside accepted recovery limits.
#	See Case Narrative
Q	RPD between signal 1 and signal 2 >40%.

Micro Data Qualifiers

TNTC	Too numerous to count
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Inorganic Data Qualifiers

ND or U	Indicates element was analyzed for, but not detected at or above the reporting limit.
J	Indicates a value greater than or equal to the method detection limit, but less than the quantitation limit.
H	Indicates analytical holding time exceedance.
B	Indicates that the analyte is found in the associated blank, as well as in the sample.
MSA	Indicates value determined by the Method of Standard Addition
+	Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
R	RPD outside accepted recovery limits
RL	Reporting limit; defined as the lowest concentration the laboratory can accurately quantitate.
S	Spike Recovery outside accepted recovery limits.
PS	The analyte was below the Reporting Limit but has significant matrix interference as noted by the poor recovery of the Post Digestion Spike.
#	See Case Narrative
*	MCL Exceeded

Report Comments:

1. Soil, sediment and sludge sample results are reported on a "dry weight" basis.
2. Reporting limits are adjusted for sample size used, dilutions and moisture content, if applicable.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Client Sample ID: 1700396-WE-2

Lab Order: 1708044

Collection Date: 8/30/2017 10:30:00 AM

Project: 1700396 MPA Berth 10 Final Design

Matrix: GROUNDWATER

Lab ID: 1708044-01A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8260C VOLATILES BY GC/MS		SW8260C		Analyst: JK		
1,4-Dioxane	ND	50		µg/L	1	9/5/2017 2:50:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
Chloromethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Vinyl chloride	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Chloroethane	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
Bromomethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Trichlorofluoromethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Diethyl ether	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
Acetone	ND	10		µg/L	1	9/5/2017 2:50:00 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	9/5/2017 2:50:00 PM
Carbon disulfide	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Methylene chloride	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
Methyl tert-butyl ether	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
trans-1,2-Dichloroethene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,1-Dichloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Tertiary Butanol	ND	20		µg/L	1	9/5/2017 2:50:00 PM
2-Butanone	ND	10		µg/L	1	9/5/2017 2:50:00 PM
Diisopropyl ether	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
cis-1,2-Dichloroethene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Ethyl Tertiary Butyl Ether	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Chloroform	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Tetrahydrofuran	ND	10		µg/L	1	9/5/2017 2:50:00 PM
Bromochloromethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,1,1-Trichloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,1-Dichloropropene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Carbon tetrachloride	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2-Dichloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Benzene	ND	1.0		µg/L	1	9/5/2017 2:50:00 PM
Trichloroethene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Bromodichloromethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Dibromomethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Tertiary Amyl Methyl Ether	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	9/5/2017 2:50:00 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/5/2017 2:50:00 PM
Toluene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/5/2017 2:50:00 PM
1,1,2-Trichloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-WE-2**Lab Order:** 1708044**Collection Date:** 8/30/2017 10:30:00 AM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-01A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
2-Hexanone	ND	10		µg/L	1	9/5/2017 2:50:00 PM
1,3-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Tetrachloroethene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Dibromochloromethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Chlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Ethylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
m,p-Xylene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
o-Xylene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Styrene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Bromoform	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Isopropylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Bromobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
n-Propylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
2-Chlorotoluene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
4-Chlorotoluene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
tert-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2,4-Trimethylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
sec-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
4-Isopropyltoluene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,3-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,4-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
n-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Hexachlorobutadiene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Naphthalene	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,3,5-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Surr: Dibromofluoromethane	116	74-138		%REC	1	9/5/2017 2:50:00 PM
Surr: 1,2-Dichloroethane-d4	110	64-138		%REC	1	9/5/2017 2:50:00 PM
Surr: Toluene-d8	110	77-128		%REC	1	9/5/2017 2:50:00 PM
Surr: 4-Bromofluorobenzene	96.6	81-113		%REC	1	9/5/2017 2:50:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-SW-1**Lab Order:** 1708044**Collection Date:** 8/30/2017 12:00:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-02A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8260C VOLATILES BY GC/MS		SW8260C		Analyst: JK		
1,4-Dioxane	ND	50		µg/L	1	9/5/2017 3:27:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
Chloromethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Vinyl chloride	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Chloroethane	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
Bromomethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Trichlorofluoromethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Diethyl ether	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
Acetone	ND	10		µg/L	1	9/5/2017 3:27:00 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	9/5/2017 3:27:00 PM
Carbon disulfide	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Methylene chloride	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
Methyl tert-butyl ether	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
trans-1,2-Dichloroethene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,1-Dichloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Tertiary Butanol	ND	20		µg/L	1	9/5/2017 3:27:00 PM
2-Butanone	ND	10		µg/L	1	9/5/2017 3:27:00 PM
Diisopropyl ether	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
cis-1,2-Dichloroethene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Ethyl Tertiary Butyl Ether	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Chloroform	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Tetrahydrofuran	ND	10		µg/L	1	9/5/2017 3:27:00 PM
Bromochloromethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,1,1-Trichloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,1-Dichloropropene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Carbon tetrachloride	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2-Dichloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Benzene	ND	1.0		µg/L	1	9/5/2017 3:27:00 PM
Trichloroethene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Bromodichloromethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Dibromomethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Tertiary Amyl Methyl Ether	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	9/5/2017 3:27:00 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/5/2017 3:27:00 PM
Toluene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/5/2017 3:27:00 PM
1,1,2-Trichloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-SW-1**Lab Order:** 1708044**Collection Date:** 8/30/2017 12:00:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-02A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
2-Hexanone	ND	10		µg/L	1	9/5/2017 3:27:00 PM
1,3-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Tetrachloroethene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Dibromochloromethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Chlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Ethylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
m,p-Xylene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
o-Xylene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Styrene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Bromoform	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Isopropylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Bromobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
n-Propylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
2-Chlorotoluene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
4-Chlorotoluene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
tert-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2,4-Trimethylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
sec-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
4-Isopropyltoluene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,3-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,4-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
n-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Hexachlorobutadiene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Naphthalene	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,3,5-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Surr: Dibromofluoromethane	118	74-138		%REC	1	9/5/2017 3:27:00 PM
Surr: 1,2-Dichloroethane-d4	108	64-138		%REC	1	9/5/2017 3:27:00 PM
Surr: Toluene-d8	110	77-128		%REC	1	9/5/2017 3:27:00 PM
Surr: 4-Bromofluorobenzene	96.1	81-113		%REC	1	9/5/2017 3:27:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design
QC SUMMARY REPORT
 Method Blank

Sample ID: mb-09/05/17 Batch ID: R59921 Test Code: SW8260C Units: µg/L Analysis Date: 9/5/2017 2:14:00 PM Prep Date: 9/5/2017
 Client ID: Run ID: V-3_170905A SeqNo: 1005280

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
1,4-Dioxane	ND	50	µg/L									
Dichlorodifluoromethane	ND	5.0	µg/L									
Chloromethane	ND	2.0	µg/L									
Vinyl chloride	ND	2.0	µg/L									
Chloroethane	ND	5.0	µg/L									
Bromomethane	ND	2.0	µg/L									
Trichlorofluoromethane	ND	2.0	µg/L									
Diethyl ether	ND	5.0	µg/L									
Acetone	ND	10	µg/L									
1,1-Dichloroethene	ND	1.0	µg/L									
Carbon disulfide	ND	2.0	µg/L									
Methylene chloride	ND	5.0	µg/L									
Methyl tert-butyl ether	ND	2.0	µg/L									
trans-1,2-Dichloroethene	ND	2.0	µg/L									
1,1-Dichloroethane	ND	2.0	µg/L									
Tertiary Butanol	ND	20	µg/L									
2-Butanone	ND	10	µg/L									
Diisopropyl ether	ND	2.0	µg/L									
2,2-Dichloropropane	ND	2.0	µg/L									
cis-1,2-Dichloroethene	ND	2.0	µg/L									
Ethyl Tertiary Butyl Ether	ND	2.0	µg/L									
Chloroform	ND	2.0	µg/L									
Tetrahydrofuran	ND	10	µg/L									
Bromochloromethane	ND	2.0	µg/L									
1,1,1-Trichloroethane	ND	2.0	µg/L									

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits
 R - RPD outside accepted recovery limits
 NA - Not applicable where J values or ND results occur
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

1,1-Dichloropropene	ND	2.0	µg/L
Carbon tetrachloride	ND	2.0	µg/L
1,2-Dichloroethane	ND	2.0	µg/L
Benzene	ND	1.0	µg/L
Trichloroethene	ND	2.0	µg/L
1,2-Dichloropropane	ND	2.0	µg/L
Bromodichloromethane	ND	2.0	µg/L
Dibromomethane	ND	2.0	µg/L
Tertiary Amyl Methyl Ether	ND	2.0	µg/L
4-Methyl-2-pentanone	ND	10	µg/L
cis-1,3-Dichloropropene	ND	1.0	µg/L
Toluene	ND	2.0	µg/L
trans-1,3-Dichloropropene	ND	1.0	µg/L
1,1,2-Trichloroethane	ND	2.0	µg/L
1,2-Dibromoethane	ND	2.0	µg/L
2-Hexanone	ND	10	µg/L
1,3-Dichloropropane	ND	2.0	µg/L
Tetrachloroethene	ND	2.0	µg/L
Dibromochloromethane	ND	2.0	µg/L
Chlorobenzene	ND	2.0	µg/L
1,1,1,2-Tetrachloroethane	ND	2.0	µg/L
Ethylbenzene	ND	2.0	µg/L
m,p-Xylene	ND	2.0	µg/L
o-Xylene	ND	2.0	µg/L
Styrene	ND	2.0	µg/L
Bromoform	ND	2.0	µg/L
Isopropylbenzene	ND	2.0	µg/L
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L
1,2,3-Trichloropropane	ND	2.0	µg/L
Bromobenzene	ND	2.0	µg/L
n-Propylbenzene	ND	2.0	µg/L

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

2-Chlorotoluene	ND	2.0	µg/L
4-Chlorotoluene	ND	2.0	µg/L
1,3,5-Trimethylbenzene	ND	2.0	µg/L
tert-Butylbenzene	ND	2.0	µg/L
1,2,4-Trimethylbenzene	ND	2.0	µg/L
sec-Butylbenzene	ND	2.0	µg/L
4-Isopropyltoluene	ND	2.0	µg/L
1,3-Dichlorobenzene	ND	2.0	µg/L
1,4-Dichlorobenzene	ND	2.0	µg/L
n-Butylbenzene	ND	2.0	µg/L
1,2-Dichlorobenzene	ND	2.0	µg/L
1,2-Dibromo-3-chloropropane	ND	5.0	µg/L
1,2,4-Trichlorobenzene	ND	2.0	µg/L
Hexachlorobutadiene	ND	2.0	µg/L
Naphthalene	ND	5.0	µg/L
1,2,3-Trichlorobenzene	ND	2.0	µg/L
1,3,5-Trichlorobenzene	ND	2.0	µg/L
Surr: Dibromofluoromethane	27.92	2.0	µg/L
Surr: 1,2-Dichloroethane-d4	27.07	2.0	µg/L
Surr: Toluene-d8	27.1	2.0	µg/L
Surr: 4-Bromofluorobenzene	23.85	2.0	µg/L

25	0	112	74	138	0
25	0	108	64	138	0
25	0	108	77	128	0
25	0	95.4	81	113	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: Ics-09/05/17 Batch ID: R59921 Test Code: SW8260C Units: µg/L Analysis Date: 9/5/2017 11:11:00 AM Prep Date: 9/5/2017
Client ID: Run ID: V-3_170905A SeqNo: 1005278

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,4-Dioxane	136	50	µg/L	100	0	136	30	172	0			
Dichlorodifluoromethane	27.36	5.0	µg/L	20	0	137	10	158	0			
Chloromethane	22.22	2.0	µg/L	20	0	111	45	144	0			
Vinyl chloride	24.23	2.0	µg/L	20	0	121	45	140	0			
Chloroethane	22.54	5.0	µg/L	20	0	113	49	140	0			
Bromomethane	27.66	2.0	µg/L	20	0	138	54	149	0			
Trichlorofluoromethane	31.65	2.0	µg/L	20	0	158	71	154	0			
Diethyl ether	24.83	5.0	µg/L	20	0	124	65	142	0			
Acetone	45.62	10	µg/L	40	0	114	10	179	0			
1,1-Dichloroethene	24.66	1.0	µg/L	20	0	123	69	152	0			
Carbon disulfide	16.59	2.0	µg/L	20	0	83	42	149	0			
Methylene chloride	25.37	5.0	µg/L	20	0	127	69	159	0			
Methyl tert-butyl ether	24.93	2.0	µg/L	20	0	125	67	144	0			
trans-1,2-Dichloroethene	22.4	2.0	µg/L	20	0	112	73	149	0			
1,1-Dichloroethane	23.9	2.0	µg/L	20	0	120	74	147	0			
Tertiary Butanol	240.1	20	µg/L	200	0	120	43	162	0			
2-Butanone	36	10	µg/L	40	0	90	16	164	0			
Diisopropyl ether	24.1	2.0	µg/L	20	0	120	63	149	0			
2,2-Dichloropropane	27.4	2.0	µg/L	20	0	137	68	166	0			
cis-1,2-Dichloroethene	24.51	2.0	µg/L	20	0	123	74	141	0			
Ethyl Tertiary Butyl Ether	23.1	2.0	µg/L	20	0	116	70	148	0			
Chloroform	24.3	2.0	µg/L	20	0	122	72	137	0			
Tetrahydrofuran	23.98	10	µg/L	20	0	120	53	149	0			
Bromochloromethane	24.09	2.0	µg/L	20	0	120	76	145	0			
1,1,1-Trichloroethane	25.29	2.0	µg/L	20	0	126	76	138	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

1,1-Dichloropropene	22.61	2.0	µg/L	20	0	113	74	138	0
Carbon tetrachloride	25.19	2.0	µg/L	20	0	126	70	138	0
1,2-Dichloroethane	23.09	2.0	µg/L	20	0	115	74	134	0
Benzene	20.04	1.0	µg/L	20	0	100	69	148	0
Trichloroethene	23.85	2.0	µg/L	20	0	119	74	136	0
1,2-Dichloropropane	23.71	2.0	µg/L	20	0	119	72	137	0
Bromodichloromethane	25.78	2.0	µg/L	20	0	129	74	137	0
Dibromomethane	23.17	2.0	µg/L	20	0	116	75	129	0
Tertiary Amyl Methyl Ether	21.27	2.0	µg/L	20	0	106	72	146	0
4-Methyl-2-pentanone	44.61	10	µg/L	40	0	112	49	138	0
cis-1,3-Dichloropropene	23.25	1.0	µg/L	20	0	116	72	134	0
Toluene	23.76	2.0	µg/L	20	0	119	75	139	0
trans-1,3-Dichloropropene	23.01	1.0	µg/L	20	0	115	64	132	0
1,1,2-Trichloroethane	24.16	2.0	µg/L	20	0	121	73	138	0
1,2-Dibromoethane	22.55	2.0	µg/L	20	0	113	72	136	0
2-Hexanone	34.43	10	µg/L	40	0	86.1	35	138	0
1,3-Dichloropropane	18.61	2.0	µg/L	20	0	93	75	120	0
Tetrachloroethene	19.44	2.0	µg/L	20	0	97.2	77	125	0
Dibromochloromethane	18.41	2.0	µg/L	20	0	92	68	113	0
Chlorobenzene	18.82	2.0	µg/L	20	0	94.1	79	120	0
1,1,1,2-Tetrachloroethane	18.71	2.0	µg/L	20	0	93.6	73	118	0
Ethylbenzene	19.26	2.0	µg/L	20	0	96.3	75	127	0
m,p-Xylene	37.07	2.0	µg/L	40	0	92.7	73	131	0
o-Xylene	18.93	2.0	µg/L	20	0	94.6	73	133	0
Styrene	19.6	2.0	µg/L	20	0	98	69	134	0
Bromoform	14.39	2.0	µg/L	20	0	72	51	112	0
Isopropylbenzene	17.82	2.0	µg/L	20	0	89.1	68	128	0
1,1,2,2-Tetrachloroethane	19.12	2.0	µg/L	20	0	95.6	65	121	0
1,2,3-Trichloropropane	21.73	2.0	µg/L	20	0	109	59	125	0
Bromobenzene	17.56	2.0	µg/L	20	0	87.8	75	120	0
n-Propylbenzene	18.32	2.0	µg/L	20	0	91.6	66	131	0

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits
 R - RPD outside accepted recovery limits
 NA - Not applicable where J values or ND results occur
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.		QC SUMMARY REPORT									
Work Order:	1708044	Laboratory Control Spike									
Project:	1700396 MPA Berth 10 Final Design										
2-Chlorotoluene	18.49	2.0	µg/L	20	0	92.5	68	123	0		
4-Chlorotoluene	18.34	2.0	µg/L	20	0	91.7	69	124	0		
1,3,5-Trimethylbenzene	18.58	2.0	µg/L	20	0	92.9	68	130	0		
tert-Butylbenzene	18.25	2.0	µg/L	20	0	91.2	67	129	0		
1,2,4-Trimethylbenzene	18.41	2.0	µg/L	20	0	92	69	132	0		
sec-Butylbenzene	17.76	2.0	µg/L	20	0	88.8	62	136	0		
4-Isopropyltoluene	18.06	2.0	µg/L	20	0	90.3	65	137	0		
1,3-Dichlorobenzene	19	2.0	µg/L	20	0	95	71	126	0		
1,4-Dichlorobenzene	18.02	2.0	µg/L	20	0	90.1	72	123	0		
n-Butylbenzene	18.38	2.0	µg/L	20	0	91.9	64	138	0		
1,2-Dichlorobenzene	19.51	2.0	µg/L	20	0	97.6	75	124	0		
1,2-Dibromo-3-chloropropane	22.54	5.0	µg/L	20	0	113	48	130	0		
1,2,4-Trichlorobenzene	22.62	2.0	µg/L	20	0	113	61	141	0		
Hexachlorobutadiene	20.76	2.0	µg/L	20	0	104	45	154	0		
Naphthalene	21.37	5.0	µg/L	20	0	107	41	143	0		
1,2,3-Trichlorobenzene	20.95	2.0	µg/L	20	0	105	40	152	0		
1,3,5-Trichlorobenzene	17.95	2.0	µg/L	20	0	89.8	47	155	0		
Surr: Dibromofluoromethane	26.49	2.0	µg/L	25	0	106	74	138	0		
Surr: 1,2-Dichloroethane-d4	26.78	2.0	µg/L	25	0	107	64	138	0		
Surr: Toluene-d8	27.73	2.0	µg/L	25	0	111	77	128	0		
Surr: 4-Bromofluorobenzene	24.82	2.0	µg/L	25	0	99.3	81	113	0		

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	NA - Not applicable where J values or ND results occur
	RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.		

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: lcsd-09/05/17	Batch ID: R59921	Test Code: SW8260C	Units: µg/L	Analysis Date: 9/5/2017 11:53:00 AM	Prep Date: 9/5/2017							
Client ID:		Run ID: V-3_170905A		SeqNo: 1005279								
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
1,4-Dioxane	135.8	50	µg/L	100	0	136	30	172	136	0.184	20	
Dichlorodifluoromethane	29.66	5.0	µg/L	20	0	148	10	158	27.36	8.07	20	
Chloromethane	23.28	2.0	µg/L	20	0	116	45	144	22.22	4.66	20	
Vinyl chloride	22.78	2.0	µg/L	20	0	114	45	140	24.23	6.17	20	
Chloroethane	25.83	5.0	µg/L	20	0	129	49	140	22.54	13.6	20	
Bromomethane	29.08	2.0	µg/L	20	0	145	54	149	27.66	5.01	20	
Trichlorofluoromethane	32.64	2.0	µg/L	20	0	163	71	154	31.65	3.08	20	S
Diethyl ether	25.8	5.0	µg/L	20	0	129	65	142	24.83	3.83	20	
Acetone	49.99	10	µg/L	40	0	125	10	179	45.62	9.14	20	
1,1-Dichloroethene	25.03	1.0	µg/L	20	0	125	69	152	24.66	1.49	20	
Carbon disulfide	16.21	2.0	µg/L	20	0	81	42	149	16.59	2.32	20	
Methylene chloride	29.15	5.0	µg/L	20	0	146	69	159	25.37	13.9	20	
Methyl tert-butyl ether	24.9	2.0	µg/L	20	0	125	67	144	24.93	0.12	20	
trans-1,2-Dichloroethene	23.11	2.0	µg/L	20	0	116	73	149	22.4	3.12	20	
1,1-Dichloroethane	24.54	2.0	µg/L	20	0	123	74	147	23.9	2.64	20	
Tertiary Butanol	276.6	20	µg/L	200	0	138	43	162	240.1	14.2	20	
2-Butanone	46.38	10	µg/L	40	0	116	16	164	36	25.2	20	R
Diisopropyl ether	25.61	2.0	µg/L	20	0	128	63	149	24.1	6.08	20	
2,2-Dichloropropane	24.37	2.0	µg/L	20	0	122	68	166	27.4	11.7	20	
cis-1,2-Dichloroethene	24.69	2.0	µg/L	20	0	123	74	141	24.51	0.732	20	
Ethyl Tertiary Butyl Ether	24.04	2.0	µg/L	20	0	120	70	148	23.1	3.99	20	
Chloroform	24.18	2.0	µg/L	20	0	121	72	137	24.3	0.495	20	
Tetrahydrofuran	25.22	10	µg/L	20	0	126	53	149	23.98	5.04	20	
Bromochloromethane	24.1	2.0	µg/L	20	0	120	76	145	24.09	0.0415	20	
1,1,1-Trichloroethane	25.53	2.0	µg/L	20	0	128	76	138	25.29	0.945	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

Date: 25-Sep-17

Work Order: 1708044

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

1,1-Dichloropropene	24.15	2.0	µg/L	20	0	121	74	138	22.61	6.59	20
Carbon tetrachloride	24.84	2.0	µg/L	20	0	124	70	138	25.19	1.4	20
1,2-Dichloroethane	24.95	2.0	µg/L	20	0	125	74	134	23.09	7.74	20
Benzene	20.59	1.0	µg/L	20	0	103	69	148	20.04	2.71	20
Trichloroethene	24.75	2.0	µg/L	20	0	124	74	136	23.85	3.7	20
1,2-Dichloropropane	24.81	2.0	µg/L	20	0	124	72	137	23.71	4.53	20
Bromodichloromethane	27.66	2.0	µg/L	20	0	138	74	137	25.78	7.04	20
Dibromomethane	25.12	2.0	µg/L	20	0	126	75	129	23.17	8.08	20
Tertiary Amyl Methyl Ether	21.37	2.0	µg/L	20	0	107	72	146	21.27	0.469	20
4-Methyl-2-pentanone	50.5	10	µg/L	40	0	126	49	138	44.61	12.4	20
cis-1,3-Dichloropropene	24.67	1.0	µg/L	20	0	123	72	134	23.25	5.93	20
Toluene	25.78	2.0	µg/L	20	0	129	75	139	23.76	8.16	20
trans-1,3-Dichloropropene	24.9	1.0	µg/L	20	0	125	64	132	23.01	7.89	20
1,1,2-Trichloroethane	25.8	2.0	µg/L	20	0	129	73	138	24.16	6.57	20
1,2-Dibromoethane	25.38	2.0	µg/L	20	0	127	72	136	22.55	11.8	20
2-Hexanone	37.52	10	µg/L	40	0	93.8	35	138	34.43	8.59	20
1,3-Dichloropropane	18.28	2.0	µg/L	20	0	91.4	75	120	18.61	1.79	20
Tetrachloroethene	19.1	2.0	µg/L	20	0	95.5	77	125	19.44	1.76	20
Dibromochloromethane	17.94	2.0	µg/L	20	0	89.7	68	113	18.41	2.59	20
Chlorobenzene	18.3	2.0	µg/L	20	0	91.5	79	120	18.82	2.8	20
1,1,1,2-Tetrachloroethane	18.4	2.0	µg/L	20	0	92	73	118	18.71	1.67	20
Ethylbenzene	18.73	2.0	µg/L	20	0	93.6	75	127	19.26	2.79	20
m,p-Xylene	35.97	2.0	µg/L	40	0	89.9	73	131	37.07	3.01	20
o-Xylene	18.26	2.0	µg/L	20	0	91.3	73	133	18.93	3.6	20
Styrene	19.31	2.0	µg/L	20	0	96.6	69	134	19.6	1.49	20
Bromoform	14.67	2.0	µg/L	20	0	73.4	51	112	14.39	1.93	20
Isopropylbenzene	17.01	2.0	µg/L	20	0	85	68	128	17.82	4.65	20
1,1,2,2-Tetrachloroethane	19.27	2.0	µg/L	20	0	96.4	65	121	19.12	0.781	20
1,2,3-Trichloropropane	14.35	2.0	µg/L	20	0	71.8	59	125	21.73	40.9	20
Bromobenzene	17.1	2.0	µg/L	20	0	85.5	75	120	17.56	2.65	20
n-Propylbenzene	16.88	2.0	µg/L	20	0	84.4	66	131	18.32	8.18	20

	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.			

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

2-Chlorotoluene	17.82	2.0	µg/L	20	0	89.1	68	123	18.49	3.69	20
4-Chlorotoluene	18.27	2.0	µg/L	20	0	91.4	69	124	18.34	0.382	20
1,3,5-Trimethylbenzene	18.24	2.0	µg/L	20	0	91.2	68	130	18.58	1.85	20
tert-Butylbenzene	18.08	2.0	µg/L	20	0	90.4	67	129	18.25	0.936	20
1,2,4-Trimethylbenzene	18.36	2.0	µg/L	20	0	91.8	69	132	18.41	0.272	20
sec-Butylbenzene	17.5	2.0	µg/L	20	0	87.5	62	136	17.76	1.47	20
4-Isopropyltoluene	18.06	2.0	µg/L	20	0	90.3	65	137	18.06	0	20
1,3-Dichlorobenzene	18.48	2.0	µg/L	20	0	92.4	71	126	19	2.77	20
1,4-Dichlorobenzene	17.94	2.0	µg/L	20	0	89.7	72	123	18.02	0.445	20
n-Butylbenzene	18.14	2.0	µg/L	20	0	90.7	64	138	18.38	1.31	20
1,2-Dichlorobenzene	18.84	2.0	µg/L	20	0	94.2	75	124	19.51	3.49	20
1,2-Dibromo-3-chloropropane	24	5.0	µg/L	20	0	120	48	130	22.54	6.27	20
1,2,4-Trichlorobenzene	22.35	2.0	µg/L	20	0	112	61	141	22.62	1.2	20
Hexachlorobutadiene	20.36	2.0	µg/L	20	0	102	45	154	20.76	1.95	20
Naphthalene	21.09	5.0	µg/L	20	0	105	41	143	21.37	1.32	20
1,2,3-Trichlorobenzene	21.06	2.0	µg/L	20	0	105	40	152	20.95	0.524	20
1,3,5-Trichlorobenzene	18.11	2.0	µg/L	20	0	90.6	47	155	17.95	0.887	20
Surr: Dibromofluoromethane	28.47	2.0	µg/L	25	0	114	74	138	0	0	0
Surr: 1,2-Dichloroethane-d4	28.47	2.0	µg/L	25	0	114	64	138	0	0	0
Surr: Toluene-d8	30.05	2.0	µg/L	25	0	120	77	128	0	0	0
Surr: 4-Bromofluorobenzene	25.17	2.0	µg/L	25	0	101	81	113	0	0	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-01AMS Batch ID: R59921 Test Code: SW8260C Units: µg/L Analysis Date: 9/5/2017 8:20:00 PM Prep Date: 8/30/2017
Client ID: 1700396-WE-2 Run ID: V-3_170905A SeqNo: 1005276

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qualifier
1,4-Dioxane	1331	500	µg/L	1000	0	133	22	171	0			
Dichlorodifluoromethane	252.8	50	µg/L	200	0	126	10	175	0			
Chloromethane	255	20	µg/L	200	0	128	31	160	0			
Vinyl chloride	243.9	20	µg/L	200	0	122	36	159	0			
Chloroethane	295.7	50	µg/L	200	0	148	44	155	0			
Bromomethane	252.5	20	µg/L	200	0	126	44	157	0			
Trichlorofluoromethane	303.5	20	µg/L	200	0	152	60	170	0			
Diethyl ether	241.2	50	µg/L	200	0	121	59	147	0			
Acetone	502.3	100	µg/L	400	0	126	10	166	0			
1,1-Dichloroethene	246.8	10	µg/L	200	0	123	73	161	0			
Carbon disulfide	164.7	20	µg/L	200	0	82.4	45	156	0			
Methylene chloride	288.9	50	µg/L	200	0	144	69	170	0			
Methyl tert-butyl ether	246.5	20	µg/L	200	0	123	60	144	0			
trans-1,2-Dichloroethene	247.6	20	µg/L	200	0	124	71	158	0			
1,1-Dichloroethane	246.2	20	µg/L	200	0	123	71	158	0			
Tertiary Butanol	2532	200	µg/L	2000	0	127	44	149	0			
2-Butanone	439.1	100	µg/L	400	0	110	12	164	0			
Diisopropyl ether	243.2	20	µg/L	200	0	122	70	156	0			
2,2-Dichloropropane	218.5	20	µg/L	200	0	109	48	161	0			
cis-1,2-Dichloroethene	258.6	20	µg/L	200	0	129	66	155	0			
Ethyl Tertiary Butyl Ether	218.8	20	µg/L	200	0	109	64	155	0			
Chloroform	250.5	20	µg/L	200	0	125	69	147	0			
Tetrahydrofuran	272	100	µg/L	200	0	136	44	149	0			
Bromochloromethane	282.7	20	µg/L	200	0	141	67	157	0			
1,1,1-Trichloroethane	267.9	20	µg/L	200	0	134	70	152	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

1,1-Dichloropropene	252.8	20	µg/L	200	0	126	72	150	0
Carbon tetrachloride	259.9	20	µg/L	200	0	130	68	152	0
1,2-Dichloroethane	242	20	µg/L	200	0	121	62	140	0
Benzene	249.1	10	µg/L	200	0	125	66	153	0
Trichloroethene	254.1	20	µg/L	200	0	127	63	152	0
1,2-Dichloropropane	243.5	20	µg/L	200	0	122	68	145	0
Bromodichloromethane	274.7	20	µg/L	200	0	137	71	142	0
Dibromomethane	250.7	20	µg/L	200	0	125	68	136	0
Tertiary Amyl Methyl Ether	226.4	20	µg/L	200	0	113	67	143	0
4-Methyl-2-pentanone	473.6	100	µg/L	400	0	118	31	144	0
cis-1,3-Dichloropropene	239.6	10	µg/L	200	0	120	59	140	0
Toluene	259.9	20	µg/L	200	0	130	65	155	0
trans-1,3-Dichloropropene	231.1	10	µg/L	200	0	116	52	133	0
1,1,2-Trichloroethane	256.4	20	µg/L	200	0	128	69	142	0
1,2-Dibromoethane	252.6	20	µg/L	200	0	126	68	138	0
2-Hexanone	346	100	µg/L	400	0	86.5	20	136	0
1,3-Dichloropropane	179.9	20	µg/L	200	0	90	64	126	0
Tetrachloroethene	215.2	20	µg/L	200	0	108	62	141	0
Dibromochloromethane	195.7	20	µg/L	200	0	97.8	61	118	0
Chlorobenzene	192.5	20	µg/L	200	0	96.2	75	128	0
1,1,1,2-Tetrachloroethane	191.4	20	µg/L	200	0	95.7	68	124	0
Ethylbenzene	200.7	20	µg/L	200	0	100	68	138	0
m,p-Xylene	396.3	20	µg/L	400	0	99.1	65	141	0
o-Xylene	195.4	20	µg/L	200	0	97.7	68	140	0
Styrene	205.3	20	µg/L	200	0	103	62	144	0
Bromoform	151	20	µg/L	200	0	75.5	44	112	0
Isopropylbenzene	175.1	20	µg/L	200	0	87.6	63	139	0
1,1,2,2-Tetrachloroethane	183.6	20	µg/L	200	0	91.8	50	130	0
1,2,3-Trichloropropane	175.3	20	µg/L	200	0	87.6	45	130	0
Bromobenzene	168	20	µg/L	200	0	84	72	124	0
n-Propylbenzene	182.4	20	µg/L	200	0	91.2	67	138	0

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

NA - Not applicable where J values or ND results occur

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

2-Chlorotoluene	180.7	20	µg/L	200	0	90.4	69	125	0
4-Chlorotoluene	183.3	20	µg/L	200	0	91.7	70	125	0
1,3,5-Trimethylbenzene	191.2	20	µg/L	200	0	95.6	66	134	0
tert-Butylbenzene	167.9	20	µg/L	200	0	84	65	136	0
1,2,4-Trimethylbenzene	188	20	µg/L	200	0	94	63	139	0
sec-Butylbenzene	186.3	20	µg/L	200	0	93.2	62	144	0
4-Isopropyltoluene	191.2	20	µg/L	200	0	95.6	63	142	0
1,3-Dichlorobenzene	181.1	20	µg/L	200	0	90.6	68	129	0
1,4-Dichlorobenzene	175.6	20	µg/L	200	0	87.8	69	127	0
n-Butylbenzene	203.6	20	µg/L	200	0	102	64	142	0
1,2-Dichlorobenzene	193	20	µg/L	200	0	96.5	73	127	0
1,2-Dibromo-3-chloropropane	208.8	50	µg/L	200	0	104	34	131	0
1,2,4-Trichlorobenzene	227	20	µg/L	200	0	114	51	135	0
Hexachlorobutadiene	204.1	20	µg/L	200	0	102	38	151	0
Naphthalene	213	50	µg/L	200	0	106	22	140	0
1,2,3-Trichlorobenzene	207.2	20	µg/L	200	0	104	27	142	0
1,3,5-Trichlorobenzene	181.1	20	µg/L	200	0	90.6	48	147	0
Surr: Dibromofluoromethane	297.2	20	µg/L	250	0	119	74	138	0
Surr: 1,2-Dichloroethane-d4	265.4	20	µg/L	250	0	106	64	138	0
Surr: Toluene-d8	286.8	20	µg/L	250	0	115	77	128	0
Surr: 4-Bromofluorobenzene	251.8	20	µg/L	250	0	101	81	113	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: 17004044-01AMSD Batch ID: R59921 Test Code: SW8260C Units: µg/L Analysis Date: 9/5/2017 8:55:00 PM Prep Date: 8/30/2017
Client ID: 1700396-WE-2 Run ID: V-3_170905A SeqNo: 1005277

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
1,4-Dioxane	1264	500	µg/L	1000	0	126	22	171	1331	5.14	20	
Dichlorodifluoromethane	206.5	50	µg/L	200	0	103	10	175	252.8	20.2	20	R
Chloromethane	224	20	µg/L	200	0	112	31	160	255	12.9	20	
Vinyl chloride	244.3	20	µg/L	200	0	122	36	159	243.9	0.164	20	
Chloroethane	243.3	50	µg/L	200	0	122	44	155	295.7	19.4	20	
Bromomethane	244.4	20	µg/L	200	0	122	44	157	252.5	3.26	20	
Trichlorofluoromethane	291.3	20	µg/L	200	0	146	60	170	303.5	4.1	20	
Diethyl ether	246.1	50	µg/L	200	0	123	59	147	241.2	2.01	20	
Acetone	506.9	100	µg/L	400	0	127	10	166	502.3	0.912	20	
1,1-Dichloroethene	254.5	10	µg/L	200	0	127	73	161	246.8	3.07	20	
Carbon disulfide	164.2	20	µg/L	200	0	82.1	45	156	164.7	0.304	20	
Methylene chloride	294.5	50	µg/L	200	0	147	69	170	288.9	1.92	20	
Methyl tert-butyl ether	240.9	20	µg/L	200	0	120	60	144	246.5	2.3	20	
trans-1,2-Dichloroethene	245.5	20	µg/L	200	0	123	71	158	247.6	0.852	20	
1,1-Dichloroethane	252.2	20	µg/L	200	0	126	71	158	246.2	2.41	20	
Tertiary Butanol	2530	200	µg/L	2000	0	126	44	149	2532	0.0632	20	
2-Butanone	445.6	100	µg/L	400	0	111	12	164	439.1	1.47	20	
Diisopropyl ether	254.8	20	µg/L	200	0	127	70	156	243.2	4.66	20	
2,2-Dichloropropane	206.6	20	µg/L	200	0	103	48	161	218.5	5.6	20	
cis-1,2-Dichloroethene	252.3	20	µg/L	200	0	126	66	155	258.6	2.47	20	
Ethyl Tertiary Butyl Ether	226.1	20	µg/L	200	0	113	64	155	218.8	3.28	20	
Chloroform	251.4	20	µg/L	200	0	126	69	147	250.5	0.359	20	
Tetrahydrofuran	283.2	100	µg/L	200	0	142	44	149	272	4.03	20	
Bromochloromethane	282.1	20	µg/L	200	0	141	67	157	282.7	0.212	20	
1,1,1-Trichloroethane	278.3	20	µg/L	200	0	139	70	152	267.9	3.81	20	

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

NA - Not applicable where J values or ND results occur

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

	256.9	20	µg/L	200	0	128	72	150	252.8	1.61	20
1,1-Dichloropropene	256.9	20	µg/L	200	0	128	72	150	252.8	1.61	20
Carbon tetrachloride	278.6	20	µg/L	200	0	139	68	152	259.9	6.95	20
1,2-Dichloroethane	237.3	20	µg/L	200	0	119	62	140	242	1.96	20
Benzene	251.1	10	µg/L	200	0	126	66	153	249.1	0.8	20
Trichloroethene	255.7	20	µg/L	200	0	128	63	152	254.1	0.628	20
1,2-Dichloropropane	248.2	20	µg/L	200	0	124	68	145	243.5	1.91	20
Bromodichloromethane	270.2	20	µg/L	200	0	135	71	142	274.7	1.65	20
Dibromomethane	254.3	20	µg/L	200	0	127	68	136	250.7	1.43	20
Tertiary Amyl Methyl Ether	231.9	20	µg/L	200	0	116	67	143	226.4	2.4	20
4-Methyl-2-pentanone	484.7	100	µg/L	400	0	121	31	144	473.6	2.32	20
cis-1,3-Dichloropropene	243.8	10	µg/L	200	0	122	59	140	239.6	1.74	20
Toluene	272.7	20	µg/L	200	0	136	65	155	259.9	4.81	20
trans-1,3-Dichloropropene	238.5	10	µg/L	200	0	119	52	133	231.1	3.15	20
1,1,2-Trichloroethane	256.1	20	µg/L	200	0	128	69	142	256.4	0.117	20
1,2-Dibromoethane	253.9	20	µg/L	200	0	127	68	138	252.6	0.513	20
2-Hexanone	370.8	100	µg/L	400	0	92.7	20	136	346	6.92	20
1,3-Dichloropropane	185.8	20	µg/L	200	0	92.9	64	126	179.9	3.23	20
Tetrachloroethene	210.5	20	µg/L	200	0	105	62	141	215.2	2.21	20
Dibromochloromethane	199.2	20	µg/L	200	0	99.6	61	118	195.7	1.77	20
Chlorobenzene	198.6	20	µg/L	200	0	99.3	75	128	192.5	3.12	20
1,1,1,2-Tetrachloroethane	194.1	20	µg/L	200	0	97	68	124	191.4	1.4	20
Ethylbenzene	208	20	µg/L	200	0	104	68	138	200.7	3.57	20
m,p-Xylene	399.5	20	µg/L	400	0	99.9	65	141	396.3	0.804	20
o-Xylene	199.7	20	µg/L	200	0	99.8	68	140	195.4	2.18	20
Styrene	212.6	20	µg/L	200	0	106	62	144	205.3	3.49	20
Bromoforn	152.3	20	µg/L	200	0	76.2	44	112	151	0.857	20
Isopropylbenzene	182.9	20	µg/L	200	0	91.5	63	139	175.1	4.36	20
1,1,2,2-Tetrachloroethane	180.1	20	µg/L	200	0	90	50	130	183.6	1.92	20
1,2,3-Trichloropropane	182.7	20	µg/L	200	0	91.4	45	130	175.3	4.13	20
Bromobenzene	174.5	20	µg/L	200	0	87.2	72	124	168	3.8	20
n-Propylbenzene	191.2	20	µg/L	200	0	95.6	67	138	182.4	4.71	20

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

2-Chlorotoluene	185.7	20	µg/L	200	0	92.8	69	125	180.7	2.73	20
4-Chlorotoluene	189.8	20	µg/L	200	0	94.9	70	125	183.3	3.48	20
1,3,5-Trimethylbenzene	198	20	µg/L	200	0	99	66	134	191.2	3.49	20
tert-Butylbenzene	173.8	20	µg/L	200	0	86.9	65	136	167.9	3.45	20
1,2,4-Trimethylbenzene	198.1	20	µg/L	200	0	99	63	139	188	5.23	20
sec-Butylbenzene	193.4	20	µg/L	200	0	96.7	62	144	186.3	3.74	20
4-Isopropyltoluene	201.7	20	µg/L	200	0	101	63	142	191.2	5.34	20
1,3-Dichlorobenzene	188	20	µg/L	200	0	94	68	129	181.1	3.74	20
1,4-Dichlorobenzene	184.1	20	µg/L	200	0	92	69	127	175.6	4.73	20
n-Butylbenzene	209.5	20	µg/L	200	0	105	64	142	203.6	2.86	20
1,2-Dichlorobenzene	199.2	20	µg/L	200	0	99.6	73	127	193	3.16	20
1,2-Dibromo-3-chloropropane	223.1	50	µg/L	200	0	112	34	131	208.8	6.62	20
1,2,4-Trichlorobenzene	240.6	20	µg/L	200	0	120	51	135	227	5.82	20
Hexachlorobutadiene	231.3	20	µg/L	200	0	116	38	151	204.1	12.5	20
Naphthalene	225.7	50	µg/L	200	0	113	22	140	213	5.79	20
1,2,3-Trichlorobenzene	220.7	20	µg/L	200	0	110	27	142	207.2	6.31	20
1,3,5-Trichlorobenzene	188.7	20	µg/L	200	0	94.4	48	147	181.1	4.11	20
Surr: Dibromofluoromethane	297.5	20	µg/L	250	0	119	74	138	0	0	0
Surr: 1,2-Dichloroethane-d4	256	20	µg/L	250	0	102	64	138	0	0	0
Surr: Toluene-d8	278.3	20	µg/L	250	0	111	77	128	0	0	0
Surr: 4-Bromofluorobenzene	255	20	µg/L	250	0	102	81	113	0	0	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 NA - Not applicable where J values or ND results occur

B - Analyte detected in the associated Method Blank

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-WE-2**Lab Order:** 1708044**Collection Date:** 8/30/2017 10:30:00 AM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-01B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8270D SEMIVOLATILE ORGANICS		SW8270D				Analyst: NS
Phenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2-Chlorophenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzyl alcohol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
2-Methylphenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Methylphenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Hexachloroethane	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Nitrobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Isophorone	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzoic acid	ND	21		µg/L	1	9/5/2017 7:10:00 PM
2-Nitrophenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Naphthalene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Chloroaniline	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Chloro-3-methylphenol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:10:00 PM
Dimethyl phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Acenaphthylene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
3-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:10:00 PM
4-Nitrophenol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
2,4-Dinitrophenol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
Acenaphthene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Dibenzofuran	ND	10		µg/L	1	9/5/2017 7:10:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-WE-2**Lab Order:** 1708044**Collection Date:** 8/30/2017 10:30:00 AM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-01B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Fluorene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:10:00 PM
4,6-Dinitro-2-methylphenol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	9/5/2017 7:10:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Hexachlorobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Pentachlorophenol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
Phenanthrene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Anthracene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Carbazole	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Fluoranthene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Pyrene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
3,3'-Dichlorobenzidine	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benz(a)anthracene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Chrysene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Surr: 2-Fluorophenol	41.2	25-62		%REC	1	9/5/2017 7:10:00 PM
Surr: Phenol-d5	35.2	13-43		%REC	1	9/5/2017 7:10:00 PM
Surr: Nitrobenzene-d5	58.0	36-108		%REC	1	9/5/2017 7:10:00 PM
Surr: 2-Fluorobiphenyl	67.0	44-117		%REC	1	9/5/2017 7:10:00 PM
Surr: 2,4,6-Tribromophenol	89.2	39-131		%REC	1	9/5/2017 7:10:00 PM
Surr: 4-Terphenyl-d14	105	44-122		%REC	1	9/5/2017 7:10:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT:	GEI Consultants, Inc.	Client Sample ID:	1700396-SW-1
Lab Order:	1708044	Collection Date:	8/30/2017 12:00:00 PM
Project:	1700396 MPA Berth 10 Final Design	Matrix:	GROUNDWATER
Lab ID:	1708044-02B		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8270D SEMIVOLATILE ORGANICS		SW8270D				Analyst: NS
Phenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2-Chlorophenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzyl alcohol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
2-Methylphenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Methylphenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Hexachloroethane	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Nitrobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Isophorone	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzoic acid	ND	21		µg/L	1	9/5/2017 7:34:00 PM
2-Nitrophenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Naphthalene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Chloroaniline	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Chloro-3-methylphenol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:34:00 PM
Dimethyl phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Acenaphthylene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
3-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:34:00 PM
4-Nitrophenol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
2,4-Dinitrophenol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
Acenaphthene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Dibenzofuran	ND	10		µg/L	1	9/5/2017 7:34:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Client Sample ID: 1700396-SW-1

Lab Order: 1708044

Collection Date: 8/30/2017 12:00:00 PM

Project: 1700396 MPA Berth 10 Final Design

Matrix: GROUNDWATER

Lab ID: 1708044-02B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Fluorene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:34:00 PM
4,6-Dinitro-2-methylphenol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	9/5/2017 7:34:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Hexachlorobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Pentachlorophenol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
Phenanthrene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Anthracene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Carbazole	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Fluoranthene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Pyrene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
3,3'-Dichlorobenzidine	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benz(a)anthracene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Chrysene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Surr: 2-Fluorophenol	51.4	25-62		%REC	1	9/5/2017 7:34:00 PM
Surr: Phenol-d5	44.3	13-43	S	%REC	1	9/5/2017 7:34:00 PM
Surr: Nitrobenzene-d5	73.8	36-108		%REC	1	9/5/2017 7:34:00 PM
Surr: 2-Fluorobiphenyl	79.6	44-117		%REC	1	9/5/2017 7:34:00 PM
Surr: 2,4,6-Tribromophenol	97.8	39-131		%REC	1	9/5/2017 7:34:00 PM
Surr: 4-Terphenyl-d14	119	44-122		%REC	1	9/5/2017 7:34:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-27476 Batch ID: 27476 Test Code: SW8270D Units: µg/L Analysis Date: 9/5/2017 3:27:00 PM Prep Date: 8/31/2017
 Client ID: Run ID: SV-4_170905A SeqNo: 1005222

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qualifier
Phenol	ND	10	µg/L									
Bis(2-chloroethyl)ether	ND	10	µg/L									
2-Chlorophenol	ND	10	µg/L									
1,3-Dichlorobenzene	ND	10	µg/L									
1,4-Dichlorobenzene	ND	10	µg/L									
Benzyl alcohol	ND	20	µg/L									
2-Methylphenol	ND	10	µg/L									
1,2-Dichlorobenzene	ND	10	µg/L									
Bis(2-chloroisopropyl)ether	ND	10	µg/L									
4-Methylphenol	ND	10	µg/L									
N-Nitrosodi-n-propylamine	ND	10	µg/L									
Hexachloroethane	ND	10	µg/L									
Nitrobenzene	ND	10	µg/L									
Isophorone	ND	10	µg/L									
2,4-Dimethylphenol	ND	10	µg/L									
Benzoic acid	ND	20	µg/L									
2-Nitrophenol	ND	10	µg/L									
Bis(2-chloroethoxy)methane	ND	10	µg/L									
2,4-Dichlorophenol	ND	10	µg/L									
1,2,4-Trichlorobenzene	ND	10	µg/L									
Naphthalene	ND	10	µg/L									
4-Chloroaniline	ND	10	µg/L									
Hexachlorobutadiene	ND	10	µg/L									
4-Chloro-3-methylphenol	ND	20	µg/L									
2-Methylnaphthalene	ND	10	µg/L									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design
 QC SUMMARY REPORT
 Method Blank

Hexachlorocyclopentadiene	ND	10	µg/L
2,4,6-Trichlorophenol	ND	10	µg/L
2,4,5-Trichlorophenol	ND	10	µg/L
2-Chloronaphthalene	ND	10	µg/L
2-Nitroaniline	ND	20	µg/L
Dimethyl phthalate	12.61	10	µg/L
2,6-Dinitrotoluene	ND	10	µg/L
Acenaphthylene	ND	10	µg/L
3-Nitroaniline	ND	20	µg/L
4-Nitrophenol	ND	20	µg/L
2,4-Dinitrophenol	ND	20	µg/L
Acenaphthene	ND	10	µg/L
2,4-Dinitrotoluene	ND	10	µg/L
Dibenzofuran	ND	10	µg/L
Diethyl phthalate	ND	10	µg/L
4-Chlorophenyl phenyl ether	ND	10	µg/L
Fluorene	ND	10	µg/L
4-Nitroaniline	ND	20	µg/L
4,6-Dinitro-2-methylphenol	ND	20	µg/L
N-Nitrosodiphenylamine	ND	10	µg/L
1,2-Diphenylhydrazine (as Azobe	ND	10	µg/L
4-Bromophenyl phenyl ether	ND	10	µg/L
Hexachlorobenzene	ND	10	µg/L
Pentachlorophenol	ND	20	µg/L
Phenanthrene	ND	10	µg/L
Anthracene	ND	10	µg/L
Carbazole	ND	10	µg/L
Di-n-butyl phthalate	ND	10	µg/L
Fluoranthene	ND	10	µg/L
Pyrene	ND	10	µg/L
Butyl benzyl phthalate	ND	10	µg/L

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits
 R - RPD outside accepted recovery limits
 NA - Not applicable where J values or ND results occur
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

Date: 25-Sep-17

QC SUMMARY REPORT

Y REPORT

Method Blank

Method Blank

[illegible]

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	NA - Not applicable where J values or ND results occur
	RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.		

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-27476 Batch ID: 27476 Test Code: SW8270D Units: µg/L Analysis Date: 9/5/2017 3:52:00 PM Prep Date: 8/31/2017
 Client ID: Run ID: SV-4_170905A SeqNo: 1005223

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qualifier
Phenol	26.72	10	µg/L	75	0	35.6	13	47	0			
Bis(2-chloroethyl)ether	40.26	10	µg/L	50	0	80.5	42	102	0			
2-Chlorophenol	58.57	10	µg/L	75	0	78.1	39	110	0			
1,3-Dichlorobenzene	38.91	10	µg/L	50	0	77.8	34	99	0			
1,4-Dichlorobenzene	40.82	10	µg/L	50	0	81.6	35	99	0			
Benzyl alcohol	29.27	20	µg/L	50	0	58.5	31	96	0			
2-Methylphenol	52.5	10	µg/L	75	0	70	35	100	0			
1,2-Dichlorobenzene	39.54	10	µg/L	50	0	79.1	37	99	0			
Bis(2-chloroisopropyl)ether	64.56	10	µg/L	50	0	129	31	104	0			S
4-Methylphenol	62.93	10	µg/L	150	0	42	23	61	0			
N-Nitrosodi-n-propylamine	45.89	10	µg/L	50	0	91.8	43	111	0			
Hexachloroethane	41.74	10	µg/L	50	0	83.5	33	97	0			
Nitrobenzene	44.14	10	µg/L	50	0	88.3	46	102	0			
Isophorone	36.08	10	µg/L	50	0	72.2	38	105	0			
2,4-Dimethylphenol	55.39	10	µg/L	75	0	73.9	38	110	0			J
Benzoic acid	19.68	20	µg/L	75	0	26.2	10	55	0			
2-Nitrophenol	59.27	10	µg/L	75	0	79	44	118	0			
Bis(2-chloroethoxy)methane	42.67	10	µg/L	50	0	85.3	50	106	0			
2,4-Dichlorophenol	64.52	10	µg/L	75	0	86	50	117	0			
1,2,4-Trichlorobenzene	44.21	10	µg/L	50	0	88.4	41	103	0			
Naphthalene	42.25	10	µg/L	50	0	84.5	45	100	0			
4-Chloroaniline	32.4	10	µg/L	50	0	64.8	28	113	0			
Hexachlorobutadiene	46.63	10	µg/L	50	0	93.3	40	101	0			
4-Chloro-3-methylphenol	63.91	20	µg/L	75	0	85.2	47	119	0			
2-Methylnaphthalene	41.61	10	µg/L	50	0	83.2	44	107	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

Date: 25-Sep-17

GEL Consultants, Inc.

1708044

1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Chemical Name	JS		BS		S			
	Concentration (µg/L)	Count	Concentration (µg/L)	Count	Concentration (µg/L)	Count		
Hexachlorocyclopentadiene	4.96	10	50	0	9.92	10	91	0
2,4,6-Trichlorophenol	76.21	10	75	0	102	48	129	0
2,4,5-Trichlorophenol	85.45	10	75	0	114	45	131	0
2-Chloronaphthalene	50.52	10	50	0	101	48	107	0
2-Nitroaniline	58.75	20	50	0	118	44	122	0
Dimethyl phthalate	67.71	10	50	0	135	58	114	0
2,6-Dinitrotoluene	50.91	10	50	0	102	57	115	0
Acenaphthylene	44.96	10	50	0	89.9	52	110	0
3-Nitroaniline	47.31	20	50	0	94.6	50	121	0
4-Nitrophenol	51.98	20	75	0	69.3	14	53	0
2,4-Dinitrophenol	73.39	20	75	0	97.9	19	122	0
Acenaphthene	48.17	10	50	0	96.3	52	110	0
2,4-Dinitrotoluene	52.68	10	50	0	105	59	116	0
Dibenzofuran	48.81	10	50	0	97.6	51	119	0
Diethyl phthalate	51.81	10	50	0	104	57	115	0
4-Chlorophenyl phenyl ether	53.29	10	50	0	107	56	114	0
Fluorene	49.42	10	50	0	98.8	54	115	0
4-Nitroaniline	49.69	20	50	0	99.4	49	119	0
4,6-Dinitro-2-methylphenol	71.45	20	75	0	95.3	40	127	0
N-Nitrosodiphenylamine	41.82	10	50	0	83.6	51	118	0
1,2-Diphenylhydrazine (as Azobenzene)	42.15	10	50	0	84.3	43	118	0
4-Bromophenyl phenyl ether	47.71	10	50	0	95.4	56	115	0
Hexachlorobenzene	50.17	10	50	0	100	56	114	0
Pentachlorophenol	97.53	20	75	0	130	39	128	0
Phenanthrene	46.33	10	50	0	92.7	54	112	0
Anthracene	45.34	10	50	0	90.7	54	113	0
Carbazole	45.51	10	50	0	91	52	120	0
Di-n-butyl phthalate	47.86	10	50	0	95.7	58	114	0
Fluoranthene	51.3	10	50	0	103	58	115	0
Pyrene	46.7	10	50	0	93.4	53	119	0
Butyl benzyl phthalate	45.8	10	50	0	91.6	53	120	0

B - Analyte detected in the associated Method Blank

NA - Not applicable where J values or ND results occur

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

Date: 25-Sep-17

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

[illegible]

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	NA - Not applicable where J values or ND results occur
	RL - Reporting Limit: defined as the lowest concentration the laboratory can accurately quantitate.		

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: LCSD-27476	Batch ID: 27476	Test Code: SW8270D		Units: µg/L	Analysis Date: 9/5/2017 4:16:00 PM		Prep Date: 8/31/2017					
Client ID:	Run ID: SV-4_170905A	SeqNo: 1005224										
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Phenol	25.46	10	µg/L	75	0	33.9	13	47	26.72	4.83	25	
Bis(2-chloroethyl)ether	38.27	10	µg/L	50	0	76.5	42	102	40.26	5.07	25	
2-Chlorophenol	54.66	10	µg/L	75	0	72.9	39	110	58.57	6.91	25	
1,3-Dichlorobenzene	36.95	10	µg/L	50	0	73.9	34	99	38.91	5.17	25	
1,4-Dichlorobenzene	38.66	10	µg/L	50	0	77.3	35	99	40.82	5.44	25	
Benzyl alcohol	26.15	20	µg/L	50	0	52.3	31	96	29.27	11.3	25	
2-Methylphenol	49.15	10	µg/L	75	0	65.5	35	100	52.5	6.59	25	
1,2-Dichlorobenzene	38.41	10	µg/L	50	0	76.8	37	99	39.54	2.9	25	
Bis(2-chloroisopropyl)ether	61.06	10	µg/L	50	0	122	31	104	64.56	5.57	25	S
4-Methylphenol	54.07	10	µg/L	150	0	36	23	61	62.93	15.1	25	
N-Nitrosodi-n-propylamine	41.99	10	µg/L	50	0	84	43	111	45.89	8.88	25	
Hexachloroethane	43.46	10	µg/L	50	0	86.9	33	97	41.74	4.04	25	
Nitrobenzene	42.58	10	µg/L	50	0	85.2	46	102	44.14	3.6	25	
Isophorone	32.65	10	µg/L	50	0	65.3	38	105	36.08	9.98	25	
2,4-Dimethylphenol	52.49	10	µg/L	75	0	70	38	110	55.39	5.38	25	
Benzoic acid	15.65	20	µg/L	75	0	20.9	10	55	19.68	22.8	25	J
2-Nitrophenol	55.22	10	µg/L	75	0	73.6	44	118	59.27	7.07	25	
Bis(2-chloroethoxy)methane	38.91	10	µg/L	50	0	77.8	50	106	42.67	9.22	25	
2,4-Dichlorophenol	60.21	10	µg/L	75	0	80.3	50	117	64.52	6.91	25	
1,2,4-Trichlorobenzene	41.86	10	µg/L	50	0	83.7	41	103	44.21	5.46	25	
Naphthalene	39.39	10	µg/L	50	0	78.8	45	100	42.25	7.01	25	
4-Chloroaniline	30.05	10	µg/L	50	0	60.1	28	113	32.4	7.53	25	
Hexachlorobutadiene	43.87	10	µg/L	50	0	87.7	40	101	46.63	6.1	25	
4-Chloro-3-methylphenol	61.37	20	µg/L	75	0	81.8	47	119	63.91	4.05	25	
2-Methylnaphthalene	38.03	10	µg/L	50	0	76.1	44	107	41.61	8.99	25	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth I0 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Hexachlorocyclopentadiene	4.45	10	µg/L	50	0	8.9	10	91	4.96	10.8	25	JS
2,4,6-Trichlorophenol	74.42	10	µg/L	75	0	99.2	48	129	76.21	2.38	25	
2,4,5-Trichlorophenol	80.22	10	µg/L	75	0	107	45	131	85.45	6.31	25	
2-Chloronaphthalene	46.31	10	µg/L	50	0	92.6	48	107	50.52	8.7	25	
2-Nitroaniline	59.22	20	µg/L	50	0	118	44	122	58.75	0.797	25	
Dimethyl phthalate	64.4	10	µg/L	50	0	129	58	114	67.71	5.01	25	BS
2,6-Dinitrotoluene	48.34	10	µg/L	50	0	96.7	57	115	50.91	5.18	25	
Acenaphthylene	43.22	10	µg/L	50	0	86.4	52	110	44.96	3.95	25	
3-Nitroaniline	46.13	20	µg/L	50	0	92.3	50	121	47.31	2.53	25	
4-Nitrophenol	47.13	20	µg/L	75	0	62.8	14	53	51.98	9.79	25	S
2,4-Dinitrophenol	70.93	20	µg/L	75	0	94.6	19	122	73.39	3.41	25	
Acenaphthene	45.04	10	µg/L	50	0	90.1	52	110	48.17	6.72	25	
2,4-Dinitrotoluene	51.76	10	µg/L	50	0	104	59	116	52.68	1.76	25	
Dibenzofuran	46.83	10	µg/L	50	0	93.7	51	119	48.81	4.14	25	
Diethyl phthalate	50.55	10	µg/L	50	0	101	57	115	51.81	2.46	25	
4-Chlorophenyl phenyl ether	51.92	10	µg/L	50	0	104	56	114	53.29	2.6	25	
Fluorene	48.2	10	µg/L	50	0	96.4	54	115	49.42	2.5	25	
4-Nitroaniline	48.77	20	µg/L	50	0	97.5	49	119	49.69	1.87	25	
4,6-Dinitro-2-methylphenol	67.8	20	µg/L	75	0	90.4	40	127	71.45	5.24	25	
N-Nitrosodiphenylamine	39.67	10	µg/L	50	0	79.3	51	118	41.82	5.28	25	
1,2-Diphenylhydrazine (as Azobe	40.84	10	µg/L	50	0	81.7	43	118	42.15	3.16	25	
4-Bromophenyl phenyl ether	44.85	10	µg/L	50	0	89.7	56	115	47.71	6.18	25	
Hexachlorobenzene	41.1	10	µg/L	50	0	82.2	56	114	50.17	19.9	25	
Pentachlorophenol	88.78	20	µg/L	75	0	118	39	128	97.53	9.39	25	
Phenanthrene	42.98	10	µg/L	50	0	86	54	112	46.33	7.5	25	
Anthracene	42.27	10	µg/L	50	0	84.5	54	113	45.34	7.01	25	
Carbazole	40.56	10	µg/L	50	0	81.1	52	120	45.51	11.5	25	
Di-n-butyl phthalate	41.82	10	µg/L	50	0	83.6	58	114	47.86	13.5	25	
Fluoranthene	44.74	10	µg/L	50	0	89.5	58	115	51.3	13.7	25	
Pyrene	41.36	10	µg/L	50	0	82.7	53	119	46.7	12.1	25	
Butyl benzyl phthalate	40.09	10	µg/L	50	0	80.2	53	120	45.8	13.3	25	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analytic detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth I0 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Bis(2-ethylhexyl)phthalate	41.97	10	µg/L	50	0	83.9	55	122	46.84	11	25
3,3'-Dichlorobenzidine	50.29	10	µg/L	50	0	101	31	126	58.26	14.7	25
Benz(a)anthracene	42.36	10	µg/L	50	0	84.7	53	118	49.14	14.8	25
Chrysene	42.08	10	µg/L	50	0	84.2	56	116	49.5	16.2	25
Di-n-octyl phthalate	40.12	10	µg/L	50	0	80.2	50	124	45.92	13.5	25
Benzo(b)fluoranthene	46.73	10	µg/L	50	0	93.5	55	113	48.2	3.1	25
Benzo(k)fluoranthene	39.8	10	µg/L	50	0	79.6	59	115	54.11	30.5	25
Benzo(a)pyrene	42.21	10	µg/L	50	0	84.4	56	112	49.19	15.3	25
Dibenz(a,h)anthracene	46.93	10	µg/L	50	0	93.9	51	113	51.1	8.51	25
Indeno(1,2,3-cd)pyrene	47.28	10	µg/L	50	0	94.6	51	113	51.69	8.91	25
Benzo(g,h,i)perylene	45.9	10	µg/L	50	0	91.8	50	113	48.84	6.21	25
Surr: 2-Fluorophenol	31.97	1.0	µg/L	75	0	42.6	25	62	0	0	0
Surr: Phenol-d5	20.38	1.0	µg/L	75	0	27.2	13	43	0	0	0
Surr: Nitrobenzene-d5	39.86	1.0	µg/L	50	0	79.7	36	108	0	0	0
Surr: 2-Fluorobiphenyl	42.55	1.0	µg/L	50	0	85.1	44	117	0	0	0
Surr: 2,4,6-Tribromophenol	73.14	1.0	µg/L	75	0	97.5	39	131	0	0	0
Surr: 4-Terphenyl-d14	44.11	1.0	µg/L	50	0	88.2	44	122	0	0	0

R

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 NA - Not applicable where J values or ND results occur

B - Analyte detected in the associated Method Blank

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Client Sample ID: 1700396-WE-2

Lab Order: 1708044

Collection Date: 8/30/2017 10:30:00 AM

Project: 1700396 MPA Berth 10 Final Design

Matrix: GROUNDWATER

Lab ID: 1708044-01B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PAH BY EPA 8270D SIM		SW8270D				Analyst: NS
Naphthalene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
2-Methylnaphthalene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Acenaphthylene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Acenaphthene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Fluorene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Phenanthrene	ND	0.072		µg/L	1	9/6/2017 5:38:00 PM
Anthracene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Fluoranthene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Pyrene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Benz(a)anthracene	ND	0.062		µg/L	1	9/6/2017 5:38:00 PM
Chrysene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Benzo(b)fluoranthene	ND	0.082		µg/L	1	9/6/2017 5:38:00 PM
Benzo(k)fluoranthene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Benzo(a)pyrene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Dibenz(a,h)anthracene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Benzo(g,h,i)perylene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Surr: Nitrobenzene-d5	61.4	33-107		%REC	1	9/6/2017 5:38:00 PM
Surr: 2-Fluorobiphenyl	54.8	39-107		%REC	1	9/6/2017 5:38:00 PM
Surr: 4-Terphenyl-d14	98.0	31-133		%REC	1	9/6/2017 5:38:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-SW-1**Lab Order:** 1708044**Collection Date:** 8/30/2017 12:00:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-02B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PAH BY EPA 8270D SIM		SW8270D				Analyst: NS
Naphthalene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
2-Methylnaphthalene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Acenaphthylene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Acenaphthene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Fluorene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Phenanthrene	ND	0.073		µg/L	1	9/6/2017 6:13:00 PM
Anthracene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Fluoranthene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Pyrene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Benz(a)anthracene	ND	0.062		µg/L	1	9/6/2017 6:13:00 PM
Chrysene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Benzo(b)fluoranthene	ND	0.083		µg/L	1	9/6/2017 6:13:00 PM
Benzo(k)fluoranthene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Benzo(a)pyrene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Dibenz(a,h)anthracene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Benzo(g,h,i)perylene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Surr: Nitrobenzene-d5	71.6	33-107		%REC	1	9/6/2017 6:13:00 PM
Surr: 2-Fluorobiphenyl	63.6	39-107		%REC	1	9/6/2017 6:13:00 PM
Surr: 4-Terphenyl-d14	106	31-133		%REC	1	9/6/2017 6:13:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MIB-27476	Batch ID: 27476	Test Code: SW8270D	Units: µg/L	Analysis Date: 9/6/2017 12:17:00 PM	Prep Date: 8/31/2017
Client ID:	Run ID: SV-4_170906A	SeqNo: 1005251			

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Naphthalene	ND	0.10	µg/L									
2-Methylnaphthalene	ND	0.10	µg/L									
Acenaphthylene	ND	0.10	µg/L									
Acenaphthene	ND	0.10	µg/L									
Fluorene	ND	0.10	µg/L									
Phenanthrene	ND	0.070	µg/L									
Anthracene	ND	0.10	µg/L									
Fluoranthene	ND	0.10	µg/L									
Pyrene	ND	0.10	µg/L									
Benz(a)anthracene	ND	0.060	µg/L									
Chrysene	ND	0.10	µg/L									
Benzo(b)fluoranthene	ND	0.080	µg/L									
Benzo(k)fluoranthene	ND	0.10	µg/L									
Benzo(a)pyrene	ND	0.10	µg/L									
Dibenz(a,h)anthracene	ND	0.10	µg/L									
Indeno(1,2,3-cd)pyrene	ND	0.10	µg/L									
Benzo(g,h,i)perylene	ND	0.10	µg/L									
Surr. Nitrobenzene-d5	7.345	1.0	µg/L	10	0	73.5	33	107	0			
Surr. 2-Fluorobiphenyl	6.5	1.0	µg/L	10	0	65	39	107	0			
Surr. 4-Terphenyl-d14	8.55	1.0	µg/L	10	0	85.5	31	133	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-27476 Batch ID: 27476 Test Code: SW8270D Units: µg/L Analysis Date: 9/6/2017 12:53:00 PM Prep Date: 8/31/2017
Client ID: Run ID: SV-4_170906A SeqNo: 1005252

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Naphthalene	4.125	0.10	µg/L	5	0	82.5	32	113	0			
2-Methylnaphthalene	3.84	0.10	µg/L	5	0	76.8	32	121	0			
Acenaphthylene	4.31	0.10	µg/L	5	0	86.2	38	126	0			
Acenaphthene	4.045	0.10	µg/L	5	0	80.9	38	123	0			
Fluorene	4.515	0.10	µg/L	5	0	90.3	47	127	0			
Phenanthrene	5.12	0.070	µg/L	5	0	102	51	117	0			
Anthracene	4.17	0.10	µg/L	5	0	83.4	52	123	0			
Fluoranthene	5.24	0.10	µg/L	5	0	105	52	125	0			
Pyrene	5.765	0.10	µg/L	5	0	115	48	134	0			
Benz(a)anthracene	5.275	0.060	µg/L	5	0	106	51	125	0			
Chrysene	5.255	0.10	µg/L	5	0	105	52	130	0			
Benzo(b)fluoranthene	5.455	0.080	µg/L	5	0	109	56	129	0			
Benzo(k)fluoranthene	6.035	0.10	µg/L	5	0	121	51	134	0			
Benzo(a)pyrene	5.305	0.10	µg/L	5	0	106	53	129	0			
Dibenz(a,h)anthracene	5.115	0.10	µg/L	5	0	102	52	127	0			
Indeno(1,2,3-cd)pyrene	5.16	0.10	µg/L	5	0	103	53	124	0			
Benzo(g,h,i)perylene	5.17	0.10	µg/L	5	0	103	53	126	0			
Surr: Nitrobenzene-d5	0.96	0.50	µg/L	1	0	96	33	107	0			
Surr: 2-Fluorobiphenyl	0.96	0.50	µg/L	1	0	96	39	107	0			
Surr: 4-Terphenyl-d14	1.325	1.0	µg/L	1	0	132	31	133	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc. Work Order: 1708044 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: LCSD-27476	Batch ID: 27476	Test Code: SW8270D	Units: µg/L	Analysis Date: 9/6/2017 1:29:00 PM	Prep Date: 8/31/2017							
Client ID:	Run ID: SV-4_170906A	SeqNo: 1005253										
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Naphthalene	3.785	0.10	µg/L	5	0	75.7	32	113	4.125	8.6	25	
2-Methylnaphthalene	3.835	0.10	µg/L	5	0	76.7	32	121	3.84	0.13	25	
Acenaphthylene	4.085	0.10	µg/L	5	0	81.7	38	126	4.31	5.36	25	
Acenaphthene	3.84	0.10	µg/L	5	0	76.8	38	123	4.045	5.2	25	
Fluorene	4.3	0.10	µg/L	5	0	86	47	127	4.515	4.88	25	
Phenanthrene	4.64	0.070	µg/L	5	0	92.8	51	117	5.12	9.84	25	
Anthracene	3.715	0.10	µg/L	5	0	74.3	52	123	4.17	11.5	25	
Fluoranthene	4.495	0.10	µg/L	5	0	89.9	52	125	5.24	15.3	25	
Pyrene	4.885	0.10	µg/L	5	0	97.7	48	134	5.765	16.5	25	
Benz(a)anthracene	4.55	0.060	µg/L	5	0	91	51	125	5.275	14.8	25	
Chrysene	4.465	0.10	µg/L	5	0	89.3	52	130	5.255	16.3	25	
Benzo(b)fluoranthene	4.97	0.080	µg/L	5	0	99.4	56	129	5.455	9.3	25	
Benzo(k)fluoranthene	4.885	0.10	µg/L	5	0	97.7	51	134	6.035	21.1	25	
Benzo(a)pyrene	4.645	0.10	µg/L	5	0	92.9	53	129	5.305	13.3	25	
Dibenz(a,h)anthracene	4.475	0.10	µg/L	5	0	89.5	52	127	5.115	13.3	25	
Indeno(1,2,3-cd)pyrene	4.485	0.10	µg/L	5	0	89.7	53	124	5.16	14	25	
Benzo(g,h,i)perylene	4.495	0.10	µg/L	5	0	89.9	53	126	5.17	14	25	
Surr: Nitrobenzene-d5	0.915	0.50	µg/L	1	0	91.5	33	107	0	0	0	
Surr: 2-Fluorobiphenyl	0.86	0.50	µg/L	1	0	86	39	107	0	0	0	
Surr: 4-Terphenyl-d14	1.085	1.0	µg/L	1	0	108	31	133	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur

B - Analyte detected in the associated Method Blank

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1708044**Lab ID:** 1708044-01**Collection Date:** 8/30/2017 10:30:00 AM**Collection Time:****Client Sample ID:** 1700396-WE-2**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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PCBS BY EPA8082**SW8082A****Analyst: NS**

Aroclor 1016	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1221	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1232	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1242	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1248	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1254	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1260	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Surr: Decachlorobiphenyl	76.1	27-131		%REC	1	9/7/2017 2:49:00 PM
Surr: Tetrachloro-m-xylene	75.0	37-130		%REC	1	9/7/2017 2:49:00 PM

Lab ID: 1708044-02**Collection Date:** 8/30/2017 12:00:00 PM**Collection Time:****Client Sample ID:** 1700396-SW-1**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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PCBS BY EPA8082**SW8082A****Analyst: NS**

Aroclor 1016	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1221	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1232	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1242	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1248	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1254	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1260	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Surr: Decachlorobiphenyl	87.4	27-131		%REC	1	9/7/2017 3:16:00 PM
Surr: Tetrachloro-m-xylene	85.9	37-130		%REC	1	9/7/2017 3:16:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-27482 Batch ID: 27482 Test Code: SW8082A Units: µg/L Analysis Date: 9/7/2017 1:27:00 PM Prep Date: 9/5/2017
 Client ID: Run ID: GC-ELVIS_170907A SeqNo: 1005541

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	ND	0.20	µg/L									
Aroclor 1221	ND	0.20	µg/L									
Aroclor 1232	ND	0.20	µg/L									
Aroclor 1242	ND	0.20	µg/L									
Aroclor 1248	ND	0.20	µg/L									
Aroclor 1254	ND	0.20	µg/L									
Aroclor 1260	ND	0.20	µg/L									
Surr: Decachlorobiphenyl	0.04913	0	µg/L	0.064	0	76.8	27	131	0			
Surr: Tetrachloro-m-xylene	0.0571	0	µg/L	0.064	0	89.2	37	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-27482	Batch ID: 27482	Test Code: SW8082A	Units: µg/L	Analysis Date: 9/7/2017 1:54:00 PM	Prep Date: 9/5/2017					
Client ID:		Run ID: GC-ELVIS_170907A		SeqNo: 1005542						
Analyte	QC Sample Result	RL	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	%REC	%RPD	RPDLimit	Qua
Aroclor 1016	3.052	0.20	4 µg/L	0	119	44	76.3			0
Aroclor 1260	3.32	0.20	4 µg/L	0	123	48	83			0
Surr: Decachlorobiphenyl	0.05112	0	0.064 µg/L	0	131	27	79.9			0
Surr: Tetrachloro-m-xylene	0.05072	0	0.064 µg/L	0	130	37	79.2			0

Sample ID: LCSD-27482	Batch ID: 27482	Test Code: SW8082A	Units: µg/L	Analysis Date: 9/7/2017 2:21:00 PM	Prep Date: 9/5/2017						
Client ID:		Run ID: GC-ELVIS_170907A		SeqNo: 1005543							
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	%REC	%RPD	RPDLimit	Qua
Aroclor 1016	3.327	0.20	µg/L	4	0	119	44	83.2	8.65	20	
Aroclor 1260	3.581	0.20	µg/L	4	0	123	48	89.5	7.56	20	
Surr: Decachlorobiphenyl	0.05273	0	µg/L	0.064	0	131	27	82.4	0	0	
Surr: Tetrachloro-m-xylene	0.05814	0	µg/L	0.064	0	130	37	90.8	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1708044**Lab ID:** 1708044-01**Collection Date:** 8/30/2017 10:30:00 AM**Collection Time:****Client Sample ID:** 1700396-WE-2**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP- TOTAL METALS BY 200.7		E200.7				Analyst: AL
Cadmium	ND	8.0		µg/L	2	9/1/2017
Chromium	ND	20		µg/L	2	9/1/2017
Copper	ND	50		µg/L	2	9/1/2017
Iron	27,000	200		µg/L	2	9/1/2017
Nickel	ND	80		µg/L	2	9/1/2017
Silver	ND	14		µg/L	2	9/1/2017
Zinc	470	40		µg/L	2	9/1/2017
ARSENIC, TOTAL		E200.9_AS				Analyst: AL
Arsenic	5.4	2.0	PS	µg/L	1	9/6/2017 1:08:00 PM
LEAD, TOTAL		E200.9_PB				Analyst: AL
Lead	ND	5.0	PS	µg/L	1	9/6/2017 6:04:52 PM
ANTIMONY, TOTAL		E200.9_SB				Analyst: AL
Antimony	ND	5.0		µg/L	1	9/5/2017 3:20:14 PM
SELENIUM, TOTAL		E200.9_SE				Analyst: AL
Selenium	ND	5.0		µg/L	1	9/5/2017 6:54:25 PM
MERCURY, TOTAL		E245.1				Analyst: AL
Mercury	ND	0.20		µg/L	1	9/6/2017 3:15:20 PM

AMRO Environmental Laboratories Corp.**Date:** 25-Sep-17**CLIENT:** GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1708044**Lab ID:** 1708044-02**Collection Date:** 8/30/2017 12:00:00 PM**Collection Time:****Client Sample ID:** 1700396-SW-1**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP- TOTAL METALS BY 200.7	E200.7					Analyst: AL
Cadmium	ND	12		µg/L	3	9/1/2017
Chromium	ND	30		µg/L	3	9/1/2017
Copper	ND	75		µg/L	3	9/1/2017
Iron	ND	300		µg/L	3	9/1/2017
Nickel	ND	120		µg/L	3	9/1/2017
Silver	ND	21		µg/L	3	9/1/2017
Zinc	ND	60		µg/L	3	9/1/2017
ARSENIC, TOTAL	E200.9_AS					Analyst: AL
Arsenic	ND	2.0	PS	µg/L	1	9/6/2017 1:35:18 PM
LEAD, TOTAL	E200.9_PB					Analyst: AL
Lead	ND	5.0	PS	µg/L	1	9/6/2017 6:32:00 PM
ANTIMONY, TOTAL	E200.9_SB					Analyst: AL
Antimony	ND	5.0		µg/L	1	9/5/2017 3:45:41 PM
SELENIUM, TOTAL	E200.9_SE					Analyst: AL
Selenium	ND	5.0		µg/L	1	9/5/2017 7:22:04 PM
MERCURY, TOTAL	E245.1					Analyst: AL
Mercury	ND	0.20		µg/L	1	9/6/2017 3:19:12 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-27472 **Batch ID:** 27472 **Test Code:** E200.7 **Units:** µg/L **Analysis Date:** 9/1/2017 1:34:09 PM **Prep Date:** 8/31/2017
Client ID: Run ID: ICP-OPTIMA_170901A **SeqNo:** 1005140

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Cadmium	ND	4.0	µg/L									
Chromium	ND	10	µg/L									
Copper	ND	25	µg/L									
Iron	ND	100	µg/L									
Nickel	ND	40	µg/L									
Silver	ND	7.0	µg/L									
Zinc	ND	20	µg/L									

Sample ID: MB-27472 **Batch ID:** 27472 **Test Code:** E200.9_As **Units:** µg/L **Analysis Date:** 9/6/2017 1:02:25 PM **Prep Date:** 8/31/2017
Client ID: Run ID: AANALYST 600_170906 **SeqNo:** 1005401

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Arsenic	ND	2.0	µg/L									

Sample ID: MB-27472 **Batch ID:** 27472 **Test Code:** E200.9_Pb **Units:** µg/L **Analysis Date:** 9/6/2017 5:58:51 PM **Prep Date:** 8/31/2017
Client ID: Run ID: AANALYST 600_170906 **SeqNo:** 1005479

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Lead	ND	5.0	µg/L									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-27472 **Batch ID:** 27472 **Test Code:** E200.9_Sb **Units:** µg/L **Analysis Date:** 9/5/2017 3:07:41 PM **Prep Date:** 8/31/2017
Client ID: **Run ID:** AANALYST 600_170905 **SeqNo:** 1005317

Analyte	QC Sample Result	QC Spike Original Sample Amount	QC Spike Original Sample Result	%REC	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Antimony	ND	5.0	µg/L						

Sample ID: MB-27472 **Batch ID:** 27472 **Test Code:** E200.9_Se **Units:** µg/L **Analysis Date:** 9/5/2017 6:41:45 PM **Prep Date:** 8/31/2017
Client ID: **Run ID:** AANALYST 600_170905 **SeqNo:** 1005359

Analyte	QC Sample Result	QC Spike Original Sample Amount	QC Spike Original Sample Result	%REC	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Selenium	ND	5.0	µg/L						

Sample ID: mb-27477 **Batch ID:** 27477 **Test Code:** E245.1 **Units:** µg/L **Analysis Date:** 9/6/2017 2:18:11 PM **Prep Date:** 9/5/2017
Client ID: **Run ID:** HG-FIMS_170906A **SeqNo:** 1005586

Analyte	QC Sample Result	QC Spike Original Sample Amount	QC Spike Original Sample Result	%REC	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Mercury	ND	0.20	µg/L						

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: lcs-27472	Batch ID: 27472	Test Code: E200.7		Units: µg/L		Analysis Date: 9/1/2017 2:03:23 PM		Prep Date: 8/31/2017	
Client ID:		Run ID:	ICP-OPTIMA_170901A	SeqNo: 1005142					
Analyte	QC Sample	QC Spike	Original Sample	Original Sample					
	Result	RL	Units	Amount	Result	%REC	LowLimit	HighLimit	or MS Result
Cadmium	773.6	4.0	µg/L	800	0	96.7	85	115	0
Chromium	4074	10	µg/L	3976	0	102	85	115	0
Copper	1998	25	µg/L	2004	0	99.7	85	115	0
Iron	4279	100	µg/L	4004	0	107	85	115	0
Nickel	4134	40	µg/L	3984	0	104	85	115	0
Silver	394.7	7.0	µg/L	400	0	98.7	85	115	0
Zinc	3856	20	µg/L	3984	0	96.8	85	115	0

Sample ID: LCS-27472		Batch ID: 27472		Test Code: E200.9_As		Units: µg/L		Analysis Date: 9/6/2017 1:05:12 PM				Prep Date: 8/31/2017	
Client ID:				Run ID: AANALYST 600_170906				SeqNo: 1005402					
Analyte	QC Sample Result	RL	Units	Amount	QC Spike Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qty	
Arsenic	20.4	2.0	µg/L	20	0	102	85	115	0				

Sample ID: LCS-27472		Batch ID: 27472		Test Code: E200.9_Pb		Units: µg/L		Analysis Date: 9/6/2017 6:01:38 PM				Prep Date: 8/31/2017	
Client ID:				Run ID: AANALYST 600_170906				SeqNo: 1005480					
Analyte	QC Sample Result	RL	Units	Amount	QC Spike Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qty	
Lead	19.63	5.0	µg/L	20	0	98.2	85	115	0				

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-27472	Batch ID: 27472	Test Code: E200.9_Sb	Units: µg/L	Analysis Date: 9/5/2017 3:17:05 PM	Prep Date: 8/31/2017
Client ID:	Run ID: AANALYST 600_170905	SeqNo: 1005320			
Analyte	QC Sample Result	QC Spike Amount	Original Sample	LowLimit	HighLimit
Antimony	19.63	20 µg/L	0	85	115
			0		0

Sample ID: LCS-27472	Batch ID: 27472	Test Code: E200.9_Se	Units: µg/L	Analysis Date: 9/5/2017 6:51:28 PM	Prep Date: 8/31/2017
Client ID:	Run ID: AANALYST 600_170905	SeqNo: 1005362			
Analyte	QC Sample Result	QC Spike Amount	Original Sample	LowLimit	HighLimit
Selenium	19.62	20 µg/L	0	85	115
			0		0

Sample ID: LCS-27477	Batch ID: 27477	Test Code: E245.1	Units: µg/L	Analysis Date: 9/6/2017 2:21:56 PM	Prep Date: 9/5/2017
Client ID:	Run ID: HG-FIMS_170906A	SeqNo: 1005587			
Analyte	QC Sample Result	QC Spike Amount	Original Sample	LowLimit	HighLimit
Mercury	3.787	4 µg/L	0	80	120
			0		0

Sample ID: LCS-27477	Batch ID: 27477	Test Code: E245.1	Units: µg/L	Analysis Date: 9/6/2017 2:25:42 PM	Prep Date: 9/5/2017
Client ID:	Run ID: HG-FIMS_170906A	SeqNo: 1005588			
Analyte	QC Sample Result	QC Spike Amount	Original Sample	LowLimit	HighLimit
Mercury	3.825	4 µg/L	0	80	120
			0		0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-01HMS		Batch ID: 27472	Test Code: E200.7		Units: µg/L		Analysis Date: 9/1/2017 3:14:48 PM		Prep Date: 8/31/2017	
Client ID: 1700396-WE-2			Run ID: ICP-OPTIMA_170901A				SeqNo: 1005149			
Analyte	QC Sample Result	RL	Units	QC Spike		Original Sample		Original Sample		Qu
				Amount	Result	%REC	LowLimit	HighLimit	or MS Result	
Cadmium	728.2	4.0	µg/L	800	0	91	70	130	0	
Chromium	3784	10	µg/L	3976	0	95.2	70	130	0	
Copper	2394	25	µg/L	2004	19.61	119	70	130	0	
Iron	29690	100	µg/L	4004	24950	118	70	130	0	
Nickel	3916	40	µg/L	3984	7.658	98.1	70	130	0	
Silver	453.8	7.0	µg/L	400	0	113	70	130	0	
Zinc	4168	20	µg/L	3984	454.3	93.2	70	130	0	

Sample ID: 1708044-01HMSD		Batch ID: 27472	Test Code: E200.7		Units: µg/L		Analysis Date: 9/1/2017 3:21:31 PM		Prep Date: 8/31/2017				
Client ID: 1700396-WE-2			Run ID:	ICP-OPTIMA_170901A			SeqNo:	1005150					
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample			%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Result
				Amount	Result	Result							
Cadmium	741.7	4.0	µg/L	800	0	92.7	70	130	728.2	1.85	20		
Chromium	3899	10	µg/L	3976	0	98.1	70	130	3784	2.97	20		
Copper	2482	25	µg/L	2004	19.61	123	70	130	2394	3.59	20		
Iron	29090	100	µg/L	4004	24950	103	70	130	29690	2.06	20		
Nickel	4040	40	µg/L	3984	7.658	101	70	130	3916	3.12	20		
Silver	475.4	7.0	µg/L	400	0	119	70	130	453.8	4.65	20		
Zinc	4244	20	µg/L	3984	454.3	95.1	70	130	4168	1.82	20		

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-01HMS	Batch ID: 27472	Test Code: E200.9_As	Units: µg/L	Analysis Date: 9/6/2017 1:24:03 PM	Prep Date: 8/31/2017
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170906		SeqNo: 1005406	
Analyte	QC Sample Result	QC Spike Original Sample	QC Spike Original Sample	Original Sample	
	Result	Amount	Units	HighLimit	LowLimit
Arsenic	19.01	20	µg/L	5.415	70
				68	130
				0	0
					S
Sample ID: 1708044-01HMSD	Batch ID: 27472	Test Code: E200.9_As	Units: µg/L	Analysis Date: 9/6/2017 1:26:50 PM	Prep Date: 8/31/2017
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170906		SeqNo: 1005407	
Analyte	QC Sample Result	QC Spike Original Sample	QC Spike Original Sample	Original Sample	
	Result	Amount	Units	HighLimit	LowLimit
Arsenic	19.49	20	µg/L	5.415	70
				70.4	130
				19.01	0
					2.49
					0
Sample ID: 1708044-01HMS	Batch ID: 27472	Test Code: E200.9_Pb	Units: µg/L	Analysis Date: 9/6/2017 6:25:59 PM	Prep Date: 8/31/2017
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170906		SeqNo: 1005484	
Analyte	QC Sample Result	QC Spike Original Sample	QC Spike Original Sample	Original Sample	
	Result	Amount	Units	HighLimit	LowLimit
Lead	10.08	20	µg/L	50.4	70
				0	130
				0	0
					S
Sample ID: 1708044-01HMSD	Batch ID: 27472	Test Code: E200.9_Pb	Units: µg/L	Analysis Date: 9/6/2017 6:29:13 PM	Prep Date: 8/31/2017
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170906		SeqNo: 1005485	
Analyte	QC Sample Result	QC Spike Original Sample	QC Spike Original Sample	Original Sample	
	Result	Amount	Units	HighLimit	LowLimit
Lead	8.27	20	µg/L	41.4	70
				0	130
				10.08	20
				19.7	S

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-01HMS	Batch ID: 27472	Test Code: E200.9_Sb		Units: µg/L	Analysis Date: 9/5/2017 3:40:07 PM		Prep Date: 8/31/2017		
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170905			SeqNo: 1005324				
Analyte	QC Sample Result	RL	QC Spike Original Sample		Original Sample		%RPD	RPDLimit	Qua
			Units	Amount	Result	%REC			
Antimony	18.45	5.0	µg/L	20	0	92.2	70	130	0

Sample ID: 1708044-01HMSD	Batch ID: 27472	Test Code: E200.9_Sb	Units: µg/L	Analysis Date: 9/5/2017 3:42:54 PM	Prep Date: 8/31/2017							
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170905		SeqNo: 1005325								
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Antimony	18.3	5.0	µg/L	20	0	91.5	70	130	18.45	0.816	20	

Sample ID: 1708044-01HMS		Batch ID: 27472	Test Code: E200.9_Se		Units: µg/L	Analysis Date: 9/5/2017 7:15:26 PM		Prep Date: 8/31/2017					
Client ID: 1700396-WE-2			Run ID: AANALYST 600_170905			SeqNo: 1005366							
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount		Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Selenium	ND	5.0	µg/L	20		0	0	70	130	0			S

Sample ID: 1708044-01HMSD		Batch ID: 27472	Test Code: E200.9_Se		Units: µg/L	Analysis Date: 9/5/2017 7:18:45 PM		Prep Date: 8/31/2017				
Client ID: 1700396-WE-2			Run ID: AANALYST 600_170905			SeqNo: 1005367						
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu:
Selenium	ND	5.0	µg/L	20	0	0	70	130	0	0	20	S

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708040-02bms	Batch ID: 27477	Test Code: E245.1	Units: µg/L	Analysis Date: 9/6/2017 2:37:02 PM	Prep Date: 9/5/2017
Client ID:		Run ID: HG-FIMS_170906A		SeqNo: 1005591	
Analyte	QC Sample Result	QC Spike Amount	Original Sample Result	HighLimit	LowLimit
Mercury	3.249	4 µg/L	0	125	75
			%REC	%RPD	RPDLimit
			81.2	0	0
Sample ID: 1708040-02bmsd	Batch ID: 27477	Test Code: E245.1	Units: µg/L	Analysis Date: 9/6/2017 2:40:51 PM	Prep Date: 9/5/2017
Client ID:		Run ID: HG-FIMS_170906A		SeqNo: 1005592	
Analyte	QC Sample Result	QC Spike Amount	Original Sample Result	HighLimit	LowLimit
Mercury	3.645	4 µg/L	0	125	75
			%REC	%RPD	RPDLimit
			91.1	11.5	20

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 1708044-01HD		Batch ID: 27472	Test Code: E200.7		Units: µg/L		Analysis Date: 9/1/2017 2:43:37 PM		Prep Date: 8/31/2017			
Client ID: 1700396-WE-2			Run ID: ICP-OPTIMA_170901A	SeqNo: 1005148								
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample			Original Sample			RPD	RPDLimit	Que
				Amount	Result	%REC	LowLimit	HighLimit	or MS Result			
Cadmium	ND	4.0	µg/L	0	0	0	0	0	0	0	20	
Chromium	ND	10	µg/L	0	0	0	0	0	0	0	20	
Copper	13.22	25	µg/L	0	0	0	0	0	19.61	38.9	20	JR
Iron	26130	100	µg/L	0	0	0	0	0	24950	4.61	20	
Nickel	5.975	40	µg/L	0	0	0	0	0	7.658	24.7	20	JR
Silver	ND	7.0	µg/L	0	0	0	0	0	0	0	20	
Zinc	472.2	20	µg/L	0	0	0	0	0	454.3	3.87	20	

Sample ID: 1708044-01HD		Batch ID: 27472	Test Code: E200.9_As		Units: µg/L		Analysis Date: 9/6/2017 1:20:54 PM				Prep Date: 8/31/2017	
Client ID: 1700396-WE-2			Run ID: AANALYST 600_170906		SeqNo: 1005405							
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
	1.736	2.0	µg/L	0	0	0	0	0	5.415	103	20	JR
Arsenic												

Sample ID: 1708044-01HD		Batch ID: 27472	Test Code: E200.9_Pb		Units: µg/L		Analysis Date: 9/6/2017 6:23:12 PM				Prep Date: 8/31/2017			
Client ID: 1700396-WE-2			Run ID: AANALYST 600_170906		SeqNo: 1005483									
Analyte	QC Sample Result	RL	QC Spike		Original Sample		Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qty
			Units	Amount	µg/L									
Lead	ND	5.0		0		0	0	0	0	0	0	0	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 1708044-01HD	Batch ID: 27472	Test Code: E200.9_Sb	Units: µg/L	Analysis Date: 9/5/2017 3:37:19 PM	Prep Date: 8/31/2017
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170905		SeqNo: 1005323	
Analyte	QC Sample Result	QC Spike Original Sample	QC Spike Amount	Original Sample	
	Result	Result	Amount	HighLimit or MS Result	%RPD RPDLimit
Antimony	ND	5.0	0	0	0 20
Sample ID: 1708044-01HD	Batch ID: 27472	Test Code: E200.9_Se	Units: µg/L	Analysis Date: 9/5/2017 7:12:28 PM	Prep Date: 8/31/2017
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170905		SeqNo: 1005365	
Analyte	QC Sample Result	QC Spike Original Sample	QC Spike Amount	Original Sample	
	Result	Result	Amount	HighLimit or MS Result	%RPD RPDLimit
Selenium	ND	5.0	0	0	0 20
Sample ID: 1708040-02bd	Batch ID: 27477	Test Code: E245.1	Units: µg/L	Analysis Date: 9/6/2017 2:33:16 PM	Prep Date: 9/5/2017
Client ID:		Run ID: HG-FIMS_170908A		SeqNo: 1005590	
Analyte	QC Sample Result	QC Spike Original Sample	QC Spike Amount	Original Sample	
	Result	Result	Amount	HighLimit or MS Result	%RPD RPDLimit
Mercury	ND	0.20	0	0	0 20

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Project: I700396 MPA Berth 10 Final Design**Lab Order:** I708044**Lab ID:** I708044-01**Collection Date:** 8/30/2017 10:30:00 AM**Collection Time:****Client Sample ID:** I700396-WE-2**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	8/31/2017 10:15:00 AM
HEXAVALENT CHROMIUM, DISSOLVED		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	8/31/2017 10:15:00 AM
OIL & GREASE, TPH (NON-POLAR MATERIAL)		E1664				Analyst: AL
SGT-Hexane Extractable Material	ND	5.0		mg/L	1	9/12/2017
TOTAL SUSPENDED SOLIDS		SM2540 D				Analyst: MB
Suspended Solids (Residue, Non-Filterable)	68	4.0		mg/L	1	8/31/2017
CHLORINE, TOTAL RESIDUAL (MODIFIED)		M4500-CL G				Analyst: AL
Chlorine, Total Residual	ND	0.10	H	mg/L	1	8/31/2017 9:15:00 AM
CYANIDE, TOTAL		SM4500-CN C,E				Analyst: AL
Cyanide	ND	0.010		mg/L	1	9/11/2017
AMMONIA AS NITROGEN		SM4500-NH3, C				Analyst: AL
Nitrogen, Ammonia (As N)	ND	1.0		mg/L	1	9/11/2017

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1708044**Lab ID:** 1708044-02**Collection Date:** 8/30/2017 12:00:00 PM**Collection Time:****Client Sample ID:** 1700396-SW-1**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM	SW7196A					Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	8/31/2017 10:15:00 AM
HEXAVALENT CHROMIUM, DISSOLVED	SW7196A					Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	8/31/2017 10:15:00 AM
OIL & GREASE, TPH (NON-POLAR MATERIAL)	E1664					Analyst: AL
SGT-Hexane Extractable Material	ND	5.0		mg/L	1	9/12/2017
TOTAL SUSPENDED SOLIDS	SM2540 D					Analyst: MB
Suspended Solids (Residue, Non-Filterable)	4.0	4.0		mg/L	1	8/31/2017
CHLORINE, TOTAL RESIDUAL (MODIFIED)	M4500-CL G					Analyst: AL
Chlorine, Total Residual	ND	0.10	H	mg/L	1	8/31/2017 9:15:00 AM
CYANIDE, TOTAL	SM4500-CN C,E					Analyst: AL
Cyanide	ND	0.010		mg/L	1	9/11/2017
AMMONIA AS NITROGEN	SM4500-NH3, C					Analyst: AL
Nitrogen, Ammonia (As N)	ND	1.0		mg/L	1	9/11/2017

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005759	
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result
Chromium, Hexavalent	ND	0.010	mg/L		
Sample ID: MB-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005759	
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result
Chromium, Hexavalent	ND	0.010	mg/L		
Sample ID: MB-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005759	
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result
Chromium, Hexavalent	ND	0.010	mg/L		
Sample ID: MB-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005759	
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result
Chromium, Hexavalent	ND	0.010	mg/L		
Sample ID: MB-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005759	
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result
Chromium, Hexavalent	ND	0.010	mg/L		

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-R59950 Batch ID: R59950 Test Code: E1664 Units: mg/L Analysis Date: 9/12/2017 Prep Date:
 Client ID: Run ID: ING-WET_170912C SeqNo: 1005753
 Analyte QC Sample Result ND QC Spike Original Sample Result %REC LowLimit HighLimit Original Sample or MS Result %RPD RPDLimit Qu
 SGT-Hexane Extractable Material 5.0 mg/L

Sample ID: MB-R59918 Batch ID: R59918 Test Code: SM2540 D Units: mg/L Analysis Date: 8/31/2017 Prep Date:
 Client ID: Run ID: ING-WET_170831A SeqNo: 1005238
 Analyte QC Sample Result ND QC Spike Original Sample Result %REC LowLimit HighLimit Original Sample or MS Result %RPD RPDLimit Qu
 Suspended Solids (Residue, Non 4.0 mg/L

Sample ID: MB-R59941 Batch ID: R59941 Test Code: M4500-CI G Units: mg/L Analysis Date: 8/31/2017 9:15:00 AM Prep Date:
 Client ID: Run ID: ING-WET_170831B SeqNo: 1005647
 Analyte QC Sample Result ND QC Spike Original Sample Result %REC LowLimit HighLimit Original Sample or MS Result %RPD RPDLimit Qu
 Chlorine, Total Residual 0.10 mg/L

Sample ID: MB-R59946 Batch ID: R59946 Test Code: SM4500-CN C Units: mg/L Analysis Date: 9/11/2017 Prep Date:
 Client ID: Run ID: ING-WET_170911C SeqNo: 1005687
 Analyte QC Sample Result ND QC Spike Original Sample Result %REC LowLimit HighLimit Original Sample or MS Result %RPD RPDLimit Qu
 Cyanide 0.010 mg/L

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-R59945 Batch ID: R59945 Test Code: SM4500-NH3, Units: mg/L Analysis Date: 9/11/2017 Prep Date:
 Client ID: Run ID: ING-WET_170911B SeqNo: 1005680
 Analyte QC Sample Result QC Spike Original Sample Result %REC LowLimit HighLimit Original Sample or MS Result %RPD RPDLimit Qu
 Nitrogen, Ammonia (As N) ND 1.0 mg/L

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005760	
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
Chromium, Hexavalent	0.101	0.010	mg/L 0.1	0	101
				80	120
					0
Sample ID: LCS-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005760	
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
Chromium, Hexavalent	0.101	0.010	mg/L 0.1	0	101
				80	120
					0
Sample ID: LCS-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005760	
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
Chromium, Hexavalent	0.101	0.010	mg/L 0.1	0	101
				80	120
					0
Sample ID: LCS-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005760	
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
Chromium, Hexavalent	0.101	0.010	mg/L 0.1	0	101
				80	120
					0

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-R59950	Batch ID: R59950	Test Code: E1664	Units: mg/L	Analysis Date: 9/12/2017	Prep Date:
Client ID:	Run ID: ING-WET_170912C	SeqNo: 1005754			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result or MS Result
SGT-Hexane Extractable Material	20.1	5.0	mg/L	20	0
				42.4	144
				100	0
				%REC	%RPD
				LowLimit	RPDLimit
				HighLimit	Qua

Sample ID: LCS-R59918	Batch ID: R59918	Test Code: SM2540 D	Units: mg/L	Analysis Date: 8/31/2017	Prep Date:
Client ID:	Run ID: ING-WET_170831A	SeqNo: 1005239			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result or MS Result
Suspended Solids (Residue, Non	949	4.0	mg/L	951	0
				97	103
				99.8	0
				%REC	%RPD
				LowLimit	RPDLimit
				HighLimit	Qua

Sample ID: LCS-R59941	Batch ID: R59941	Test Code: M4500-CI G	Units: mg/L	Analysis Date: 8/31/2017 9:15:00 AM	Prep Date:
Client ID:	Run ID: ING-WET_170831B	SeqNo: 1005648			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result or MS Result
Chlorine, Total Residual	1.096	0.10	mg/L	1	0
				90	110
				110	0
				%REC	%RPD
				LowLimit	RPDLimit
				HighLimit	Qua

Sample ID: LCS-R59946	Batch ID: R59946	Test Code: SM4500-CN C	Units: mg/L	Analysis Date: 9/11/2017	Prep Date:
Client ID:	Run ID: ING-WET_170911C	SeqNo: 1005688			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result or MS Result
Cyanide	0.206	0.010	mg/L	0.2	0
				84	121
				103	0
				%REC	%RPD
				LowLimit	RPDLimit
				HighLimit	Qua

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

NA - Not applicable where J values or ND results occur

B - Analyte detected in the associated Method Blank

NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-R59945	Batch ID: R59945	Test Code: SM4500-NH3, Units: mg/L		Analysis Date: 9/11/2017		Prep Date:						
Client ID:	Run ID: ING-WET_170911B	SeqNo: 1005681										
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Nitrogen, Ammonia (As N)	9.38	1.0	mg/L	10	0	93.8	88	95	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-02EMS Batch ID: R59951 Test Code: SW7196A Units: mg/L Analysis Date: 8/31/2017 10:15:00 AM Prep Date:
 Client ID: 1700396-SW-1 Run ID: ING-WET_170831C SeqNo: 1005764

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample Result
Chromium, Hexavalent	0.1	0.010	mg/L	0.1	0.004	96	75	125	0			

Sample ID: 1708044-02EMS Batch ID: R59951 Test Code: SW7196A Units: mg/L Analysis Date: 8/31/2017 10:15:00 AM Prep Date:
 Client ID: 1700396-SW-1 Run ID: ING-WET_170831C SeqNo: 1005764

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample Result
Chromium, Hexavalent	0.1	0.010	mg/L	0.1	0.004	96	75	125	0			

Sample ID: 1708044-02EMS Batch ID: R59951 Test Code: SW7196A Units: mg/L Analysis Date: 8/31/2017 10:15:00 AM Prep Date:
 Client ID: 1700396-SW-1 Run ID: ING-WET_170831C SeqNo: 1005764

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample Result
Chromium, Hexavalent	0.1	0.010	mg/L	0.1	0.004	96	75	125	0			

Sample ID: 1708044-02EMS Batch ID: R59951 Test Code: SW7196A Units: mg/L Analysis Date: 8/31/2017 10:15:00 AM Prep Date:
 Client ID: 1700396-SW-1 Run ID: ING-WET_170831C SeqNo: 1005764

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample Result
Chromium, Hexavalent	0.1	0.010	mg/L	0.1	0.004	96	75	125	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-01CMS		Batch ID: R59950	Test Code: E1664		Units: mg/L		Analysis Date: 9/12/2017		Prep Date:	
Client ID: 1700396-WE-2			Run ID: ING-WET_170912C				SeqNo: 1005757			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	QC
SGT-Hexane Extractable Material	20.2	5.0	mg/L	20	0.6	98	78	114	0	
Sample ID: 1708044-02DMS		Batch ID: R59941	Test Code: M4500-Cl G		Units: mg/L		Analysis Date: 8/31/2017 9:15:00 AM		Prep Date:	
Client ID: 1700396-SW-1			Run ID: ING-WET_170831B				SeqNo: 1005652			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	QC
Chlorine, Total Residual	1.073	0.10	mg/L	1	0	107	89	118	0	H
Sample ID: 1708044-01GMS		Batch ID: R59946	Test Code: SM4500-CN C		Units: mg/L		Analysis Date: 9/11/2017		Prep Date:	
Client ID: 1700396-WE-2			Run ID: ING-WET_170911C				SeqNo: 1005692			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	QC
Cyanide	0.13	0.010	mg/L	0.2	0	65	68	119	0	S
Sample ID: 1708044-01IMS		Batch ID: R59945	Test Code: SM4500-NH3,		Units: mg/L		Analysis Date: 9/11/2017		Prep Date:	
Client ID: 1700396-WE-2			Run ID: ING-WET_170911B				SeqNo: 1005685			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	QC
Nitrogen, Ammonia (As N)	9.1	1.0	mg/L	10	0	91	78	107	0	

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

NA - Not applicable where J values or ND results occur

Thursday, September 21, 2017

Nancy Stewart
AMRO
111 Herrick Street
Merrimack NH 03054

Project Name: MPA Berth 10 Final Design

Lab ID: 17090159

Project #: 1700396

Date Received: 9/15/2017

Project Location: MA

Control #: 17090159

Dear Nancy Stewart

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on "as received" weight unless denoted "dry".

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe's certified parameter list can be found at <http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx>



Jay Chrystal - President/Laboratory Director



AMRO

Nancy Stewart

111 Herrick Street

Merrimack NH 03054

Control #: 17090159

Project Number: 1700396

Project Name: MPA Berth 10 Final Design

Project Location: MA

Lab ID: 17090159

Date: 9/21/2017

Lab ID: 17090159

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	N/A
Was there evidence of cooling or were samples received on the same day as collection?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Were samples submitted with a chain of custody?	Yes

Sample	Method	Client Identity	Matrix	Analyst
17090159-001	SW 9056	1700396-WE-2	Groundwater	PaulF

Comment: no comment

* Blank comment sections denote "No Comment"



317 Elm Street
Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

AMRO

Nancy Stewart
111 Herrick Street
Merrimack NH 03054

Control #: 17090159
Project Number: 1700396
Project Name: MPA Berth 10 Final Design
Project Location: MA

Analytical Results

Lab ID: 17090159
Date: 9/21/2017

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
17090159-001	1700396-WE-2	8/30/2017 10:30:00 AM	Groundwater
Composite Start Date and Time		8/30/2017 10:30:00 AM	Composite End Date and Time

Parameter	Method	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Chloride	SW 9056	15300 mg/L		9/19/2017	1	1



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 Milford, NH 03055
 (603) 673-5440
 Sales@chemservelab.com

AMRO

Nancy Stewart
 111 Herrick Street
 Merrimack NH 03054

Control #: 17090159
 Project Number: 1700396
 Project Name: MPA Berth 10 Final Design
 Project Location: MA

Analytical Results

Lab ID: 17090159
 Date: 9/21/2017

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
17090159-002	1700396-SW-1	8/30/2017 12:00:00 PM	Groundwater
Composite Start Date and Time 8/30/2017 12:00:00 PM		Composite End Date and Time	

Parameter	Method	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Chloride	SW 9056	20200 mg/L		9/19/2017	1	1

Qualifier: Description:

B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">" the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

AMRO Environmental Laboratories Corporation
111 Herrick Street
Merrimack, NH 03054

CHAIN-OF-CUSTODY RECORD

62031N

Office: (603) 424-2022
Fax: (603) 429-8496
web: www.amrolabs.com

Project No: 1700396		Project Name: MPA Berth 10 Design		Final State:		Project State:		MA		Project Manager:		Samplers (Signature):		AMRO Project No: 1708044			
P.O. #:		Results Needed by:		Seal Intact? Yes No N/A		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks	
QUOTE #:		Seal Intact?		Yes No N/A		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks	
Sample ID:		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
1700396-WE-2		10:30		6W		500m		✓		Chloride							
1700396-SW-1		12:00		6W		✓		✓		Chloride							
Preservative: CI-HCl, MeOH, N-HNO3, S-H2SO4, Na-NaOH, O-Other		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
Send Results To: Nancy Stewart		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
AMPO Env. Lab - Long		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
111 Herrick Street		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
Merrimack, NH 03054		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
PHONE #:		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
E-mail: nancy@amrolabs.com		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
FAX #:		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
Relinquished By:		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
Nancy Stewart		9-15-17 1100		6W		500m		✓		Chloride							
Please print clearly, legibly and completely. Samples can not be logged in and the turnaround time clock will not start until any ambiguities are resolved.		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
White: Lab Copy		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
Yellow: Client Copy		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
SHEET		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
OF		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	
AMROCC2004, Rev.3 08/18/04		Date/Time Sampled		Matrix		Total # of Cont. & Size		Comp. Grab		Requested Analyses		Remarks		Requested Analyses		Remarks	

Work Order:

17090159

Date Analyzed:

9/19/2017

Analyst:

PF

Method Blank ID:	MB091917	
	Method Blank Results	Detection Limits
Chloride	<DL	1.0 (mg/L)

Control Spike ID	DIMS091917	
	Spiked Amount	LCS mg/L
Chloride	1.00	1.04
		RPD

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E,**

SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Appendix C

Source Water Laboratory Data Report



111 Herrick Street, Merrimack, NH 03054
TEL: (603) 424-2022 • FAX: (603) 429-8496
www.amrolabs.com

September 25, 2017

ANALYTICAL TEST RESULTS

Molly Greer
GEI Consultants, Inc.
400 Unicorn Park Drive
Woburn, MA 01801
TEL: (781) 721-4000
FAX: (781) 721-4073

Subject: 1700396 MPA Berth 10 Final Design

Workorder No.: 1708044

Dear Molly Greer:

AMRO Environmental Laboratories Corp. received 2 samples on 8/30/2017 for the analyses presented in the following report.

AMRO is accredited in accordance with NELAC and certifies that these test results meet all the requirements of NELAC, where applicable, unless otherwise noted in the case narrative.

The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt. Please be advised that any unused sample volume and sample extracts will be stored for a period of 60 days from sample receipt date (90 days for samples from New York). After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This report consists of a total of 73 pages. This letter is an integral part of your data report. All results in this project relate only to the sample(s) as received by the laboratory and documented in the Chain-of-Custody. This report shall not be reproduced except in full, without the written approval of the laboratory. If you have any questions regarding this project in the future, please refer to the Workorder Number above.

Sincerely,

Nancy Stewart
Vice President

State Certifications: NH (NELAC): 1001, MA: M-NH012, CT: PH-0758, NY: 11278 (NELAC), ME: NH012 and 1001.

Hard copy of the State Certification is available upon request.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design
Lab Order: 1708044
Date Received: 8/30/2017

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date	Collection Time
1708044-01A	1700396-WE-2	8/30/2017	10:30 AM
1708044-01B	1700396-WE-2	8/30/2017	10:30 AM
1708044-01C	1700396-WE-2	8/30/2017	10:30 AM
1708044-01D	1700396-WE-2	8/30/2017	10:30 AM
1708044-01E	1700396-WE-2	8/30/2017	10:30 AM
1708044-01F	1700396-WE-2	8/30/2017	10:30 AM
1708044-01G	1700396-WE-2	8/30/2017	10:30 AM
1708044-01H	1700396-WE-2	8/30/2017	10:30 AM
1708044-01I	1700396-WE-2	8/30/2017	10:30 AM
1708044-02A	1700396-SW-1	8/30/2017	12:00 PM
1708044-02B	1700396-SW-1	8/30/2017	12:00 PM
1708044-02C	1700396-SW-1	8/30/2017	12:00 PM
1708044-02D	1700396-SW-1	8/30/2017	12:00 PM
1708044-02E	1700396-SW-1	8/30/2017	12:00 PM
1708044-02F	1700396-SW-1	8/30/2017	12:00 PM
1708044-02G	1700396-SW-1	8/30/2017	12:00 PM
1708044-02H	1700396-SW-1	8/30/2017	12:00 PM
1708044-02I	1700396-SW-1	8/30/2017	12:00 PM

AMRO Environmental Laboratories Corp.

25-Sep-17

Lab Order: 1708044
 Client: GEI Consultants, Inc.
 Project: 1700396 MPA Berth 10 Final Desi

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Analytical Test Name	Prep Date	Batch ID	Analysis Date	TCLP Date
1708044-01A	1700396-WE-2	8/30/2017 10:30:00 AM	Groundwater	EPA 8260C VOLATILES by GC/MS EPA 5030B	8/30/2017	R59921	9/5/2017	
1708044-01B				EPA 8082A PCBs IN WATER EPA 3510 AQPREP SEP FUNNEL: PCB	9/5/2017	27482	9/7/2017	
				EPA 8270D SEMIVOLATILE ORGANICS, Aqueous EPA 3510 AQPREP SEP FUNNEL: BNA	8/31/2017	27476	9/5/2017	
				PAH BY EPA 8270D SIM	8/31/2017	27476	9/6/2017	
1708044-01C				TPH, EPA 1664A	8/31/2017	R59950	9/12/2017	
1708044-01D				SM 4500G Chlorine, Total Residual (modified)	8/31/2017	R59941	8/31/2017	
				Standard Methods - Total Suspended Solids	8/31/2017	R59918	8/31/2017	
1708044-01E				EPA 7196 HEXAVALENT CHROMIUM	8/31/2017	R59951	8/31/2017	
1708044-01F				EPA 7196 HEXA VALENT CHROMIUM	8/31/2017	R59951	8/31/2017	
1708044-01G				Standard Methods - Cyanide, Total	9/11/2017	R59946	9/11/2017	
1708044-01H				EPA 200.7 ICP METALS, TOTAL 200 Series Prep: ICP/GFAA	8/31/2017	27472	9/1/2017	
				EPA 200.7 ICP METALS, TOTAL	8/31/2017	27472	9/1/2017	

AMRO Environmental Laboratories Corp.

25-Sep-17

Lab Order: 1708044
 Client: GEI Consultants, Inc.
 Project: 1700396 MPA Berth 10 Final Desi

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Analytical Test Name	Prep Date	Batch ID	Analysis Date	TCLP Date
1708044-01H	1700396-WE-2	8/30/2017 10:30:00 AM	Groundwater	EPA 200.9 ARSENIC, Total	8/31/2017	27472	9/6/2017	
				200 Series Prep: ICP/GFAA				
				EPA 200.9 LEAD, Total	8/31/2017	27472	9/6/2017	
				EPA 200.9 SELENIUM, Total	8/31/2017	27472	9/5/2017	
				EPA 200.9 ANTIMONY, Total	8/31/2017	27472	9/5/2017	
				EPA 245.1 MERCURY, Total	8/31/2017	27472	9/6/2017	
				MERCURY PREP: EPA 245.1/7040	9/5/2017	27477		
				Standard Methods - Ammonia as Nitrogen			9/11/2017	
						RS9945		
1708044-02A	1700396-SW-1	8/30/2017 12:00:00 PM		EPA 8260C VOLATILES by GC/MS	8/30/2017	R59921	9/5/2017	
				EPA 5030B				
1708044-02B				EPA 8082A PCBs IN WATER	9/7/2017		9/7/2017	
				EPA 3510 AQPREP SEP FUNNEL: PCB	9/5/2017	27482		
				EPA 8270D SEMIVOLATILE ORGANICS, Aqueous			9/5/2017	
				EPA 3510 AQPREP SEP FUNNEL: BNA	8/31/2017	27476		
				PAH BY EPA 8270D SIM			9/6/2017	
					8/31/2017	27476		
1708044-02C				TPH, EPA 1664A			9/12/2017	
						RS9950		
1708044-02D				SM 4500G Chlorine, Total Residual (modified)			8/31/2017	
						RS9941		

AMRO Environmental Laboratories Corp.

25-Sep-17

Lab Order: 1708044
 Client: GEI Consultants, Inc.
 Project: 1700396 MPA Berth 10 Final Desi

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Analytical Test Name	Preparatory Test Name	Prep Date	Batch ID	Analysis Date	TCLP Date
1708044-02D	1700396-SW-1	8/30/2017 12:00:00 PM	Groundwater	Standard Methods - Total Suspended Solids			8/31/2017	R59918	
1708044-02E				EPA 7196 HEXAVALENT CHROMIUM			8/31/2017	R59951	
1708044-02F				EPA 7196 HEXAVALENT CHROMIUM			8/31/2017	R59951	
1708044-02G				Standard Methods - Cyanide, Total			9/11/2017	R59946	
1708044-02H				EPA 200.7 ICP METALS, TOTAL			9/11/2017		
				200 Series Prep: ICP/GFAA		8/31/2017	27472		
				EPA 200.7 ICP METALS, TOTAL			9/1/2017		
						8/31/2017	27472		
				EPA 200.9 ARSENIC, Total			9/6/2017		
						8/31/2017	27472		
				EPA 200.9 LEAD, Total			9/6/2017		
						8/31/2017	27472		
				EPA 200.9 SELENIUM, Total			9/5/2017		
						8/31/2017	27472		
				EPA 200.9 ANTIMONY, Total			9/5/2017		
						8/31/2017	27472		
				EPA 245.1 MERCURY, Total			9/6/2017		
				MERCURY PREP: EPA 245.1/7040		9/5/2017	27477		
1708044-02I				Standard Methods - Ammonia as Nitrogen			9/11/2017	R59945	

THIRD

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Project Location: Boston, MA
Project Manager: Mike Sabulis

Silence

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YES	NO	NA

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AMRO ID: 1708044

* = if the laboratory preserves the drinking water sample (s) for EPA Method 200 series, sample (s) should be held at least 16 hours prior to analysis or 24 hours for water sample (s).

pH Checked By: _____ Date: _____ pH adj. (16 or 24hrs) By: _____ Date: _____

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design
Lab Order: 1708044

CASE NARRATIVE**GC/MS VOLATILES- 8260C:**

1. A Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) were performed on 09/05/17 on V-3 (Batch ID: R59921). All %Rs and RPDs were within the laboratory control limits with the following exception(s):

- 1.1 The %R for 1 analyte out of 67 analytes in the LCS were outside the control limits.
- 1.2 The %R for 2 analytes out of 67 analytes in the LCSD were outside the control limits.
- 1.3 The RPD for 2 analytes out of 67 analytes were outside the control limits.

2. A Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample 1700396-WE-2 (1708044-01). All %Rs and RPDs were within the laboratory control limits with the following exception(s):

- 2.1 The RPD for 1 analyte out of 67 analytes was outside the control limits.

3. No analytical or quality issues were noted, other than those described above or in the Data Comment page.

GC/MS SEMIVOLATILES- 8270D:

1. A Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) were performed on 09/05/17 on SV-4 (Batch ID: 27476). All %Rs and RPDs were within the laboratory control limits with the following exception(s):

- 1.1 The %R for 5 analytes out of 67 analytes in the LCS were outside the control limits.
- 1.2 The %R for 4 analytes out of 67 analytes in the LCSD were outside the control limits.
- 1.3 The RPD for 1 analyte out of 67 analytes was outside the control limits.

2. No analytical or quality issues were noted, other than those described above or in the Data Comment page.

GC/MS SEMIVOLATILES- 8270D-SIM:

1. No analytical or quality issues were noted, other than those described in the Data Comment page.

GC/ECD-PCBs-8082A:

1. No analytical or quality issues were noted, other than those described in the Data Comment page.

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design
Lab Order: 1708044

CASE NARRATIVE

METALS:

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample 1700396-SW-1 (1708044-02). All %Rs and RPDs were within the laboratory control limits with the following exception(s):

1.1 Arsenic recovered above the control limits in the MS. However, in the MSD was within control limits .

1.2 Lead recovered below the control limits in both MS and MSD.

1.3 Selenium was not recovered in both MS and MSD

2. No analytical or quality issues were noted, other than those described above or in the Data Comment page.

WET CHEMISTRY:

1. The samples for Total Residual Chlorine were received past holding time.

2. A Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample 1700396-WE-2 (1708044-01) for Cyanide analysis. MS %R was below laboratory control limits.

3. No analytical or quality issues were noted, other than those described above or in the Data Comment page.

SUB-CONTRACTED

1. Some analyses in this project were sub-contracted to another laboratory. Please see the sample receipt checklist for details and the sub-contract lab report for their certification status. AMRO does not transcribe data from another lab. A copy of the subcontract lab report is included in this report. AMRO keeps the original report on file with this work order.

DATA COMMENT PAGE

Organic Data Qualifiers

ND	Indicates compound was analyzed for, but not detected at or above the reporting limit.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than the method detection limit.
H	Method prescribed holding time exceeded.
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
B	This flag is used when the analyte is found in the associated blank as well as in the sample.
R	RPD outside accepted recovery limits
RL	Reporting limit; defined as the lowest concentration the laboratory can accurately quantitate.
S	Spike Recovery outside accepted recovery limits.
#	See Case Narrative
Q	RPD between signal 1 and signal 2 >40%.

Micro Data Qualifiers

TNTC	Too numerous to count
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Inorganic Data Qualifiers

ND or U	Indicates element was analyzed for, but not detected at or above the reporting limit.
J	Indicates a value greater than or equal to the method detection limit, but less than the quantitation limit.
H	Indicates analytical holding time exceedance.
B	Indicates that the analyte is found in the associated blank, as well as in the sample.
MSA	Indicates value determined by the Method of Standard Addition
+	Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
R	RPD outside accepted recovery limits
RL	Reporting limit; defined as the lowest concentration the laboratory can accurately quantitate.
S	Spike Recovery outside accepted recovery limits.
PS	The analyte was below the Reporting Limit but has significant matrix interference as noted by the poor recovery of the Post Digestion Spike.
#	See Case Narrative
*	MCL Exceeded

Report Comments:

1. Soil, sediment and sludge sample results are reported on a "dry weight" basis.
2. Reporting limits are adjusted for sample size used, dilutions and moisture content, if applicable.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Client Sample ID: 1700396-WE-2

Lab Order: 1708044

Collection Date: 8/30/2017 10:30:00 AM

Project: 1700396 MPA Berth 10 Final Design

Matrix: GROUNDWATER

Lab ID: 1708044-01A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8260C VOLATILES BY GC/MS		SW8260C		Analyst: JK		
1,4-Dioxane	ND	50		µg/L	1	9/5/2017 2:50:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
Chloromethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Vinyl chloride	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Chloroethane	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
Bromomethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Trichlorofluoromethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Diethyl ether	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
Acetone	ND	10		µg/L	1	9/5/2017 2:50:00 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	9/5/2017 2:50:00 PM
Carbon disulfide	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Methylene chloride	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
Methyl tert-butyl ether	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
trans-1,2-Dichloroethene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,1-Dichloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Tertiary Butanol	ND	20		µg/L	1	9/5/2017 2:50:00 PM
2-Butanone	ND	10		µg/L	1	9/5/2017 2:50:00 PM
Diisopropyl ether	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
cis-1,2-Dichloroethene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Ethyl Tertiary Butyl Ether	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Chloroform	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Tetrahydrofuran	ND	10		µg/L	1	9/5/2017 2:50:00 PM
Bromochloromethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,1,1-Trichloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,1-Dichloropropene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Carbon tetrachloride	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2-Dichloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Benzene	ND	1.0		µg/L	1	9/5/2017 2:50:00 PM
Trichloroethene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Bromodichloromethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Dibromomethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Tertiary Amyl Methyl Ether	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	9/5/2017 2:50:00 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/5/2017 2:50:00 PM
Toluene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/5/2017 2:50:00 PM
1,1,2-Trichloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-WE-2**Lab Order:** 1708044**Collection Date:** 8/30/2017 10:30:00 AM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-01A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
2-Hexanone	ND	10		µg/L	1	9/5/2017 2:50:00 PM
1,3-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Tetrachloroethene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Dibromochloromethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Chlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Ethylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
m,p-Xylene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
o-Xylene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Styrene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Bromoform	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Isopropylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Bromobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
n-Propylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
2-Chlorotoluene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
4-Chlorotoluene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
tert-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2,4-Trimethylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
sec-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
4-Isopropyltoluene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,3-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,4-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
n-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Hexachlorobutadiene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Naphthalene	ND	5.0		µg/L	1	9/5/2017 2:50:00 PM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
1,3,5-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 2:50:00 PM
Surr: Dibromofluoromethane	116	74-138		%REC	1	9/5/2017 2:50:00 PM
Surr: 1,2-Dichloroethane-d4	110	64-138		%REC	1	9/5/2017 2:50:00 PM
Surr: Toluene-d8	110	77-128		%REC	1	9/5/2017 2:50:00 PM
Surr: 4-Bromofluorobenzene	96.6	81-113		%REC	1	9/5/2017 2:50:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-SW-1**Lab Order:** 1708044**Collection Date:** 8/30/2017 12:00:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-02A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8260C VOLATILES BY GC/MS		SW8260C		Analyst: JK		
1,4-Dioxane	ND	50		µg/L	1	9/5/2017 3:27:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
Chloromethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Vinyl chloride	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Chloroethane	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
Bromomethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Trichlorofluoromethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Diethyl ether	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
Acetone	ND	10		µg/L	1	9/5/2017 3:27:00 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	9/5/2017 3:27:00 PM
Carbon disulfide	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Methylene chloride	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
Methyl tert-butyl ether	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
trans-1,2-Dichloroethene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,1-Dichloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Tertiary Butanol	ND	20		µg/L	1	9/5/2017 3:27:00 PM
2-Butanone	ND	10		µg/L	1	9/5/2017 3:27:00 PM
Diisopropyl ether	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
cis-1,2-Dichloroethene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Ethyl Tertiary Butyl Ether	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Chloroform	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Tetrahydrofuran	ND	10		µg/L	1	9/5/2017 3:27:00 PM
Bromochloromethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,1,1-Trichloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,1-Dichloropropene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Carbon tetrachloride	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2-Dichloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Benzene	ND	1.0		µg/L	1	9/5/2017 3:27:00 PM
Trichloroethene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Bromodichloromethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Dibromomethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Tertiary Amyl Methyl Ether	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	9/5/2017 3:27:00 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/5/2017 3:27:00 PM
Toluene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/5/2017 3:27:00 PM
1,1,2-Trichloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-SW-1**Lab Order:** 1708044**Collection Date:** 8/30/2017 12:00:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-02A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
2-Hexanone	ND	10		µg/L	1	9/5/2017 3:27:00 PM
1,3-Dichloropropane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Tetrachloroethene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Dibromochloromethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Chlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Ethylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
m,p-Xylene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
o-Xylene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Styrene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Bromoform	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Isopropylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Bromobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
n-Propylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
2-Chlorotoluene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
4-Chlorotoluene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
tert-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2,4-Trimethylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
sec-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
4-Isopropyltoluene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,3-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,4-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
n-Butylbenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2-Dichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Hexachlorobutadiene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Naphthalene	ND	5.0		µg/L	1	9/5/2017 3:27:00 PM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
1,3,5-Trichlorobenzene	ND	2.0		µg/L	1	9/5/2017 3:27:00 PM
Surr: Dibromofluoromethane	118	74-138		%REC	1	9/5/2017 3:27:00 PM
Surr: 1,2-Dichloroethane-d4	108	64-138		%REC	1	9/5/2017 3:27:00 PM
Surr: Toluene-d8	110	77-128		%REC	1	9/5/2017 3:27:00 PM
Surr: 4-Bromofluorobenzene	96.1	81-113		%REC	1	9/5/2017 3:27:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: mb-09/05/17 Batch ID: R59921 Test Code: SW8260C Units: µg/L Analysis Date: 9/5/2017 2:14:00 PM Prep Date: 9/5/2017
 Client ID: Run ID: V-3_170905A SeqNo: 1005280

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
1,4-Dioxane	ND	50	µg/L									
Dichlorodifluoromethane	ND	5.0	µg/L									
Chloromethane	ND	2.0	µg/L									
Vinyl chloride	ND	2.0	µg/L									
Chloroethane	ND	5.0	µg/L									
Bromomethane	ND	2.0	µg/L									
Trichlorofluoromethane	ND	2.0	µg/L									
Diethyl ether	ND	5.0	µg/L									
Acetone	ND	10	µg/L									
1,1-Dichloroethene	ND	1.0	µg/L									
Carbon disulfide	ND	2.0	µg/L									
Methylene chloride	ND	5.0	µg/L									
Methyl tert-butyl ether	ND	2.0	µg/L									
trans-1,2-Dichloroethene	ND	2.0	µg/L									
1,1-Dichloroethane	ND	2.0	µg/L									
Tertiary Butanol	ND	20	µg/L									
2-Butanone	ND	10	µg/L									
Diisopropyl ether	ND	2.0	µg/L									
2,2-Dichloropropane	ND	2.0	µg/L									
cis-1,2-Dichloroethene	ND	2.0	µg/L									
Ethyl Tertiary Butyl Ether	ND	2.0	µg/L									
Chloroform	ND	2.0	µg/L									
Tetrahydrofuran	ND	10	µg/L									
Bromochloromethane	ND	2.0	µg/L									
1,1,1-Trichloroethane	ND	2.0	µg/L									

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits
 R - RPD outside accepted recovery limits
 NA - Not applicable where J values or ND results occur
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

1,1-Dichloropropene	ND	2.0	µg/L
Carbon tetrachloride	ND	2.0	µg/L
1,2-Dichloroethane	ND	2.0	µg/L
Benzene	ND	1.0	µg/L
Trichloroethene	ND	2.0	µg/L
1,2-Dichloropropane	ND	2.0	µg/L
Bromodichloromethane	ND	2.0	µg/L
Dibromomethane	ND	2.0	µg/L
Tertiary Amyl Methyl Ether	ND	2.0	µg/L
4-Methyl-2-pentanone	ND	10	µg/L
cis-1,3-Dichloropropene	ND	1.0	µg/L
Toluene	ND	2.0	µg/L
trans-1,3-Dichloropropene	ND	1.0	µg/L
1,1,2-Trichloroethane	ND	2.0	µg/L
1,2-Dibromoethane	ND	2.0	µg/L
2-Hexanone	ND	10	µg/L
1,3-Dichloropropane	ND	2.0	µg/L
Tetrachloroethene	ND	2.0	µg/L
Dibromochloromethane	ND	2.0	µg/L
Chlorobenzene	ND	2.0	µg/L
1,1,1,2-Tetrachloroethane	ND	2.0	µg/L
Ethylbenzene	ND	2.0	µg/L
m,p-Xylene	ND	2.0	µg/L
o-Xylene	ND	2.0	µg/L
Styrene	ND	2.0	µg/L
Bromoform	ND	2.0	µg/L
Isopropylbenzene	ND	2.0	µg/L
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L
1,2,3-Trichloropropane	ND	2.0	µg/L
Bromobenzene	ND	2.0	µg/L
n-Propylbenzene	ND	2.0	µg/L

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

2-Chlorotoluene	ND	2.0	µg/L
4-Chlorotoluene	ND	2.0	µg/L
1,3,5-Trimethylbenzene	ND	2.0	µg/L
tert-Butylbenzene	ND	2.0	µg/L
1,2,4-Trimethylbenzene	ND	2.0	µg/L
sec-Butylbenzene	ND	2.0	µg/L
4-Isopropyltoluene	ND	2.0	µg/L
1,3-Dichlorobenzene	ND	2.0	µg/L
1,4-Dichlorobenzene	ND	2.0	µg/L
n-Butylbenzene	ND	2.0	µg/L
1,2-Dichlorobenzene	ND	2.0	µg/L
1,2-Dibromo-3-chloropropane	ND	5.0	µg/L
1,2,4-Trichlorobenzene	ND	2.0	µg/L
Hexachlorobutadiene	ND	2.0	µg/L
Naphthalene	ND	5.0	µg/L
1,2,3-Trichlorobenzene	ND	2.0	µg/L
1,3,5-Trichlorobenzene	ND	2.0	µg/L
Surr: Dibromofluoromethane	27.92	2.0	µg/L
Surr: 1,2-Dichloroethane-d4	27.07	2.0	µg/L
Surr: Toluene-d8	27.1	2.0	µg/L
Surr: 4-Bromofluorobenzene	23.85	2.0	µg/L

25	0	112	74	138	0
25	0	108	64	138	0
25	0	108	77	128	0
25	0	95.4	81	113	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: Ics-09/05/17 Batch ID: R59921 Test Code: SW8260C Units: µg/L Analysis Date: 9/5/2017 11:11:00 AM Prep Date: 9/5/2017
Client ID: Run ID: V-3_170905A SeqNo: 1005278

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,4-Dioxane	136	50	µg/L	100	0	136	30	172	0			
Dichlorodifluoromethane	27.36	5.0	µg/L	20	0	137	10	158	0			
Chloromethane	22.22	2.0	µg/L	20	0	111	45	144	0			
Vinyl chloride	24.23	2.0	µg/L	20	0	121	45	140	0			
Chloroethane	22.54	5.0	µg/L	20	0	113	49	140	0			
Bromomethane	27.66	2.0	µg/L	20	0	138	54	149	0			
Trichlorofluoromethane	31.65	2.0	µg/L	20	0	158	71	154	0			
Diethyl ether	24.83	5.0	µg/L	20	0	124	65	142	0			
Acetone	45.62	10	µg/L	40	0	114	10	179	0			
1,1-Dichloroethene	24.66	1.0	µg/L	20	0	123	69	152	0			
Carbon disulfide	16.59	2.0	µg/L	20	0	83	42	149	0			
Methylene chloride	25.37	5.0	µg/L	20	0	127	69	159	0			
Methyl tert-butyl ether	24.93	2.0	µg/L	20	0	125	67	144	0			
trans-1,2-Dichloroethene	22.4	2.0	µg/L	20	0	112	73	149	0			
1,1-Dichloroethane	23.9	2.0	µg/L	20	0	120	74	147	0			
Tertiary Butanol	240.1	20	µg/L	200	0	120	43	162	0			
2-Butanone	36	10	µg/L	40	0	90	16	164	0			
Diisopropyl ether	24.1	2.0	µg/L	20	0	120	63	149	0			
2,2-Dichloropropane	27.4	2.0	µg/L	20	0	137	68	166	0			
cis-1,2-Dichloroethene	24.51	2.0	µg/L	20	0	123	74	141	0			
Ethyl Tertiary Butyl Ether	23.1	2.0	µg/L	20	0	116	70	148	0			
Chloroform	24.3	2.0	µg/L	20	0	122	72	137	0			
Tetrahydrofuran	23.98	10	µg/L	20	0	120	53	149	0			
Bromochloromethane	24.09	2.0	µg/L	20	0	120	76	145	0			
1,1,1-Trichloroethane	25.29	2.0	µg/L	20	0	126	76	138	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

1,1-Dichloropropene	22.61	2.0	µg/L	20	0	113	74	138	0
Carbon tetrachloride	25.19	2.0	µg/L	20	0	126	70	138	0
1,2-Dichloroethane	23.09	2.0	µg/L	20	0	115	74	134	0
Benzene	20.04	1.0	µg/L	20	0	100	69	148	0
Trichloroethene	23.85	2.0	µg/L	20	0	119	74	136	0
1,2-Dichloropropane	23.71	2.0	µg/L	20	0	119	72	137	0
Bromodichloromethane	25.78	2.0	µg/L	20	0	129	74	137	0
Dibromomethane	23.17	2.0	µg/L	20	0	116	75	129	0
Tertiary Amyl Methyl Ether	21.27	2.0	µg/L	20	0	106	72	146	0
4-Methyl-2-pentanone	44.61	10	µg/L	40	0	112	49	138	0
cis-1,3-Dichloropropene	23.25	1.0	µg/L	20	0	116	72	134	0
Toluene	23.76	2.0	µg/L	20	0	119	75	139	0
trans-1,3-Dichloropropene	23.01	1.0	µg/L	20	0	115	64	132	0
1,1,2-Trichloroethane	24.16	2.0	µg/L	20	0	121	73	138	0
1,2-Dibromoethane	22.55	2.0	µg/L	20	0	113	72	136	0
2-Hexanone	34.43	10	µg/L	40	0	86.1	35	138	0
1,3-Dichloropropane	18.61	2.0	µg/L	20	0	93	75	120	0
Tetrachloroethene	19.44	2.0	µg/L	20	0	97.2	77	125	0
Dibromochloromethane	18.41	2.0	µg/L	20	0	92	68	113	0
Chlorobenzene	18.82	2.0	µg/L	20	0	94.1	79	120	0
1,1,1,2-Tetrachloroethane	18.71	2.0	µg/L	20	0	93.6	73	118	0
Ethylbenzene	19.26	2.0	µg/L	20	0	96.3	75	127	0
m,p-Xylene	37.07	2.0	µg/L	40	0	92.7	73	131	0
o-Xylene	18.93	2.0	µg/L	20	0	94.6	73	133	0
Styrene	19.6	2.0	µg/L	20	0	98	69	134	0
Bromoform	14.39	2.0	µg/L	20	0	72	51	112	0
Isopropylbenzene	17.82	2.0	µg/L	20	0	89.1	68	128	0
1,1,2,2-Tetrachloroethane	19.12	2.0	µg/L	20	0	95.6	65	121	0
1,2,3-Trichloropropane	21.73	2.0	µg/L	20	0	109	59	125	0
Bromobenzene	17.56	2.0	µg/L	20	0	87.8	75	120	0
n-Propylbenzene	18.32	2.0	µg/L	20	0	91.6	66	131	0

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits
 R - RPD outside accepted recovery limits
 NA - Not applicable where J values or ND results occur
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.		QC SUMMARY REPORT									
Work Order:	1708044	Laboratory Control Spike									
Project:	1700396 MPA Berth 10 Final Design										
2-Chlorotoluene	18.49	2.0	µg/L	20	0	92.5	68	123	0		
4-Chlorotoluene	18.34	2.0	µg/L	20	0	91.7	69	124	0		
1,3,5-Trimethylbenzene	18.58	2.0	µg/L	20	0	92.9	68	130	0		
tert-Butylbenzene	18.25	2.0	µg/L	20	0	91.2	67	129	0		
1,2,4-Trimethylbenzene	18.41	2.0	µg/L	20	0	92	69	132	0		
sec-Butylbenzene	17.76	2.0	µg/L	20	0	88.8	62	136	0		
4-Isopropyltoluene	18.06	2.0	µg/L	20	0	90.3	65	137	0		
1,3-Dichlorobenzene	19	2.0	µg/L	20	0	95	71	126	0		
1,4-Dichlorobenzene	18.02	2.0	µg/L	20	0	90.1	72	123	0		
n-Butylbenzene	18.38	2.0	µg/L	20	0	91.9	64	138	0		
1,2-Dichlorobenzene	19.51	2.0	µg/L	20	0	97.6	75	124	0		
1,2-Dibromo-3-chloropropane	22.54	5.0	µg/L	20	0	113	48	130	0		
1,2,4-Trichlorobenzene	22.62	2.0	µg/L	20	0	113	61	141	0		
Hexachlorobutadiene	20.76	2.0	µg/L	20	0	104	45	154	0		
Naphthalene	21.37	5.0	µg/L	20	0	107	41	143	0		
1,2,3-Trichlorobenzene	20.95	2.0	µg/L	20	0	105	40	152	0		
1,3,5-Trichlorobenzene	17.95	2.0	µg/L	20	0	89.8	47	155	0		
Surr: Dibromofluoromethane	26.49	2.0	µg/L	25	0	106	74	138	0		
Surr: 1,2-Dichloroethane-d4	26.78	2.0	µg/L	25	0	107	64	138	0		
Surr: Toluene-d8	27.73	2.0	µg/L	25	0	111	77	128	0		
Surr: 4-Bromofluorobenzene	24.82	2.0	µg/L	25	0	99.3	81	113	0		

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	NA - Not applicable where J values or ND results occur
	RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.		

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: Icsd-09/05/17	Batch ID: R59921	Test Code: SW8260C	Units: µg/L	Analysis Date: 9/5/2017 11:53:00 AM	Prep Date: 9/5/2017							
Client ID:		Run ID: V-3_170905A		SeqNo: 1005279								
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
1,4-Dioxane	135.8	50	µg/L	100	0	136	30	172	136	0.184	20	
Dichlorodifluoromethane	29.66	5.0	µg/L	20	0	148	10	158	27.36	8.07	20	
Chloromethane	23.28	2.0	µg/L	20	0	116	45	144	22.22	4.66	20	
Vinyl chloride	22.78	2.0	µg/L	20	0	114	45	140	24.23	6.17	20	
Chloroethane	25.83	5.0	µg/L	20	0	129	49	140	22.54	13.6	20	
Bromomethane	29.08	2.0	µg/L	20	0	145	54	149	27.66	5.01	20	
Trichlorofluoromethane	32.64	2.0	µg/L	20	0	163	71	154	31.65	3.08	20	S
Diethyl ether	25.8	5.0	µg/L	20	0	129	65	142	24.83	3.83	20	
Acetone	49.99	10	µg/L	40	0	125	10	179	45.62	9.14	20	
1,1-Dichloroethene	25.03	1.0	µg/L	20	0	125	69	152	24.66	1.49	20	
Carbon disulfide	16.21	2.0	µg/L	20	0	81	42	149	16.59	2.32	20	
Methylene chloride	29.15	5.0	µg/L	20	0	146	69	159	25.37	13.9	20	
Methyl tert-butyl ether	24.9	2.0	µg/L	20	0	125	67	144	24.93	0.12	20	
trans-1,2-Dichloroethene	23.11	2.0	µg/L	20	0	116	73	149	22.4	3.12	20	
1,1-Dichloroethane	24.54	2.0	µg/L	20	0	123	74	147	23.9	2.64	20	
Tertiary Butanol	276.6	20	µg/L	200	0	138	43	162	240.1	14.2	20	
2-Butanone	46.38	10	µg/L	40	0	116	16	164	36	25.2	20	R
Diisopropyl ether	25.61	2.0	µg/L	20	0	128	63	149	24.1	6.08	20	
2,2-Dichloropropane	24.37	2.0	µg/L	20	0	122	68	166	27.4	11.7	20	
cis-1,2-Dichloroethene	24.69	2.0	µg/L	20	0	123	74	141	24.51	0.732	20	
Ethyl Tertiary Butyl Ether	24.04	2.0	µg/L	20	0	120	70	148	23.1	3.99	20	
Chloroform	24.18	2.0	µg/L	20	0	121	72	137	24.3	0.495	20	
Tetrahydrofuran	25.22	10	µg/L	20	0	126	53	149	23.98	5.04	20	
Bromochloromethane	24.1	2.0	µg/L	20	0	120	76	145	24.09	0.0415	20	
1,1,1-Trichloroethane	25.53	2.0	µg/L	20	0	128	76	138	25.29	0.945	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

Date: 25-Sep-17

CLIENT: GEI Cons
Work Order: 1708044

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

	24.15	2.0	µg/L	20	0	121	74	138	22.61	6.59	20
1,1-Dichloropropene	24.15	2.0	µg/L	20	0	121	74	138	22.61	6.59	20
Carbon tetrachloride	24.84	2.0	µg/L	20	0	124	70	138	25.19	1.4	20
1,2-Dichloroethane	24.95	2.0	µg/L	20	0	125	74	134	23.09	7.74	20
Benzene	20.59	1.0	µg/L	20	0	103	69	148	20.04	2.71	20
Trichloroethene	24.75	2.0	µg/L	20	0	124	74	136	23.85	3.7	20
1,2-Dichloropropane	24.81	2.0	µg/L	20	0	124	72	137	23.71	4.53	20
Bromodichloromethane	27.66	2.0	µg/L	20	0	138	74	137	25.78	7.04	20
Dibromomethane	25.12	2.0	µg/L	20	0	126	75	129	23.17	8.08	20
Tertiary Amyl Methyl Ether	21.37	2.0	µg/L	20	0	107	72	146	21.27	0.469	20
4-Methyl-2-pentanone	50.5	10	µg/L	40	0	126	49	138	44.61	12.4	20
cis-1,3-Dichloropropene	24.67	1.0	µg/L	20	0	123	72	134	23.25	5.93	20
Toluene	25.78	2.0	µg/L	20	0	129	75	139	23.76	8.16	20
trans-1,3-Dichloropropene	24.9	1.0	µg/L	20	0	125	64	132	23.01	7.89	20
1,1,2-Trichloroethane	25.8	2.0	µg/L	20	0	129	73	138	24.16	6.57	20
1,2-Dibromoethane	25.38	2.0	µg/L	20	0	127	72	136	22.55	11.8	20
2-Hexanone	37.52	10	µg/L	40	0	93.8	35	138	34.43	8.59	20
1,3-Dichloropropane	18.28	2.0	µg/L	20	0	91.4	75	120	18.61	1.79	20
Tetrachloroethene	19.1	2.0	µg/L	20	0	95.5	77	125	19.44	1.76	20
Dibromochloromethane	17.94	2.0	µg/L	20	0	89.7	68	113	18.41	2.59	20
Chlorobenzene	18.3	2.0	µg/L	20	0	91.5	79	120	18.82	2.8	20
1,1,1,2-Tetrachloroethane	18.4	2.0	µg/L	20	0	92	73	118	18.71	1.67	20
Ethylbenzene	18.73	2.0	µg/L	20	0	93.6	75	127	19.26	2.79	20
m,p-Xylene	35.97	2.0	µg/L	40	0	89.9	73	131	37.07	3.01	20
o-Xylene	18.26	2.0	µg/L	20	0	91.3	73	133	18.93	3.6	20
Styrene	19.31	2.0	µg/L	20	0	96.6	69	134	19.6	1.49	20
Bromoform	14.67	2.0	µg/L	20	0	73.4	51	112	14.39	1.93	20
Isopropylbenzene	17.01	2.0	µg/L	20	0	85	68	128	17.82	4.65	20
1,1,2,2-Tetrachloroethane	19.27	2.0	µg/L	20	0	96.4	65	121	19.12	0.781	20
1,2,3-Trichloropropane	14.35	2.0	µg/L	20	0	71.8	59	125	21.73	40.9	20
Bromobenzene	17.1	2.0	µg/L	20	0	85.5	75	120	17.56	2.65	20
n-Propylbenzene	16.88	2.0	µg/L	20	0	84.4	66	131	18.32	8.18	20

RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

2-Chlorotoluene	17.82	2.0	µg/L	20	0	89.1	68	123	18.49	3.69	20
4-Chlorotoluene	18.27	2.0	µg/L	20	0	91.4	69	124	18.34	0.382	20
1,3,5-Trimethylbenzene	18.24	2.0	µg/L	20	0	91.2	68	130	18.58	1.85	20
tert-Butylbenzene	18.08	2.0	µg/L	20	0	90.4	67	129	18.25	0.936	20
1,2,4-Trimethylbenzene	18.36	2.0	µg/L	20	0	91.8	69	132	18.41	0.272	20
sec-Butylbenzene	17.5	2.0	µg/L	20	0	87.5	62	136	17.76	1.47	20
4-Isopropyltoluene	18.06	2.0	µg/L	20	0	90.3	65	137	18.06	0	20
1,3-Dichlorobenzene	18.48	2.0	µg/L	20	0	92.4	71	126	19	2.77	20
1,4-Dichlorobenzene	17.94	2.0	µg/L	20	0	89.7	72	123	18.02	0.445	20
n-Butylbenzene	18.14	2.0	µg/L	20	0	90.7	64	138	18.38	1.31	20
1,2-Dichlorobenzene	18.84	2.0	µg/L	20	0	94.2	75	124	19.51	3.49	20
1,2-Dibromo-3-chloropropane	24	5.0	µg/L	20	0	120	48	130	22.54	6.27	20
1,2,4-Trichlorobenzene	22.35	2.0	µg/L	20	0	112	61	141	22.62	1.2	20
Hexachlorobutadiene	20.36	2.0	µg/L	20	0	102	45	154	20.76	1.95	20
Naphthalene	21.09	5.0	µg/L	20	0	105	41	143	21.37	1.32	20
1,2,3-Trichlorobenzene	21.06	2.0	µg/L	20	0	105	40	152	20.95	0.524	20
1,3,5-Trichlorobenzene	18.11	2.0	µg/L	20	0	90.6	47	155	17.95	0.887	20
Surr: Dibromofluoromethane	28.47	2.0	µg/L	25	0	114	74	138	0	0	0
Surr: 1,2-Dichloroethane-d4	28.47	2.0	µg/L	25	0	114	64	138	0	0	0
Surr: Toluene-d8	30.05	2.0	µg/L	25	0	120	77	128	0	0	0
Surr: 4-Bromofluorobenzene	25.17	2.0	µg/L	25	0	101	81	113	0	0	0

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-01AMS Batch ID: R59921 Test Code: SW8260C Units: µg/L Analysis Date: 9/5/2017 8:20:00 PM Prep Date: 8/30/2017
Client ID: 1700396-WE-2 Run ID: V-3_170905A SeqNo: 1005276

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qualifier
1,4-Dioxane	1331	500	µg/L	1000	0	133	22	171	0			
Dichlorodifluoromethane	252.8	50	µg/L	200	0	126	10	175	0			
Chloromethane	255	20	µg/L	200	0	128	31	160	0			
Vinyl chloride	243.9	20	µg/L	200	0	122	36	159	0			
Chloroethane	295.7	50	µg/L	200	0	148	44	155	0			
Bromomethane	252.5	20	µg/L	200	0	126	44	157	0			
Trichlorofluoromethane	303.5	20	µg/L	200	0	152	60	170	0			
Diethyl ether	241.2	50	µg/L	200	0	121	59	147	0			
Acetone	502.3	100	µg/L	400	0	126	10	166	0			
1,1-Dichloroethene	246.8	10	µg/L	200	0	123	73	161	0			
Carbon disulfide	164.7	20	µg/L	200	0	82.4	45	156	0			
Methylene chloride	288.9	50	µg/L	200	0	144	69	170	0			
Methyl tert-butyl ether	246.5	20	µg/L	200	0	123	60	144	0			
trans-1,2-Dichloroethene	247.6	20	µg/L	200	0	124	71	158	0			
1,1-Dichloroethane	246.2	20	µg/L	200	0	123	71	158	0			
Tertiary Butanol	2532	200	µg/L	2000	0	127	44	149	0			
2-Butanone	439.1	100	µg/L	400	0	110	12	164	0			
Diisopropyl ether	243.2	20	µg/L	200	0	122	70	156	0			
2,2-Dichloropropane	218.5	20	µg/L	200	0	109	48	161	0			
cis-1,2-Dichloroethene	258.6	20	µg/L	200	0	129	66	155	0			
Ethyl Tertiary Butyl Ether	218.8	20	µg/L	200	0	109	64	155	0			
Chloroform	250.5	20	µg/L	200	0	125	69	147	0			
Tetrahydrofuran	272	100	µg/L	200	0	136	44	149	0			
Bromochloromethane	282.7	20	µg/L	200	0	141	67	157	0			
1,1,1-Trichloroethane	267.9	20	µg/L	200	0	134	70	152	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

1,1-Dichloropropene	252.8	20	µg/L	200	0	126	72	150	0
Carbon tetrachloride	259.9	20	µg/L	200	0	130	68	152	0
1,2-Dichloroethane	242	20	µg/L	200	0	121	62	140	0
Benzene	249.1	10	µg/L	200	0	125	66	153	0
Trichloroethene	254.1	20	µg/L	200	0	127	63	152	0
1,2-Dichloropropane	243.5	20	µg/L	200	0	122	68	145	0
Bromodichloromethane	274.7	20	µg/L	200	0	137	71	142	0
Dibromomethane	250.7	20	µg/L	200	0	125	68	136	0
Tertiary Amyl Methyl Ether	226.4	20	µg/L	200	0	113	67	143	0
4-Methyl-2-pentanone	473.6	100	µg/L	400	0	118	31	144	0
cis-1,3-Dichloropropene	239.6	10	µg/L	200	0	120	59	140	0
Toluene	259.9	20	µg/L	200	0	130	65	155	0
trans-1,3-Dichloropropene	231.1	10	µg/L	200	0	116	52	133	0
1,1,2-Trichloroethane	256.4	20	µg/L	200	0	128	69	142	0
1,2-Dibromoethane	252.6	20	µg/L	200	0	126	68	138	0
2-Hexanone	346	100	µg/L	400	0	86.5	20	136	0
1,3-Dichloropropane	179.9	20	µg/L	200	0	90	64	126	0
Tetrachloroethene	215.2	20	µg/L	200	0	108	62	141	0
Dibromochloromethane	195.7	20	µg/L	200	0	97.8	61	118	0
Chlorobenzene	192.5	20	µg/L	200	0	96.2	75	128	0
1,1,1,2-Tetrachloroethane	191.4	20	µg/L	200	0	95.7	68	124	0
Ethylbenzene	200.7	20	µg/L	200	0	100	68	138	0
m,p-Xylene	396.3	20	µg/L	400	0	99.1	65	141	0
o-Xylene	195.4	20	µg/L	200	0	97.7	68	140	0
Styrene	205.3	20	µg/L	200	0	103	62	144	0
Bromoform	151	20	µg/L	200	0	75.5	44	112	0
Isopropylbenzene	175.1	20	µg/L	200	0	87.6	63	139	0
1,1,2,2-Tetrachloroethane	183.6	20	µg/L	200	0	91.8	50	130	0
1,2,3-Trichloropropane	175.3	20	µg/L	200	0	87.6	45	130	0
Bromobenzene	168	20	µg/L	200	0	84	72	124	0
n-Propylbenzene	182.4	20	µg/L	200	0	91.2	67	138	0

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate. NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

2-Chlorotoluene	180.7	20	µg/L	200	0	90.4	69	125	0
4-Chlorotoluene	183.3	20	µg/L	200	0	91.7	70	125	0
1,3,5-Trimethylbenzene	191.2	20	µg/L	200	0	95.6	66	134	0
tert-Butylbenzene	167.9	20	µg/L	200	0	84	65	136	0
1,2,4-Trimethylbenzene	188	20	µg/L	200	0	94	63	139	0
sec-Butylbenzene	186.3	20	µg/L	200	0	93.2	62	144	0
4-Isopropyltoluene	191.2	20	µg/L	200	0	95.6	63	142	0
1,3-Dichlorobenzene	181.1	20	µg/L	200	0	90.6	68	129	0
1,4-Dichlorobenzene	175.6	20	µg/L	200	0	87.8	69	127	0
n-Butylbenzene	203.6	20	µg/L	200	0	102	64	142	0
1,2-Dichlorobenzene	193	20	µg/L	200	0	96.5	73	127	0
1,2-Dibromo-3-chloropropane	208.8	50	µg/L	200	0	104	34	131	0
1,2,4-Trichlorobenzene	227	20	µg/L	200	0	114	51	135	0
Hexachlorobutadiene	204.1	20	µg/L	200	0	102	38	151	0
Naphthalene	213	50	µg/L	200	0	106	22	140	0
1,2,3-Trichlorobenzene	207.2	20	µg/L	200	0	104	27	142	0
1,3,5-Trichlorobenzene	181.1	20	µg/L	200	0	90.6	48	147	0
Surr: Dibromofluoromethane	297.2	20	µg/L	250	0	119	74	138	0
Surr: 1,2-Dichloroethane-d4	265.4	20	µg/L	250	0	106	64	138	0
Surr: Toluene-d8	286.8	20	µg/L	250	0	115	77	128	0
Surr: 4-Bromofluorobenzene	251.8	20	µg/L	250	0	101	81	113	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: 17004044-01AMSD Batch ID: R59921 Test Code: SW8260C Units: µg/L Analysis Date: 9/5/2017 8:55:00 PM Prep Date: 8/30/2017
Client ID: 1700396-WE-2 Run ID: V-3_170905A SeqNo: 1005277

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
1,4-Dioxane	1264	500	µg/L	1000	0	126	22	171	1331	5.14	20	
Dichlorodifluoromethane	206.5	50	µg/L	200	0	103	10	175	252.8	20.2	20	R
Chloromethane	224	20	µg/L	200	0	112	31	160	255	12.9	20	
Vinyl chloride	244.3	20	µg/L	200	0	122	36	159	243.9	0.164	20	
Chloroethane	243.3	50	µg/L	200	0	122	44	155	295.7	19.4	20	
Bromomethane	244.4	20	µg/L	200	0	122	44	157	252.5	3.26	20	
Trichlorofluoromethane	291.3	20	µg/L	200	0	146	60	170	303.5	4.1	20	
Diethyl ether	246.1	50	µg/L	200	0	123	59	147	241.2	2.01	20	
Acetone	506.9	100	µg/L	400	0	127	10	166	502.3	0.912	20	
1,1-Dichloroethene	254.5	10	µg/L	200	0	127	73	161	246.8	3.07	20	
Carbon disulfide	164.2	20	µg/L	200	0	82.1	45	156	164.7	0.304	20	
Methylene chloride	294.5	50	µg/L	200	0	147	69	170	288.9	1.92	20	
Methyl tert-butyl ether	240.9	20	µg/L	200	0	120	60	144	246.5	2.3	20	
trans-1,2-Dichloroethene	245.5	20	µg/L	200	0	123	71	158	247.6	0.852	20	
1,1-Dichloroethane	252.2	20	µg/L	200	0	126	71	158	246.2	2.41	20	
Tertiary Butanol	2530	200	µg/L	2000	0	126	44	149	2532	0.0632	20	
2-Butanone	445.6	100	µg/L	400	0	111	12	164	439.1	1.47	20	
Diisopropyl ether	254.8	20	µg/L	200	0	127	70	156	243.2	4.66	20	
2,2-Dichloropropane	206.6	20	µg/L	200	0	103	48	161	218.5	5.6	20	
cis-1,2-Dichloroethene	252.3	20	µg/L	200	0	126	66	155	258.6	2.47	20	
Ethyl Tertiary Butyl Ether	226.1	20	µg/L	200	0	113	64	155	218.8	3.28	20	
Chloroform	251.4	20	µg/L	200	0	126	69	147	250.5	0.359	20	
Tetrahydrofuran	283.2	100	µg/L	200	0	142	44	149	272	4.03	20	
Bromochloromethane	282.1	20	µg/L	200	0	141	67	157	282.7	0.212	20	
1,1,1-Trichloroethane	278.3	20	µg/L	200	0	139	70	152	267.9	3.81	20	

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

NA - Not applicable where J values or ND results occur

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

	256.9	20	µg/L	200	0	128	72	150	252.8	1.61	20
1,1-Dichloropropene	256.9	20	µg/L	200	0	128	72	150	252.8	1.61	20
Carbon tetrachloride	278.6	20	µg/L	200	0	139	68	152	259.9	6.95	20
1,2-Dichloroethane	237.3	20	µg/L	200	0	119	62	140	242	1.96	20
Benzene	251.1	10	µg/L	200	0	126	66	153	249.1	0.8	20
Trichloroethene	255.7	20	µg/L	200	0	128	63	152	254.1	0.628	20
1,2-Dichloropropane	248.2	20	µg/L	200	0	124	68	145	243.5	1.91	20
Bromodichloromethane	270.2	20	µg/L	200	0	135	71	142	274.7	1.65	20
Dibromomethane	254.3	20	µg/L	200	0	127	68	136	250.7	1.43	20
Tertiary Amyl Methyl Ether	231.9	20	µg/L	200	0	116	67	143	226.4	2.4	20
4-Methyl-2-pentanone	484.7	100	µg/L	400	0	121	31	144	473.6	2.32	20
cis-1,3-Dichloropropene	243.8	10	µg/L	200	0	122	59	140	239.6	1.74	20
Toluene	272.7	20	µg/L	200	0	136	65	155	259.9	4.81	20
trans-1,3-Dichloropropene	238.5	10	µg/L	200	0	119	52	133	231.1	3.15	20
1,1,2-Trichloroethane	256.1	20	µg/L	200	0	128	69	142	256.4	0.117	20
1,2-Dibromoethane	253.9	20	µg/L	200	0	127	68	138	252.6	0.513	20
2-Hexanone	370.8	100	µg/L	400	0	92.7	20	136	346	6.92	20
1,3-Dichloropropane	185.8	20	µg/L	200	0	92.9	64	126	179.9	3.23	20
Tetrachloroethene	210.5	20	µg/L	200	0	105	62	141	215.2	2.21	20
Dibromochloromethane	199.2	20	µg/L	200	0	99.6	61	118	195.7	1.77	20
Chlorobenzene	198.6	20	µg/L	200	0	99.3	75	128	192.5	3.12	20
1,1,1,2-Tetrachloroethane	194.1	20	µg/L	200	0	97	68	124	191.4	1.4	20
Ethylbenzene	208	20	µg/L	200	0	104	68	138	200.7	3.57	20
m,p-Xylene	399.5	20	µg/L	400	0	99.9	65	141	396.3	0.804	20
o-Xylene	199.7	20	µg/L	200	0	99.8	68	140	195.4	2.18	20
Styrene	212.6	20	µg/L	200	0	106	62	144	205.3	3.49	20
Bromoforn	152.3	20	µg/L	200	0	76.2	44	112	151	0.857	20
Isopropylbenzene	182.9	20	µg/L	200	0	91.5	63	139	175.1	4.36	20
1,1,2,2-Tetrachloroethane	180.1	20	µg/L	200	0	90	50	130	183.6	1.92	20
1,2,3-Trichloropropane	182.7	20	µg/L	200	0	91.4	45	130	175.3	4.13	20
Bromobenzene	174.5	20	µg/L	200	0	87.2	72	124	168	3.8	20
n-Propylbenzene	191.2	20	µg/L	200	0	95.6	67	138	182.4	4.71	20

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

2-Chlorotoluene	185.7	20	µg/L	200	0	92.8	69	125	180.7	2.73	20
4-Chlorotoluene	189.8	20	µg/L	200	0	94.9	70	125	183.3	3.48	20
1,3,5-Trimethylbenzene	198	20	µg/L	200	0	99	66	134	191.2	3.49	20
tert-Butylbenzene	173.8	20	µg/L	200	0	86.9	65	136	167.9	3.45	20
1,2,4-Trimethylbenzene	198.1	20	µg/L	200	0	99	63	139	188	5.23	20
sec-Butylbenzene	193.4	20	µg/L	200	0	96.7	62	144	186.3	3.74	20
4-Isopropyltoluene	201.7	20	µg/L	200	0	101	63	142	191.2	5.34	20
1,3-Dichlorobenzene	188	20	µg/L	200	0	94	68	129	181.1	3.74	20
1,4-Dichlorobenzene	184.1	20	µg/L	200	0	92	69	127	175.6	4.73	20
n-Butylbenzene	209.5	20	µg/L	200	0	105	64	142	203.6	2.86	20
1,2-Dichlorobenzene	199.2	20	µg/L	200	0	99.6	73	127	193	3.16	20
1,2-Dibromo-3-chloropropane	223.1	50	µg/L	200	0	112	34	131	208.8	6.62	20
1,2,4-Trichlorobenzene	240.6	20	µg/L	200	0	120	51	135	227	5.82	20
Hexachlorobutadiene	231.3	20	µg/L	200	0	116	38	151	204.1	12.5	20
Naphthalene	225.7	50	µg/L	200	0	113	22	140	213	5.79	20
1,2,3-Trichlorobenzene	220.7	20	µg/L	200	0	110	27	142	207.2	6.31	20
1,3,5-Trichlorobenzene	188.7	20	µg/L	200	0	94.4	48	147	181.1	4.11	20
Surr: Dibromofluoromethane	297.5	20	µg/L	250	0	119	74	138	0	0	0
Surr: 1,2-Dichloroethane-d4	256	20	µg/L	250	0	102	64	138	0	0	0
Surr: Toluene-d8	278.3	20	µg/L	250	0	111	77	128	0	0	0
Surr: 4-Bromofluorobenzene	255	20	µg/L	250	0	102	81	113	0	0	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 NA - Not applicable where J values or ND results occur

B - Analyte detected in the associated Method Blank

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-WE-2**Lab Order:** 1708044**Collection Date:** 8/30/2017 10:30:00 AM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-01B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8270D SEMIVOLATILE ORGANICS		SW8270D				Analyst: NS
Phenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2-Chlorophenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzyl alcohol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
2-Methylphenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Methylphenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Hexachloroethane	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Nitrobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Isophorone	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzoic acid	ND	21		µg/L	1	9/5/2017 7:10:00 PM
2-Nitrophenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Naphthalene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Chloroaniline	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Chloro-3-methylphenol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:10:00 PM
Dimethyl phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Acenaphthylene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
3-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:10:00 PM
4-Nitrophenol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
2,4-Dinitrophenol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
Acenaphthene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Dibenzofuran	ND	10		µg/L	1	9/5/2017 7:10:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-WE-2**Lab Order:** 1708044**Collection Date:** 8/30/2017 10:30:00 AM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-01B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Fluorene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:10:00 PM
4,6-Dinitro-2-methylphenol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	9/5/2017 7:10:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	9/5/2017 7:10:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Hexachlorobenzene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Pentachlorophenol	ND	21		µg/L	1	9/5/2017 7:10:00 PM
Phenanthrene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Anthracene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Carbazole	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Fluoranthene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Pyrene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
3,3'-Dichlorobenzidine	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benz(a)anthracene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Chrysene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	9/5/2017 7:10:00 PM
Surr: 2-Fluorophenol	41.2	25-62		%REC	1	9/5/2017 7:10:00 PM
Surr: Phenol-d5	35.2	13-43		%REC	1	9/5/2017 7:10:00 PM
Surr: Nitrobenzene-d5	58.0	36-108		%REC	1	9/5/2017 7:10:00 PM
Surr: 2-Fluorobiphenyl	67.0	44-117		%REC	1	9/5/2017 7:10:00 PM
Surr: 2,4,6-Tribromophenol	89.2	39-131		%REC	1	9/5/2017 7:10:00 PM
Surr: 4-Terphenyl-d14	105	44-122		%REC	1	9/5/2017 7:10:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT:	GEI Consultants, Inc.	Client Sample ID:	1700396-SW-1
Lab Order:	1708044	Collection Date:	8/30/2017 12:00:00 PM
Project:	1700396 MPA Berth 10 Final Design	Matrix:	GROUNDWATER
Lab ID:	1708044-02B		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8270D SEMIVOLATILE ORGANICS		SW8270D				Analyst: NS
Phenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2-Chlorophenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzyl alcohol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
2-Methylphenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Methylphenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Hexachloroethane	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Nitrobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Isophorone	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzoic acid	ND	21		µg/L	1	9/5/2017 7:34:00 PM
2-Nitrophenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Naphthalene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Chloroaniline	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Chloro-3-methylphenol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:34:00 PM
Dimethyl phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Acenaphthylene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
3-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:34:00 PM
4-Nitrophenol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
2,4-Dinitrophenol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
Acenaphthene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Dibenzofuran	ND	10		µg/L	1	9/5/2017 7:34:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Client Sample ID: 1700396-SW-1

Lab Order: 1708044

Collection Date: 8/30/2017 12:00:00 PM

Project: 1700396 MPA Berth 10 Final Design

Matrix: GROUNDWATER

Lab ID: 1708044-02B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Fluorene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Nitroaniline	ND	21		µg/L	1	9/5/2017 7:34:00 PM
4,6-Dinitro-2-methylphenol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	9/5/2017 7:34:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	9/5/2017 7:34:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Hexachlorobenzene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Pentachlorophenol	ND	21		µg/L	1	9/5/2017 7:34:00 PM
Phenanthrene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Anthracene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Carbazole	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Fluoranthene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Pyrene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
3,3'-Dichlorobenzidine	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benz(a)anthracene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Chrysene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	9/5/2017 7:34:00 PM
Surr: 2-Fluorophenol	51.4	25-62		%REC	1	9/5/2017 7:34:00 PM
Surr: Phenol-d5	44.3	13-43	S	%REC	1	9/5/2017 7:34:00 PM
Surr: Nitrobenzene-d5	73.8	36-108		%REC	1	9/5/2017 7:34:00 PM
Surr: 2-Fluorobiphenyl	79.6	44-117		%REC	1	9/5/2017 7:34:00 PM
Surr: 2,4,6-Tribromophenol	97.8	39-131		%REC	1	9/5/2017 7:34:00 PM
Surr: 4-Terphenyl-d14	119	44-122		%REC	1	9/5/2017 7:34:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-27476 Batch ID: 27476 Test Code: SW8270D Units: µg/L Analysis Date: 9/5/2017 3:27:00 PM Prep Date: 8/31/2017
 Client ID: Run ID: SV-4_170905A SeqNo: 1005222

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qualifier
Phenol	ND	10	µg/L								
Bis(2-chloroethyl)ether	ND	10	µg/L								
2-Chlorophenol	ND	10	µg/L								
1,3-Dichlorobenzene	ND	10	µg/L								
1,4-Dichlorobenzene	ND	10	µg/L								
Benzyl alcohol	ND	20	µg/L								
2-Methylphenol	ND	10	µg/L								
1,2-Dichlorobenzene	ND	10	µg/L								
Bis(2-chloroisopropyl)ether	ND	10	µg/L								
4-Methylphenol	ND	10	µg/L								
N-Nitrosodi-n-propylamine	ND	10	µg/L								
Hexachloroethane	ND	10	µg/L								
Nitrobenzene	ND	10	µg/L								
Isophorone	ND	10	µg/L								
2,4-Dimethylphenol	ND	10	µg/L								
Benzoic acid	ND	20	µg/L								
2-Nitrophenol	ND	10	µg/L								
Bis(2-chloroethoxy)methane	ND	10	µg/L								
2,4-Dichlorophenol	ND	10	µg/L								
1,2,4-Trichlorobenzene	ND	10	µg/L								
Naphthalene	ND	10	µg/L								
4-Chloroaniline	ND	10	µg/L								
Hexachlorobutadiene	ND	10	µg/L								
4-Chloro-3-methylphenol	ND	20	µg/L								
2-Methylnaphthalene	ND	10	µg/L								

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design
 QC SUMMARY REPORT
 Method Blank

Hexachlorocyclopentadiene	ND	10	µg/L
2,4,6-Trichlorophenol	ND	10	µg/L
2,4,5-Trichlorophenol	ND	10	µg/L
2-Chloronaphthalene	ND	10	µg/L
2-Nitroaniline	ND	20	µg/L
Dimethyl phthalate	12.61	10	µg/L
2,6-Dinitrotoluene	ND	10	µg/L
Acenaphthylene	ND	10	µg/L
3-Nitroaniline	ND	20	µg/L
4-Nitrophenol	ND	20	µg/L
2,4-Dinitrophenol	ND	20	µg/L
Acenaphthene	ND	10	µg/L
2,4-Dinitrotoluene	ND	10	µg/L
Dibenzofuran	ND	10	µg/L
Diethyl phthalate	ND	10	µg/L
4-Chlorophenyl phenyl ether	ND	10	µg/L
Fluorene	ND	10	µg/L
4-Nitroaniline	ND	20	µg/L
4,6-Dinitro-2-methylphenol	ND	20	µg/L
N-Nitrosodiphenylamine	ND	10	µg/L
1,2-Diphenylhydrazine (as Azobe	ND	10	µg/L
4-Bromophenyl phenyl ether	ND	10	µg/L
Hexachlorobenzene	ND	10	µg/L
Pentachlorophenol	ND	20	µg/L
Phenanthrene	ND	10	µg/L
Anthracene	ND	10	µg/L
Carbazole	ND	10	µg/L
Di-n-butyl phthalate	ND	10	µg/L
Fluoranthene	ND	10	µg/L
Pyrene	ND	10	µg/L
Butyl benzyl phthalate	ND	10	µg/L

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

Date: 25-Sep-17

QC SUMMARY REPORT

Y REPORT

Method Blank

Method Blank

[illegible]

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	NA - Not applicable where J values or ND results occur
	RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.		

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-27476 Batch ID: 27476 Test Code: SW8270D Units: µg/L Analysis Date: 9/5/2017 3:52:00 PM Prep Date: 8/31/2017
 Client ID: Run ID: SV-4_170905A SeqNo: 1005223

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qualifier
Phenol	26.72	10	µg/L	75	0	35.6	13	47	0			
Bis(2-chloroethyl)ether	40.26	10	µg/L	50	0	80.5	42	102	0			
2-Chlorophenol	58.57	10	µg/L	75	0	78.1	39	110	0			
1,3-Dichlorobenzene	38.91	10	µg/L	50	0	77.8	34	99	0			
1,4-Dichlorobenzene	40.82	10	µg/L	50	0	81.6	35	99	0			
Benzyl alcohol	29.27	20	µg/L	50	0	58.5	31	96	0			
2-Methylphenol	52.5	10	µg/L	75	0	70	35	100	0			
1,2-Dichlorobenzene	39.54	10	µg/L	50	0	79.1	37	99	0			
Bis(2-chloroisopropyl)ether	64.56	10	µg/L	50	0	129	31	104	0			S
4-Methylphenol	62.93	10	µg/L	150	0	42	23	61	0			
N-Nitrosodi-n-propylamine	45.89	10	µg/L	50	0	91.8	43	111	0			
Hexachloroethane	41.74	10	µg/L	50	0	83.5	33	97	0			
Nitrobenzene	44.14	10	µg/L	50	0	88.3	46	102	0			
Isophorone	36.08	10	µg/L	50	0	72.2	38	105	0			
2,4-Dimethylphenol	55.39	10	µg/L	75	0	73.9	38	110	0			J
Benzoic acid	19.68	20	µg/L	75	0	26.2	10	55	0			
2-Nitrophenol	59.27	10	µg/L	75	0	79	44	118	0			
Bis(2-chloroethoxy)methane	42.67	10	µg/L	50	0	85.3	50	106	0			
2,4-Dichlorophenol	64.52	10	µg/L	75	0	86	50	117	0			
1,2,4-Trichlorobenzene	44.21	10	µg/L	50	0	88.4	41	103	0			
Naphthalene	42.25	10	µg/L	50	0	84.5	45	100	0			
4-Chloroaniline	32.4	10	µg/L	50	0	64.8	28	113	0			
Hexachlorobutadiene	46.63	10	µg/L	50	0	93.3	40	101	0			
4-Chloro-3-methylphenol	63.91	20	µg/L	75	0	85.2	47	119	0			
2-Methylnaphthalene	41.61	10	µg/L	50	0	83.2	44	107	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.		QC SUMMARY REPORT									
Work Order:	1708044	Laboratory Control Spike									
Project:	1700396 MPA Berth 10 Final Design										
		4.96	10	µg/L	50	0	9.92	10	91	0	JS
Hexachlorocyclopentadiene		76.21	10	µg/L	75	0	102	48	129	0	
2,4,6-Trichlorophenol		85.45	10	µg/L	75	0	114	45	131	0	
2,4,5-Trichlorophenol		50.52	10	µg/L	50	0	101	48	107	0	
2-Chloronaphthalene		58.75	20	µg/L	50	0	118	44	122	0	
2-Nitroaniline		67.71	10	µg/L	50	0	135	58	114	0	BS
Dimethyl phthalate		50.91	10	µg/L	50	0	102	57	115	0	
2,6-Dinitrotoluene		44.96	10	µg/L	50	0	89.9	52	110	0	
Acenaphthylene		47.31	20	µg/L	50	0	94.6	50	121	0	
3-Nitroaniline		51.98	20	µg/L	75	0	69.3	14	53	0	S
4-Nitrophenol		73.39	20	µg/L	75	0	97.9	19	122	0	
2,4-Dinitrophenol		48.17	10	µg/L	50	0	96.3	52	110	0	
Acenaphthene		52.68	10	µg/L	50	0	105	59	116	0	
2,4-Dinitrotoluene		48.81	10	µg/L	50	0	97.6	51	119	0	
Dibenzofuran		51.81	10	µg/L	50	0	104	57	115	0	
Diethyl phthalate		53.29	10	µg/L	50	0	107	56	114	0	
4-Chlorophenyl phenyl ether		49.42	10	µg/L	50	0	98.8	54	115	0	
Fluorene		49.69	20	µg/L	50	0	99.4	49	119	0	
4-Nitroaniline		71.45	20	µg/L	75	0	95.3	40	127	0	
4,6-Dinitro-2-methylphenol		41.82	10	µg/L	50	0	83.6	51	118	0	
N-Nitrosodiphenylamine		42.15	10	µg/L	50	0	84.3	43	118	0	
1,2-Diphenylhydrazine (as Azobe		47.71	10	µg/L	50	0	95.4	56	115	0	
4-Bromophenyl phenyl ether		50.17	10	µg/L	50	0	100	56	114	0	
Hexachlorobenzene		97.53	20	µg/L	75	0	130	39	128	0	
Pentachlorophenol		46.33	10	µg/L	50	0	92.7	54	112	0	
Phenanthrene		45.34	10	µg/L	50	0	90.7	54	113	0	
Anthracene		45.51	10	µg/L	50	0	91	52	120	0	
Carbazole		47.86	10	µg/L	50	0	95.7	58	114	0	
Di-n-butyl phthalate		51.3	10	µg/L	50	0	103	58	115	0	
Fluoranthene		46.7	10	µg/L	50	0	93.4	53	119	0	
Pyrene		45.8	10	µg/L	50	0	91.6	53	120	0	
Butyl benzyl phthalate											

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

Date: 25-Sep-17

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

	10	µg/L	50	0	93.7	55	122	0
Bis(2-ethylhexyl)phthalate	46.84	10	µg/L	50	0	93.7	55	122
3,3'-Dichlorobenzidine	58.26	10	µg/L	50	0	117	31	126
Benz(a)anthracene	49.14	10	µg/L	50	0	98.3	53	118
Chrysene	49.5	10	µg/L	50	0	99	56	116
Di-n-octyl phthalate	45.92	10	µg/L	50	0	91.8	50	124
Benzo(b)fluoranthene	48.2	10	µg/L	50	0	96.4	55	113
Benzo(k)fluoranthene	54.11	10	µg/L	50	0	108	59	115
Benzo(a)pyrene	49.19	10	µg/L	50	0	98.4	56	112
Dibenz(a,h)anthracene	51.1	10	µg/L	50	0	102	51	113
Indeno(1,2,3-cd)pyrene	51.69	10	µg/L	50	0	103	51	113
Benzo(g,h,i)perylene	48.84	10	µg/L	50	0	97.7	50	113
Surr: 2-Fluorophenol	35.68	1.0	µg/L	75	0	47.6	25	62
Surr: Phenol-d5	23.53	1.0	µg/L	75	0	31.4	13	43
Surr: Nitrobenzene-d5	44.04	1.0	µg/L	50	0	88.1	36	108
Surr: 2-Fluorobiphenyl	46.07	1.0	µg/L	50	0	92.1	44	117
Surr: 2,4,6-Tribromophenol	82.25	1.0	µg/L	75	0	110	39	131
Surr: 4-Terphenyl-d14	51.7	1.0	µg/L	50	0	103	44	122

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	NA - Not applicable where J values or ND results occur
	RL - Reporting Limit: defined as the lowest concentration the laboratory can accurately quantitate.		

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: LCSD-27476	Batch ID: 27476	Test Code: SW8270D		Units: µg/L	Analysis Date: 9/5/2017 4:16:00 PM		Prep Date: 8/31/2017					
Client ID:	Run ID: SV-4_170905A	SeqNo: 1005224										
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Phenol	25.46	10	µg/L	75	0	33.9	13	47	26.72	4.83	25	
Bis(2-chloroethyl)ether	38.27	10	µg/L	50	0	76.5	42	102	40.26	5.07	25	
2-Chlorophenol	54.66	10	µg/L	75	0	72.9	39	110	58.57	6.91	25	
1,3-Dichlorobenzene	36.95	10	µg/L	50	0	73.9	34	99	38.91	5.17	25	
1,4-Dichlorobenzene	38.66	10	µg/L	50	0	77.3	35	99	40.82	5.44	25	
Benzyl alcohol	26.15	20	µg/L	50	0	52.3	31	96	29.27	11.3	25	
2-Methylphenol	49.15	10	µg/L	75	0	65.5	35	100	52.5	6.59	25	
1,2-Dichlorobenzene	38.41	10	µg/L	50	0	76.8	37	99	39.54	2.9	25	
Bis(2-chloroisopropyl)ether	61.06	10	µg/L	50	0	122	31	104	64.56	5.57	25	S
4-Methylphenol	54.07	10	µg/L	150	0	36	23	61	62.93	15.1	25	
N-Nitrosodi-n-propylamine	41.99	10	µg/L	50	0	84	43	111	45.89	8.88	25	
Hexachloroethane	43.46	10	µg/L	50	0	86.9	33	97	41.74	4.04	25	
Nitrobenzene	42.58	10	µg/L	50	0	85.2	46	102	44.14	3.6	25	
Isophorone	32.65	10	µg/L	50	0	65.3	38	105	36.08	9.98	25	
2,4-Dimethylphenol	52.49	10	µg/L	75	0	70	38	110	55.39	5.38	25	
Benzoic acid	15.65	20	µg/L	75	0	20.9	10	55	19.68	22.8	25	J
2-Nitrophenol	55.22	10	µg/L	75	0	73.6	44	118	59.27	7.07	25	
Bis(2-chloroethoxy)methane	38.91	10	µg/L	50	0	77.8	50	106	42.67	9.22	25	
2,4-Dichlorophenol	60.21	10	µg/L	75	0	80.3	50	117	64.52	6.91	25	
1,2,4-Trichlorobenzene	41.86	10	µg/L	50	0	83.7	41	103	44.21	5.46	25	
Naphthalene	39.39	10	µg/L	50	0	78.8	45	100	42.25	7.01	25	
4-Chloroaniline	30.05	10	µg/L	50	0	60.1	28	113	32.4	7.53	25	
Hexachlorobutadiene	43.87	10	µg/L	50	0	87.7	40	101	46.63	6.1	25	
4-Chloro-3-methylphenol	61.37	20	µg/L	75	0	81.8	47	119	63.91	4.05	25	
2-Methylnaphthalene	38.03	10	µg/L	50	0	76.1	44	107	41.61	8.99	25	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth I0 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Hexachlorocyclopentadiene	4.45	10	µg/L	50	0	8.9	10	91	4.96	10.8	25	JS
2,4,6-Trichlorophenol	74.42	10	µg/L	75	0	99.2	48	129	76.21	2.38	25	
2,4,5-Trichlorophenol	80.22	10	µg/L	75	0	107	45	131	85.45	6.31	25	
2-Chloronaphthalene	46.31	10	µg/L	50	0	92.6	48	107	50.52	8.7	25	
2-Nitroaniline	59.22	20	µg/L	50	0	118	44	122	58.75	0.797	25	
Dimethyl phthalate	64.4	10	µg/L	50	0	129	58	114	67.71	5.01	25	BS
2,6-Dinitrotoluene	48.34	10	µg/L	50	0	96.7	57	115	50.91	5.18	25	
Acenaphthylene	43.22	10	µg/L	50	0	86.4	52	110	44.96	3.95	25	
3-Nitroaniline	46.13	20	µg/L	50	0	92.3	50	121	47.31	2.53	25	
4-Nitrophenol	47.13	20	µg/L	75	0	62.8	14	53	51.98	9.79	25	S
2,4-Dinitrophenol	70.93	20	µg/L	75	0	94.6	19	122	73.39	3.41	25	
Acenaphthene	45.04	10	µg/L	50	0	90.1	52	110	48.17	6.72	25	
2,4-Dinitrotoluene	51.76	10	µg/L	50	0	104	59	116	52.68	1.76	25	
Dibenzofuran	46.83	10	µg/L	50	0	93.7	51	119	48.81	4.14	25	
Diethyl phthalate	50.55	10	µg/L	50	0	101	57	115	51.81	2.46	25	
4-Chlorophenyl phenyl ether	51.92	10	µg/L	50	0	104	56	114	53.29	2.6	25	
Fluorene	48.2	10	µg/L	50	0	96.4	54	115	49.42	2.5	25	
4-Nitroaniline	48.77	20	µg/L	50	0	97.5	49	119	49.69	1.87	25	
4,6-Dinitro-2-methylphenol	67.8	20	µg/L	75	0	90.4	40	127	71.45	5.24	25	
N-Nitrosodiphenylamine	39.67	10	µg/L	50	0	79.3	51	118	41.82	5.28	25	
1,2-Diphenylhydrazine (as Azobe	40.84	10	µg/L	50	0	81.7	43	118	42.15	3.16	25	
4-Bromophenyl phenyl ether	44.85	10	µg/L	50	0	89.7	56	115	47.71	6.18	25	
Hexachlorobenzene	41.1	10	µg/L	50	0	82.2	56	114	50.17	19.9	25	
Pentachlorophenol	88.78	20	µg/L	75	0	118	39	128	97.53	9.39	25	
Phenanthrene	42.98	10	µg/L	50	0	86	54	112	46.33	7.5	25	
Anthracene	42.27	10	µg/L	50	0	84.5	54	113	45.34	7.01	25	
Carbazole	40.56	10	µg/L	50	0	81.1	52	120	45.51	11.5	25	
Di-n-butyl phthalate	41.82	10	µg/L	50	0	83.6	58	114	47.86	13.5	25	
Fluoranthene	44.74	10	µg/L	50	0	89.5	58	115	51.3	13.7	25	
Pyrene	41.36	10	µg/L	50	0	82.7	53	119	46.7	12.1	25	
Butyl benzyl phthalate	40.09	10	µg/L	50	0	80.2	53	120	45.8	13.3	25	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analytic detected below quantitation limits R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth I0 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Bis(2-ethylhexyl)phthalate	41.97	10	µg/L	50	0	83.9	55	122	46.84	11	25
3,3'-Dichlorobenzidine	50.29	10	µg/L	50	0	101	31	126	58.26	14.7	25
Benz(a)anthracene	42.36	10	µg/L	50	0	84.7	53	118	49.14	14.8	25
Chrysene	42.08	10	µg/L	50	0	84.2	56	116	49.5	16.2	25
Di-n-octyl phthalate	40.12	10	µg/L	50	0	80.2	50	124	45.92	13.5	25
Benzo(b)fluoranthene	46.73	10	µg/L	50	0	93.5	55	113	48.2	3.1	25
Benzo(k)fluoranthene	39.8	10	µg/L	50	0	79.6	59	115	54.11	30.5	25
Benzo(a)pyrene	42.21	10	µg/L	50	0	84.4	56	112	49.19	15.3	25
Dibenz(a,h)anthracene	46.93	10	µg/L	50	0	93.9	51	113	51.1	8.51	25
Indeno(1,2,3-cd)pyrene	47.28	10	µg/L	50	0	94.6	51	113	51.69	8.91	25
Benzo(g,h,i)perylene	45.9	10	µg/L	50	0	91.8	50	113	48.84	6.21	25
Surr: 2-Fluorophenol	31.97	1.0	µg/L	75	0	42.6	25	62	0	0	0
Surr: Phenol-d5	20.38	1.0	µg/L	75	0	27.2	13	43	0	0	0
Surr: Nitrobenzene-d5	39.86	1.0	µg/L	50	0	79.7	36	108	0	0	0
Surr: 2-Fluorobiphenyl	42.55	1.0	µg/L	50	0	85.1	44	117	0	0	0
Surr: 2,4,6-Tribromophenol	73.14	1.0	µg/L	75	0	97.5	39	131	0	0	0
Surr: 4-Terphenyl-d14	44.11	1.0	µg/L	50	0	88.2	44	122	0	0	0

R

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 NA - Not applicable where J values or ND results occur

B - Analyte detected in the associated Method Blank

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Client Sample ID: 1700396-WE-2

Lab Order: 1708044

Collection Date: 8/30/2017 10:30:00 AM

Project: 1700396 MPA Berth 10 Final Design

Matrix: GROUNDWATER

Lab ID: 1708044-01B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PAH BY EPA 8270D SIM		SW8270D				Analyst: NS
Naphthalene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
2-Methylnaphthalene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Acenaphthylene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Acenaphthene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Fluorene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Phenanthrene	ND	0.072		µg/L	1	9/6/2017 5:38:00 PM
Anthracene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Fluoranthene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Pyrene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Benz(a)anthracene	ND	0.062		µg/L	1	9/6/2017 5:38:00 PM
Chrysene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Benzo(b)fluoranthene	ND	0.082		µg/L	1	9/6/2017 5:38:00 PM
Benzo(k)fluoranthene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Benzo(a)pyrene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Dibenz(a,h)anthracene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Benzo(g,h,i)perylene	ND	0.10		µg/L	1	9/6/2017 5:38:00 PM
Surr: Nitrobenzene-d5	61.4	33-107		%REC	1	9/6/2017 5:38:00 PM
Surr: 2-Fluorobiphenyl	54.8	39-107		%REC	1	9/6/2017 5:38:00 PM
Surr: 4-Terphenyl-d14	98.0	31-133		%REC	1	9/6/2017 5:38:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-SW-1**Lab Order:** 1708044**Collection Date:** 8/30/2017 12:00:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1708044-02B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PAH BY EPA 8270D SIM		SW8270D				Analyst: NS
Naphthalene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
2-Methylnaphthalene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Acenaphthylene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Acenaphthene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Fluorene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Phenanthrene	ND	0.073		µg/L	1	9/6/2017 6:13:00 PM
Anthracene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Fluoranthene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Pyrene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Benz(a)anthracene	ND	0.062		µg/L	1	9/6/2017 6:13:00 PM
Chrysene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Benzo(b)fluoranthene	ND	0.083		µg/L	1	9/6/2017 6:13:00 PM
Benzo(k)fluoranthene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Benzo(a)pyrene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Dibenz(a,h)anthracene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Benzo(g,h,i)perylene	ND	0.10		µg/L	1	9/6/2017 6:13:00 PM
Surr: Nitrobenzene-d5	71.6	33-107		%REC	1	9/6/2017 6:13:00 PM
Surr: 2-Fluorobiphenyl	63.6	39-107		%REC	1	9/6/2017 6:13:00 PM
Surr: 4-Terphenyl-d14	106	31-133		%REC	1	9/6/2017 6:13:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MIB-27476	Batch ID: 27476	Test Code: SW8270D	Units: µg/L	Analysis Date: 9/6/2017 12:17:00 PM	Prep Date: 8/31/2017
Client ID:	Run ID: SV-4_170906A	SeqNo: 1005251			

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Naphthalene	ND	0.10	µg/L									
2-Methylnaphthalene	ND	0.10	µg/L									
Acenaphthylene	ND	0.10	µg/L									
Acenaphthene	ND	0.10	µg/L									
Fluorene	ND	0.10	µg/L									
Phenanthrene	ND	0.070	µg/L									
Anthracene	ND	0.10	µg/L									
Fluoranthene	ND	0.10	µg/L									
Pyrene	ND	0.10	µg/L									
Benz(a)anthracene	ND	0.060	µg/L									
Chrysene	ND	0.10	µg/L									
Benzo(b)fluoranthene	ND	0.080	µg/L									
Benzo(k)fluoranthene	ND	0.10	µg/L									
Benzo(a)pyrene	ND	0.10	µg/L									
Dibenz(a,h)anthracene	ND	0.10	µg/L									
Indeno(1,2,3-cd)pyrene	ND	0.10	µg/L									
Benzo(g,h,i)perylene	ND	0.10	µg/L									
Surr. Nitrobenzene-d5	7.345	1.0	µg/L	10	0	73.5	33	107	0			
Surr. 2-Fluorobiphenyl	6.5	1.0	µg/L	10	0	65	39	107	0			
Surr. 4-Terphenyl-d14	8.55	1.0	µg/L	10	0	85.5	31	133	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur

B - Analyte detected in the associated Method Blank

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-27476 Batch ID: 27476 Test Code: SW8270D Units: µg/L Analysis Date: 9/6/2017 12:53:00 PM Prep Date: 8/31/2017
Client ID: Run ID: SV-4_170906A SeqNo: 1005252

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Naphthalene	4.125	0.10	µg/L	5	0	82.5	32	113	0			
2-Methylnaphthalene	3.84	0.10	µg/L	5	0	76.8	32	121	0			
Acenaphthylene	4.31	0.10	µg/L	5	0	86.2	38	126	0			
Acenaphthene	4.045	0.10	µg/L	5	0	80.9	38	123	0			
Fluorene	4.515	0.10	µg/L	5	0	90.3	47	127	0			
Phenanthrene	5.12	0.070	µg/L	5	0	102	51	117	0			
Anthracene	4.17	0.10	µg/L	5	0	83.4	52	123	0			
Fluoranthene	5.24	0.10	µg/L	5	0	105	52	125	0			
Pyrene	5.765	0.10	µg/L	5	0	115	48	134	0			
Benz(a)anthracene	5.275	0.060	µg/L	5	0	106	51	125	0			
Chrysene	5.255	0.10	µg/L	5	0	105	52	130	0			
Benzo(b)fluoranthene	5.455	0.080	µg/L	5	0	109	56	129	0			
Benzo(k)fluoranthene	6.035	0.10	µg/L	5	0	121	51	134	0			
Benzo(a)pyrene	5.305	0.10	µg/L	5	0	106	53	129	0			
Dibenz(a,h)anthracene	5.115	0.10	µg/L	5	0	102	52	127	0			
Indeno(1,2,3-cd)pyrene	5.16	0.10	µg/L	5	0	103	53	124	0			
Benzo(g,h,i)perylene	5.17	0.10	µg/L	5	0	103	53	126	0			
Surr: Nitrobenzene-d5	0.96	0.50	µg/L	1	0	96	33	107	0			
Surr: 2-Fluorobiphenyl	0.96	0.50	µg/L	1	0	96	39	107	0			
Surr: 4-Terphenyl-d14	1.325	1.0	µg/L	1	0	132	31	133	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc. Work Order: 1708044 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: LCSD-27476	Batch ID: 27476	Test Code: SW8270D	Units: µg/L	Analysis Date: 9/6/2017 1:29:00 PM	Prep Date: 8/31/2017							
Client ID:	Run ID: SV-4_170906A	SeqNo: 1005253										
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Result
Naphthalene	3.785	0.10	µg/L	5	0	75.7	32	113	4.125	8.6	25	
2-Methylnaphthalene	3.835	0.10	µg/L	5	0	76.7	32	121	3.84	0.13	25	
Acenaphthylene	4.085	0.10	µg/L	5	0	81.7	38	126	4.31	5.36	25	
Acenaphthene	3.84	0.10	µg/L	5	0	76.8	38	123	4.045	5.2	25	
Fluorene	4.3	0.10	µg/L	5	0	86	47	127	4.515	4.88	25	
Phenanthrene	4.64	0.070	µg/L	5	0	92.8	51	117	5.12	9.84	25	
Anthracene	3.715	0.10	µg/L	5	0	74.3	52	123	4.17	11.5	25	
Fluoranthene	4.495	0.10	µg/L	5	0	89.9	52	125	5.24	15.3	25	
Pyrene	4.885	0.10	µg/L	5	0	97.7	48	134	5.765	16.5	25	
Benz(a)anthracene	4.55	0.060	µg/L	5	0	91	51	125	5.275	14.8	25	
Chrysene	4.465	0.10	µg/L	5	0	89.3	52	130	5.255	16.3	25	
Benzo(b)fluoranthene	4.97	0.080	µg/L	5	0	99.4	56	129	5.455	9.3	25	
Benzo(k)fluoranthene	4.885	0.10	µg/L	5	0	97.7	51	134	6.035	21.1	25	
Benzo(a)pyrene	4.645	0.10	µg/L	5	0	92.9	53	129	5.305	13.3	25	
Dibenz(a,h)anthracene	4.475	0.10	µg/L	5	0	89.5	52	127	5.115	13.3	25	
Indeno(1,2,3-cd)pyrene	4.485	0.10	µg/L	5	0	89.7	53	124	5.16	14	25	
Benzo(g,h,i)perylene	4.495	0.10	µg/L	5	0	89.9	53	126	5.17	14	25	
Surr: Nitrobenzene-d5	0.915	0.50	µg/L	1	0	91.5	33	107	0	0	0	
Surr: 2-Fluorobiphenyl	0.86	0.50	µg/L	1	0	86	39	107	0	0	0	
Surr: 4-Terphenyl-d14	1.085	1.0	µg/L	1	0	108	31	133	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur

B - Analyte detected in the associated Method Blank

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1708044**Lab ID:** 1708044-01**Collection Date:** 8/30/2017 10:30:00 AM**Collection Time:****Client Sample ID:** 1700396-WE-2**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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PCBS BY EPA8082**SW8082A****Analyst: NS**

Aroclor 1016	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1221	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1232	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1242	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1248	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1254	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Aroclor 1260	ND	0.21		µg/L	1	9/7/2017 2:49:00 PM
Surr: Decachlorobiphenyl	76.1	27-131		%REC	1	9/7/2017 2:49:00 PM
Surr: Tetrachloro-m-xylene	75.0	37-130		%REC	1	9/7/2017 2:49:00 PM

Lab ID: 1708044-02**Collection Date:** 8/30/2017 12:00:00 PM**Collection Time:****Client Sample ID:** 1700396-SW-1**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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PCBS BY EPA8082**SW8082A****Analyst: NS**

Aroclor 1016	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1221	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1232	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1242	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1248	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1254	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Aroclor 1260	ND	0.24		µg/L	1	9/7/2017 3:16:00 PM
Surr: Decachlorobiphenyl	87.4	27-131		%REC	1	9/7/2017 3:16:00 PM
Surr: Tetrachloro-m-xylene	85.9	37-130		%REC	1	9/7/2017 3:16:00 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-27482 Batch ID: 27482 Test Code: SW8082A Units: µg/L Analysis Date: 9/7/2017 1:27:00 PM Prep Date: 9/5/2017
 Client ID: Run ID: GC-ELVIS_170907A SeqNo: 1005541

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	ND	0.20	µg/L									
Aroclor 1221	ND	0.20	µg/L									
Aroclor 1232	ND	0.20	µg/L									
Aroclor 1242	ND	0.20	µg/L									
Aroclor 1248	ND	0.20	µg/L									
Aroclor 1254	ND	0.20	µg/L									
Aroclor 1260	ND	0.20	µg/L									
Surr: Decachlorobiphenyl	0.04913	0	µg/L	0.064	0	76.8	27	131	0			
Surr: Tetrachloro-m-xylene	0.0571	0	µg/L	0.064	0	89.2	37	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-27482	Batch ID: 27482	Test Code: SW8082A	Units: µg/L	Analysis Date: 9/7/2017 1:54:00 PM	Prep Date: 9/5/2017						
Client ID:		Run ID: GC-ELVIS_170907A		SeqNo: 1005542							
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	%REC	%RPD	RPDLimit	Qua
Aroclor 1016	3.052	0.20	µg/L	4	0	119	44	76.3		0	
Aroclor 1260	3.32	0.20	µg/L	4	0	123	48	83		0	
Surr: Decachlorobiphenyl	0.05112	0	µg/L	0.064	0	131	27	79.9		0	
Surr: Tetrachloro-m-xylene	0.05072	0	µg/L	0.064	0	130	37	79.2		0	

Sample ID: LCSD-27482	Batch ID: 27482	Test Code: SW8082A	Units: µg/L	Analysis Date: 9/7/2017 2:21:00 PM	Prep Date: 9/5/2017						
Client ID:		Run ID: GC-ELVIS_170907A		SeqNo: 1005543							
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	%REC	%RPD	RPDLimit	Qua
Aroclor 1016	3.327	0.20	µg/L	4	0	119	44	83.2	8.65	20	
Aroclor 1260	3.581	0.20	µg/L	4	0	123	48	89.5	7.56	20	
Surr: Decachlorobiphenyl	0.05273	0	µg/L	0.064	0	131	27	82.4	0	0	
Surr: Tetrachloro-m-xylene	0.05814	0	µg/L	0.064	0	130	37	90.8	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1708044**Lab ID:** 1708044-01**Collection Date:** 8/30/2017 10:30:00 AM**Collection Time:****Client Sample ID:** 1700396-WE-2**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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ICP- TOTAL METALS BY 200.7**E200.7****Analyst: AL**

Cadmium	ND	8.0		µg/L	2	9/1/2017
Chromium	ND	20		µg/L	2	9/1/2017
Copper	ND	50		µg/L	2	9/1/2017
Iron	27,000	200		µg/L	2	9/1/2017
Nickel	ND	80		µg/L	2	9/1/2017
Silver	ND	14		µg/L	2	9/1/2017
Zinc	470	40		µg/L	2	9/1/2017

ARSENIC, TOTAL**E200.9_AS****Analyst: AL**

Arsenic	5.4	2.0	PS	µg/L	1	9/6/2017 1:08:00 PM
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LEAD, TOTAL**E200.9_PB****Analyst: AL**

Lead	ND	5.0	PS	µg/L	1	9/6/2017 6:04:52 PM
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ANTIMONY, TOTAL**E200.9_SB****Analyst: AL**

Antimony	ND	5.0		µg/L	1	9/5/2017 3:20:14 PM
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SELENIUM, TOTAL**E200.9_SE****Analyst: AL**

Selenium	ND	5.0		µg/L	1	9/5/2017 6:54:25 PM
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MERCURY, TOTAL**E245.1****Analyst: AL**

Mercury	ND	0.20		µg/L	1	9/6/2017 3:15:20 PM
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AMRO Environmental Laboratories Corp.**Date:** 25-Sep-17**CLIENT:** GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1708044**Lab ID:** 1708044-02**Collection Date:** 8/30/2017 12:00:00 PM**Collection Time:****Client Sample ID:** 1700396-SW-1**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP- TOTAL METALS BY 200.7		E200.7				Analyst: AL
Cadmium	ND	12		µg/L	3	9/1/2017
Chromium	ND	30		µg/L	3	9/1/2017
Copper	ND	75		µg/L	3	9/1/2017
Iron	ND	300		µg/L	3	9/1/2017
Nickel	ND	120		µg/L	3	9/1/2017
Silver	ND	21		µg/L	3	9/1/2017
Zinc	ND	60		µg/L	3	9/1/2017
ARSENIC, TOTAL		E200.9_AS				Analyst: AL
Arsenic	ND	2.0	PS	µg/L	1	9/6/2017 1:35:18 PM
LEAD, TOTAL		E200.9_PB				Analyst: AL
Lead	ND	5.0	PS	µg/L	1	9/6/2017 6:32:00 PM
ANTIMONY, TOTAL		E200.9_SB				Analyst: AL
Antimony	ND	5.0		µg/L	1	9/5/2017 3:45:41 PM
SELENIUM, TOTAL		E200.9_SE				Analyst: AL
Selenium	ND	5.0		µg/L	1	9/5/2017 7:22:04 PM
MERCURY, TOTAL		E245.1				Analyst: AL
Mercury	ND	0.20		µg/L	1	9/6/2017 3:19:12 PM

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-27472 **Batch ID:** 27472 **Test Code:** E200.7 **Units:** µg/L **Analysis Date:** 9/1/2017 1:34:09 PM **Prep Date:** 8/31/2017
Client ID: Run ID: ICP-OPTIMA_170901A **SeqNo:** 1005140

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Cadmium	ND	4.0	µg/L									
Chromium	ND	10	µg/L									
Copper	ND	25	µg/L									
Iron	ND	100	µg/L									
Nickel	ND	40	µg/L									
Silver	ND	7.0	µg/L									
Zinc	ND	20	µg/L									

Sample ID: MB-27472 **Batch ID:** 27472 **Test Code:** E200.9_As **Units:** µg/L **Analysis Date:** 9/6/2017 1:02:25 PM **Prep Date:** 8/31/2017
Client ID: Run ID: AANALYST 600_170906 **SeqNo:** 1005401

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Arsenic	ND	2.0	µg/L									

Sample ID: MB-27472 **Batch ID:** 27472 **Test Code:** E200.9_Pb **Units:** µg/L **Analysis Date:** 9/6/2017 5:58:51 PM **Prep Date:** 8/31/2017
Client ID: Run ID: AANALYST 600_170906 **SeqNo:** 1005479

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Lead	ND	5.0	µg/L									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-27472 **Batch ID:** 27472 **Test Code:** E200.9_Sb **Units:** µg/L **Analysis Date:** 9/5/2017 3:07:41 PM **Prep Date:** 8/31/2017
Client ID: **Run ID:** AANALYST 600_170905 **SeqNo:** 1005317

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample	%RPD	RPDLimit	Que
Antimony	ND	5.0	µg/L									

Sample ID: MB-27472 **Batch ID:** 27472 **Test Code:** E200.9_Se **Units:** µg/L **Analysis Date:** 9/5/2017 6:41:45 PM **Prep Date:** 8/31/2017
Client ID: **Run ID:** AANALYST 600_170905 **SeqNo:** 1005359

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample	%RPD	RPDLimit	Que
Selenium	ND	5.0	µg/L									

Sample ID: mb-27477 **Batch ID:** 27477 **Test Code:** E245.1 **Units:** µg/L **Analysis Date:** 9/6/2017 2:18:11 PM **Prep Date:** 9/5/2017
Client ID: **Run ID:** HG-FIMS_170906A **SeqNo:** 1005586

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample	%RPD	RPDLimit	Que
Mercury	ND	0.20	µg/L									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-27472		Batch ID: 27472		Test Code: E200.7		Units: µg/L		Analysis Date: 9/1/2017 2:03:23 PM		Prep Date: 8/31/2017	
Client ID:		Run ID: ICP-OPTIMA_170901A		SeqNo: 1005142							
Analyte	QC Sample Result	RL	Units	Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit
Cadmium	773.6	4.0	µg/L	800	0	96.7	85	115	0		
Chromium	4074	10	µg/L	3976	0	102	85	115	0		
Copper	1998	25	µg/L	2004	0	99.7	85	115	0		
Iron	4279	100	µg/L	4004	0	107	85	115	0		
Nickel	4134	40	µg/L	3984	0	104	85	115	0		
Silver	394.7	7.0	µg/L	400	0	98.7	85	115	0		
Zinc	3856	20	µg/L	3984	0	96.8	85	115	0		

Sample ID: LCS-27472		Batch ID: 27472		Test Code: E200.9_As		Units: µg/L		Analysis Date: 9/6/2017 1:05:12 PM		Prep Date: 8/31/2017	
Client ID:		Run ID: AANALYST 600_170906		SeqNo: 1005402							
Analyte	QC Sample Result	RL	Units	Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit
Arsenic	20.4	2.0	µg/L	20	0	102	85	115	0		
Sample ID: LCS-27472		Batch ID: 27472		Test Code: E200.9_Pb		Units: µg/L		Analysis Date: 9/6/2017 6:01:38 PM		Prep Date: 8/31/2017	
Client ID:		Run ID: AANALYST 600_170906		SeqNo: 1005480							
Analyte	QC Sample Result	RL	Units	Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit
Lead	19.63	5.0	µg/L	20	0	98.2	85	115	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-27472	Batch ID: 27472	Test Code: E200.9_Sb	Units: µg/L	Analysis Date: 9/5/2017 3:17:05 PM	Prep Date: 8/31/2017
Client ID:	Run ID: AANALYST 600_170905	SeqNo: 1005320			
Analyte	QC Sample Result	QC Spike Amount	Original Sample	LowLimit	HighLimit
Antimony	19.63	20 µg/L	0	85	115
			0		0

Sample ID: LCS-27472	Batch ID: 27472	Test Code: E200.9_Se	Units: µg/L	Analysis Date: 9/5/2017 6:51:28 PM	Prep Date: 8/31/2017
Client ID:	Run ID: AANALYST 600_170905	SeqNo: 1005362			
Analyte	QC Sample Result	QC Spike Amount	Original Sample	LowLimit	HighLimit
Selenium	19.62	20 µg/L	0	85	115
			0		0

Sample ID: LCS-27477	Batch ID: 27477	Test Code: E245.1	Units: µg/L	Analysis Date: 9/6/2017 2:21:56 PM	Prep Date: 9/5/2017
Client ID:	Run ID: HG-FIMS_170906A	SeqNo: 1005587			
Analyte	QC Sample Result	QC Spike Amount	Original Sample	LowLimit	HighLimit
Mercury	3.787	0.20 µg/L	0	80	120
			0		0

Sample ID: LCS-27477	Batch ID: 27477	Test Code: E245.1	Units: µg/L	Analysis Date: 9/6/2017 2:25:42 PM	Prep Date: 9/5/2017
Client ID:	Run ID: HG-FIMS_170906A	SeqNo: 1005588			
Analyte	QC Sample Result	QC Spike Amount	Original Sample	LowLimit	HighLimit
Mercury	3.825	0.20 µg/L	0	80	120
			0		0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-01HMS Batch ID: 27472 Test Code: E200.7 Units: µg/L Analysis Date: 9/1/2017 3:14:48 PM Prep Date: 8/31/2017
Client ID: 1700396-WE-2 Run ID: ICP-OPTIMA_170901A SeqNo: 1005149

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Cadmium	728.2	4.0	µg/L	800	0	91	70	130	0			
Chromium	3784	10	µg/L	3976	0	95.2	70	130	0			
Copper	2394	25	µg/L	2004	19.61	119	70	130	0			
Iron	29090	100	µg/L	4004	24950	118	70	130	0			
Nickel	3916	40	µg/L	3984	7.658	98.1	70	130	0			
Silver	453.8	7.0	µg/L	400	0	113	70	130	0			
Zinc	4168	20	µg/L	3984	454.3	93.2	70	130	0			

Sample ID: 1708044-01HMSD Batch ID: 27472 Test Code: E200.7 Units: µg/L Analysis Date: 9/1/2017 3:21:31 PM Prep Date: 8/31/2017
Client ID: 1700396-WE-2 Run ID: ICP-OPTIMA_170901A SeqNo: 1005150

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Cadmium	741.7	4.0	µg/L	800	0	92.7	70	130	728.2	1.85	20	
Chromium	3899	10	µg/L	3976	0	98.1	70	130	3784	2.97	20	
Copper	2482	25	µg/L	2004	19.61	123	70	130	2394	3.59	20	
Iron	29090	100	µg/L	4004	24950	103	70	130	29690	2.06	20	
Nickel	4040	40	µg/L	3984	7.658	101	70	130	3916	3.12	20	
Silver	475.4	7.0	µg/L	400	0	119	70	130	453.8	4.65	20	
Zinc	4244	20	µg/L	3984	454.3	95.1	70	130	4168	1.82	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-01HMS		Batch ID: 27472	Test Code: E200.9_As		Units: µg/L	Analysis Date: 9/6/2017 1:24:03 PM				Prep Date: 8/31/2017		
Client ID: 1700396-WE-2			Run ID:	AANALYST 600_170906		SeqNo:	1005406					
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample
Arsenic	19.01	2.0	µg/L	20	5.415	68	70	130	0			S
Sample ID: 1708044-01HMSD		Batch ID: 27472	Test Code: E200.9_As		Units: µg/L	Analysis Date: 9/6/2017 1:26:50 PM				Prep Date: 8/31/2017		
Client ID: 1700396-WE-2			Run ID:	AANALYST 600_170906		SeqNo:	1005407					
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample
Arsenic	19.49	2.0	µg/L	20	5.415	70.4	70	130	19.01	2.49	0	
Sample ID: 1708044-01HMS		Batch ID: 27472	Test Code: E200.9_Pb		Units: µg/L	Analysis Date: 9/6/2017 6:25:59 PM				Prep Date: 8/31/2017		
Client ID: 1700396-WE-2			Run ID:	AANALYST 600_170906		SeqNo:	1005484					
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample
Lead	10.08	5.0	µg/L	20	0	50.4	70	130	0			S
Sample ID: 1708044-01HMSD		Batch ID: 27472	Test Code: E200.9_Pb		Units: µg/L	Analysis Date: 9/6/2017 6:29:13 PM				Prep Date: 8/31/2017		
Client ID: 1700396-WE-2			Run ID:	AANALYST 600_170906		SeqNo:	1005485					
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample
Lead	8.27	5.0	µg/L	20	0	41.4	70	130	10.08	19.7	20	S

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-01HMS	Batch ID: 27472	Test Code: E200.9_Sb		Units: µg/L	Analysis Date: 9/5/2017 3:40:07 PM		Prep Date: 8/31/2017		
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170905			SeqNo: 1005324				
Analyte	QC Sample Result	RL	QC Spike Original Sample		Original Sample		%RPD	RPDLimit	Qua
			Units	Amount	Result	%REC			
Antimony	18.45	5.0	µg/L	20	0	92.2	70	130	0

Sample ID: 1708044-01HMSD	Batch ID: 27472	Test Code: E200.9_Sb		Units: µg/L	Analysis Date: 9/5/2017 3:42:54 PM		Prep Date: 8/31/2017					
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170905			SeqNo: 1005325							
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Antimony	18.3	5.0	µg/L	20	0	91.5	70	130	18.45	0.816	20	

Sample ID: 1708044-01HMS		Batch ID: 27472	Test Code: E200.9_Se		Units: µg/L	Analysis Date: 9/5/2017 7:15:26 PM		Prep Date: 8/31/2017					
Client ID: 1700396-WE-2			Run ID: AANALYST 600_170905			SeqNo: 1005366							
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount		Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Selenium	ND	5.0	µg/L	20		0	0	70	130	0			S

Sample ID: 1708044-01HMSD		Batch ID: 27472	Test Code: E200.9_Se		Units: µg/L	Analysis Date: 9/5/2017 7:18:45 PM		Prep Date: 8/31/2017				
Client ID: 1700396-WE-2			Run ID: AANALYST 600_170905			SeqNo: 1005367						
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu:
Selenium	ND	5.0	µg/L	20	0	0	70	130	0	0	20	S

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708040-02bms	Batch ID: 27477	Test Code: E245.1	Units: µg/L	Analysis Date: 9/6/2017 2:37:02 PM	Prep Date: 9/5/2017
Client ID:		Run ID: HG-FIMS_170906A		SeqNo: 1005591	
Analyte	QC Sample Result	QC Spike Amount	Original Sample Result	LowLimit	HighLimit
Mercury	3.249	4 µg/L	0	75	125
			%REC	%RPD	RPDLimit
			81.2	0	0
Sample ID: 1708040-02bmsd	Batch ID: 27477	Test Code: E245.1	Units: µg/L	Analysis Date: 9/6/2017 2:40:51 PM	Prep Date: 9/5/2017
Client ID:		Run ID: HG-FIMS_170906A		SeqNo: 1005592	
Analyte	QC Sample Result	QC Spike Amount	Original Sample Result	LowLimit	HighLimit
Mercury	3.645	4 µg/L	0	75	125
			%REC	%RPD	RPDLimit
			91.1	11.5	20

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

NA - Not applicable where J values or ND results occur

B - Analyte detected in the associated Method Blank

NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 1708044-01HD	Batch ID: 27472	Test Code: E200.7	Units: µg/L	Analysis Date: 9/1/2017 2:43:37 PM	Prep Date: 8/31/2017							
Client ID: 1700396-WE-2	Run ID: ICP-OPTIMA_170901A	SeqNo: 1005148										
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Cadmium	ND	4.0	µg/L	0	0	0	0	0	0	0	20	
Chromium	ND	10	µg/L	0	0	0	0	0	0	0	20	
Copper	13.22	25	µg/L	0	0	0	0	0	19.61	38.9	20	JR
Iron	26130	100	µg/L	0	0	0	0	0	24950	4.61	20	JR
Nickel	5.975	40	µg/L	0	0	0	0	0	7.658	24.7	20	JR
Silver	ND	7.0	µg/L	0	0	0	0	0	0	0	20	
Zinc	472.2	20	µg/L	0	0	0	0	0	454.3	3.87	20	

Sample ID: 1708044-01HD	Batch ID: 27472	Test Code: E200.9_As		Units: µg/L		Analysis Date: 9/6/2017 1:20:54 PM		Prep Date: 8/31/2017				
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170906		SeqNo: 1005405								
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Arsenic	1.736	2.0	µg/L	0	0	0	0	0	5.415	103	20	JR

Sample ID: 1708044-01HD	Batch ID: 27472	Test Code: E200.9_Pb		Units: µg/L	Analysis Date: 9/6/2017 6:23:12 PM		Prep Date: 8/31/2017		
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170906			SeqNo: 1005483				
Analyte	QC Sample Result	RL	QC Spike Original Sample		Original Sample		%RPD	RPDLimit	Qty
			Units	Amount	Result	or MS Result			
Lead	ND	5.0	µg/L	0	0	0	0	0	20

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 1708044-01HD	Batch ID: 27472	Test Code: E200.9_Sb	Units: µg/L	Analysis Date: 9/5/2017 3:37:19 PM	Prep Date: 8/31/2017
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170905		SeqNo: 1005323	
Analyte	QC Sample Result	QC Spike Original Sample Amount	QC Spike Original Sample Result	Original Sample HighLimit	Original Sample LowLimit
Antimony	ND	5.0 µg/L	0	0	0
Sample ID: 1708044-01HD	Batch ID: 27472	Test Code: E200.9_Se	Units: µg/L	Analysis Date: 9/5/2017 7:12:28 PM	Prep Date: 8/31/2017
Client ID: 1700396-WE-2		Run ID: AANALYST 600_170905		SeqNo: 1005365	
Analyte	QC Sample Result	QC Spike Original Sample Amount	QC Spike Original Sample Result	Original Sample HighLimit	Original Sample LowLimit
Selenium	ND	5.0 µg/L	0	0	0
Sample ID: 1708040-02bd	Batch ID: 27477	Test Code: E245.1	Units: µg/L	Analysis Date: 9/6/2017 2:33:16 PM	Prep Date: 9/5/2017
Client ID:		Run ID: HG-FIMS_170908A		SeqNo: 1005590	
Analyte	QC Sample Result	QC Spike Original Sample Amount	QC Spike Original Sample Result	Original Sample HighLimit	Original Sample LowLimit
Mercury	ND	0.20 µg/L	0	0	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Project: I700396 MPA Berth 10 Final Design**Lab Order:** I708044**Lab ID:** I708044-01**Collection Date:** 8/30/2017 10:30:00 AM**Collection Time:****Client Sample ID:** I700396-WE-2**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	8/31/2017 10:15:00 AM
HEXAVALENT CHROMIUM, DISSOLVED		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	8/31/2017 10:15:00 AM
OIL & GREASE, TPH (NON-POLAR MATERIAL)		E1664				Analyst: AL
SGT-Hexane Extractable Material	ND	5.0		mg/L	1	9/12/2017
TOTAL SUSPENDED SOLIDS		SM2540 D				Analyst: MB
Suspended Solids (Residue, Non-Filterable)	68	4.0		mg/L	1	8/31/2017
CHLORINE, TOTAL RESIDUAL (MODIFIED)		M4500-CL G				Analyst: AL
Chlorine, Total Residual	ND	0.10	H	mg/L	1	8/31/2017 9:15:00 AM
CYANIDE, TOTAL		SM4500-CN C,E				Analyst: AL
Cyanide	ND	0.010		mg/L	1	9/11/2017
AMMONIA AS NITROGEN		SM4500-NH3, C				Analyst: AL
Nitrogen, Ammonia (As N)	ND	1.0		mg/L	1	9/11/2017

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1708044**Lab ID:** 1708044-02**Collection Date:** 8/30/2017 12:00:00 PM**Collection Time:****Client Sample ID:** 1700396-SW-1**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	8/31/2017 10:15:00 AM
HEXAVALENT CHROMIUM, DISSOLVED		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	8/31/2017 10:15:00 AM
OIL & GREASE, TPH (NON-POLAR MATERIAL)		E1664				Analyst: AL
SGT-Hexane Extractable Material	ND	5.0		mg/L	1	9/12/2017
TOTAL SUSPENDED SOLIDS		SM2540 D				Analyst: MB
Suspended Solids (Residue, Non-Filterable)	4.0	4.0		mg/L	1	8/31/2017
CHLORINE, TOTAL RESIDUAL (MODIFIED)		M4500-CL G				Analyst: AL
Chlorine, Total Residual	ND	0.10	H	mg/L	1	8/31/2017 9:15:00 AM
CYANIDE, TOTAL		SM4500-CN C,E				Analyst: AL
Cyanide	ND	0.010		mg/L	1	9/11/2017
AMMONIA AS NITROGEN		SM4500-NH3, C				Analyst: AL
Nitrogen, Ammonia (As N)	ND	1.0		mg/L	1	9/11/2017

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005759	
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result
Chromium, Hexavalent	ND	0.010	mg/L		
Sample ID: MB-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005759	
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result
Chromium, Hexavalent	ND	0.010	mg/L		
Sample ID: MB-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005759	
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result
Chromium, Hexavalent	ND	0.010	mg/L		
Sample ID: MB-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005759	
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result
Chromium, Hexavalent	ND	0.010	mg/L		
Sample ID: MB-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005759	
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result
Chromium, Hexavalent	ND	0.010	mg/L		

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MB-R59950 Batch ID: R59950 Test Code: E1664 Units: mg/L Analysis Date: 9/12/2017 Prep Date:
 Client ID: Run ID: ING-WET_170912C SeqNo: 1005753
 Analyte QC Sample Result ND 5.0 mg/L QC Spike Original Sample Result %REC LowLimit HighLimit Original Sample or MS Result %RPD RPDLimit Qu
 SGT-Hexane Extractable Material

Sample ID: MB-R59918 Batch ID: R59918 Test Code: SM2540 D Units: mg/L Analysis Date: 8/31/2017 Prep Date:
 Client ID: Run ID: ING-WET_170831A SeqNo: 1005238
 Analyte QC Sample Result ND 4.0 mg/L QC Spike Original Sample Result %REC LowLimit HighLimit Original Sample or MS Result %RPD RPDLimit Qu
 Suspended Solids (Residue, Non

Sample ID: MB-R59941 Batch ID: R59941 Test Code: M4500-CI G Units: mg/L Analysis Date: 8/31/2017 9:15:00 AM Prep Date:
 Client ID: Run ID: ING-WET_170831B SeqNo: 1005647
 Analyte QC Sample Result ND 0.10 mg/L QC Spike Original Sample Result %REC LowLimit HighLimit Original Sample or MS Result %RPD RPDLimit Qu
 Chlorine, Total Residual

Sample ID: MB-R59946 Batch ID: R59946 Test Code: SM4500-CN C Units: mg/L Analysis Date: 9/11/2017 Prep Date:
 Client ID: Run ID: ING-WET_170911C SeqNo: 1005687
 Analyte QC Sample Result ND 0.010 mg/L QC Spike Original Sample Result %REC LowLimit HighLimit Original Sample or MS Result %RPD RPDLimit Qu
 Cyanide

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT Method Blank

Sample ID: MB-R59945	Batch ID: R59945	Test Code: SM4500-NH3, Units: mg/L		Analysis Date: 9/11/2017		Prep Date:						
Client ID:		Run ID: ING-WET_170911B		SeqNo: 1005680								
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Nitrogen, Ammonia (As N)	ND	1.0	mg/L									

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005760	
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
Chromium, Hexavalent	0.101	0.010	mg/L 0.1	0	101
				80	120
					0
Sample ID: LCS-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005760	
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
Chromium, Hexavalent	0.101	0.010	mg/L 0.1	0	101
				80	120
					0
Sample ID: LCS-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005760	
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
Chromium, Hexavalent	0.101	0.010	mg/L 0.1	0	101
				80	120
					0
Sample ID: LCS-R59951	Batch ID: R59951	Test Code: SW7196A	Units: mg/L	Analysis Date: 8/31/2017 10:15:00 AM	Prep Date:
Client ID:		Run ID: ING-WET_170831C		SeqNo: 1005760	
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
Chromium, Hexavalent	0.101	0.010	mg/L 0.1	0	101
				80	120
					0

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-R59950	Batch ID: R59950	Test Code: E1664	Units: mg/L	Analysis Date: 9/12/2017	Prep Date:
Client ID:	Run ID: ING-WET_170912C	SeqNo: 1005754			
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
SGT-Hexane Extractable Material	20.1	5.0	mg/L 20	42.4	144
			0	100	0

Sample ID: LCS-R59918	Batch ID: R59918	Test Code: SM2540 D	Units: mg/L	Analysis Date: 8/31/2017	Prep Date:
Client ID:	Run ID: ING-WET_170831A	SeqNo: 1005239			
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
Suspended Solids (Residue, Non	949	4.0	mg/L 951	97	103
			0	99.8	0

Sample ID: LCS-R59941	Batch ID: R59941	Test Code: M4500-CI G	Units: mg/L	Analysis Date: 8/31/2017 9:15:00 AM	Prep Date:
Client ID:	Run ID: ING-WET_170831B	SeqNo: 1005648			
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
Chlorine, Total Residual	1.096	0.10	mg/L 1	90	110
			0	110	0

Sample ID: LCS-R59946	Batch ID: R59946	Test Code: SM4500-CN C	Units: mg/L	Analysis Date: 9/11/2017	Prep Date:
Client ID:	Run ID: ING-WET_170911C	SeqNo: 1005688			
Analyte	QC Sample Result	RL	QC Spike Original Sample Amount	LowLimit	HighLimit
Cyanide	0.206	0.010	mg/L 0.2	84	121
			0	103	0

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1708044
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-R59945	Batch ID: R59945	Test Code: SM4500-NH3, Units: mg/L	Analysis Date: 9/11/2017	Prep Date:
Client ID:	Run ID: ING-WET_170911B		SeqNo: 1005681	
Analyte	QC Sample Result	QC Spike Original Sample Amount	QC Spike Original Sample Result	QC Spike Original Sample %RPD
Nitrogen, Ammonia (As N)	9.38	10 mg/L	0 93.8	88 95 0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.
Work Order: 1708044
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-02EMS Batch ID: R59951 Test Code: SW7196A Units: mg/L Analysis Date: 8/31/2017 10:15:00 AM Prep Date:
 Client ID: 1700396-SW-1 Run ID: ING-WET_170831C SeqNo: 1005764

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample Result
Chromium, Hexavalent	0.1	0.010	mg/L	0.1	0.004	96	75	125	0			

Sample ID: 1708044-02EMS Batch ID: R59951 Test Code: SW7196A Units: mg/L Analysis Date: 8/31/2017 10:15:00 AM Prep Date:
 Client ID: 1700396-SW-1 Run ID: ING-WET_170831C SeqNo: 1005764

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample Result
Chromium, Hexavalent	0.1	0.010	mg/L	0.1	0.004	96	75	125	0			

Sample ID: 1708044-02EMS Batch ID: R59951 Test Code: SW7196A Units: mg/L Analysis Date: 8/31/2017 10:15:00 AM Prep Date:
 Client ID: 1700396-SW-1 Run ID: ING-WET_170831C SeqNo: 1005764

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample Result
Chromium, Hexavalent	0.1	0.010	mg/L	0.1	0.004	96	75	125	0			

Sample ID: 1708044-02EMS Batch ID: R59951 Test Code: SW7196A Units: mg/L Analysis Date: 8/31/2017 10:15:00 AM Prep Date:
 Client ID: 1700396-SW-1 Run ID: ING-WET_170831C SeqNo: 1005764

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample Result
Chromium, Hexavalent	0.1	0.010	mg/L	0.1	0.004	96	75	125	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 25-Sep-17

CLIENT: GEI Consultants, Inc.

Work Order: 1708044

Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 1708044-01CMS		Batch ID: R59950	Test Code: E1664		Units: mg/L	Analysis Date: 9/12/2017		Prep Date:	
Client ID: 1700396-WE-2			Run ID: ING-WET_170912C			SeqNo: 1005757			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	LowLimit	HighLimit	%RPD	RPDLimit
SGT-Hexane Extractable Material	20.2	5.0	mg/L	20	0.6	98	78	114	0
Sample ID: 1708044-02DMS		Batch ID: R59941	Test Code: M4500-Cl G		Units: mg/L	Analysis Date: 8/31/2017 9:15:00 AM		Prep Date:	
Client ID: 1700396-SW-1			Run ID: ING-WET_170831B			SeqNo: 1005652			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	LowLimit	HighLimit	%RPD	RPDLimit
Chlorine, Total Residual	1.073	0.10	mg/L	1	0	107	89	118	0
Sample ID: 1708044-01GMS		Batch ID: R59946	Test Code: SM4500-CN C		Units: mg/L	Analysis Date: 9/11/2017		Prep Date:	
Client ID: 1700396-WE-2			Run ID: ING-WET_170911C			SeqNo: 1005692			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	LowLimit	HighLimit	%RPD	RPDLimit
Cyanide	0.13	0.010	mg/L	0.2	0	65	68	119	0
Sample ID: 1708044-01IMS		Batch ID: R59945	Test Code: SM4500-NH3,		Units: mg/L	Analysis Date: 9/11/2017		Prep Date:	
Client ID: 1700396-WE-2			Run ID: ING-WET_170911B			SeqNo: 1005685			
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	LowLimit	HighLimit	%RPD	RPDLimit
Nitrogen, Ammonia (As N)	9.1	1.0	mg/L	10	0	91	78	107	0

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

NA - Not applicable where J values or ND results occur

Thursday, September 21, 2017

Nancy Stewart
AMRO
111 Herrick Street
Merrimack NH 03054

Project Name: MPA Berth 10 Final Design

Lab ID: 17090159

Project #: 1700396

Date Received: 9/15/2017

Project Location: MA

Control #: 17090159

Dear Nancy Stewart

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on "as received" weight unless denoted "dry".

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe's certified parameter list can be found at <http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx>



Jay Chrystal - President/Laboratory Director



AMRO

Nancy Stewart

111 Herrick Street

Merrimack NH 03054

Control #: 17090159

Project Number: 1700396

Project Name: MPA Berth 10 Final Design

Project Location: MA

Lab ID: 17090159

Date: 9/21/2017

Lab ID: 17090159

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	N/A
Was there evidence of cooling or were samples received on the same day as collection?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Were samples submitted with a chain of custody?	Yes

Sample	Method	Client Identity	Matrix	Analyst
17090159-001	SW 9056	1700396-WE-2	Groundwater	PaulF

Comment: no comment

* Blank comment sections denote "No Comment"



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Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

AMRO

Nancy Stewart
111 Herrick Street
Merrimack NH 03054

Control #: 17090159
Project Number: 1700396
Project Name: MPA Berth 10 Final Design
Project Location: MA

Analytical Results

Lab ID: 17090159
Date: 9/21/2017

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
17090159-001	1700396-WE-2	8/30/2017 10:30:00 AM	Groundwater
Composite Start Date and Time		8/30/2017 10:30:00 AM	Composite End Date and Time

Parameter	Method	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Chloride	SW 9056	15300 mg/L		9/19/2017	1	1



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AMRO

Nancy Stewart
111 Herrick Street
Merrimack NH 03054

Control #: 17090159
Project Number: 1700396
Project Name: MPA Berth 10 Final Design
Project Location: MA

Analytical Results

Lab ID: 17090159
Date: 9/21/2017

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
17090159-002	1700396-SW-1	8/30/2017 12:00:00 PM	Groundwater
Composite Start Date and Time 8/30/2017 12:00:00 PM		Composite End Date and Time	

Parameter	Method	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Chloride	SW 9056	20200 mg/L		9/19/2017	1	1

Qualifier: Description:

B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">" the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

Office: (603) 424-2022
Fax: (603) 429-8496
web: www.amrolabs.com

Page 5 of 5

Work Order:

17090159

Date Analyzed:

9/19/2017

Analyst:

PF

Method Blank ID:	MB091917	
	Method Blank Results	Detection Limits
Chloride	<DL	1.0 (mg/L)

Control Spike ID	DIMS091917	
	Spiked Amount	LCS mg/L
Chloride	1.00	1.04
		RPD



111 Herrick Street, Merrimack, NH 03054
TEL: (603) 424-2022 • FAX: (603) 429-8496
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November 02, 2017

ANALYTICAL TEST RESULTS

Molly Greer
GEI Consultants, Inc.
400 Unicorn Park Drive
Woburn, MA 01801
TEL: (781) 721-4000
FAX: (781) 721-4073

Subject: 1700396 MPA Berth 10 Final Design

Workorder No.: 1710012

Dear Molly Greer:

AMRO Environmental Laboratories Corp. received 3 samples on 10/5/2017 for the analyses presented in the following report.

AMRO is accredited in accordance with NELAC and certifies that these test results meet all the requirements of NELAC, where applicable, unless otherwise noted in the case narrative.

The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt. Please be advised that any unused sample volume and sample extracts will be stored for a period of 60 days from sample receipt date (90 days for samples from New York). After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This report consists of a total of 80 pages. This letter is an integral part of your data report. All results in this project relate only to the sample(s) as received by the laboratory and documented in the Chain-of-Custody. This report shall not be reproduced except in full, without the written approval of the laboratory. If you have any questions regarding this project in the future, please refer to the Workorder Number above.

Sincerely,

Nancy Stewart
Vice President

State Certifications: NH (NELAC): 1001, MA: M-NH012, CT: PH-0758, NY: 11278 (NELAC), ME: NH012 and 1001.

Hard copy of the State Certification is available upon request.

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design
Lab Order: 1710012
Date Received: 10/5/2017

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date	Collection Time
1710012-01A	1700396-WE-10	10/4/2017	11:30 AM
1710012-01B	1700396-WE-10	10/4/2017	11:30 AM
1710012-01C	1700396-WE-10	10/4/2017	11:30 AM
1710012-01D	1700396-WE-10	10/4/2017	11:30 AM
1710012-01E	1700396-WE-10	10/4/2017	11:30 AM
1710012-01F	1700396-WE-10	10/4/2017	11:30 AM
1710012-01G	1700396-WE-10	10/4/2017	11:30 AM
1710012-01H	1700396-WE-10	10/4/2017	11:30 AM
1710012-01I	1700396-WE-10	10/4/2017	11:30 AM
1710012-02A	1700396-GEI-212	10/4/2017	12:30 PM
1710012-02B	1700396-GEI-212	10/4/2017	12:30 PM
1710012-02C	1700396-GEI-212	10/4/2017	12:30 PM
1710012-02D	1700396-GEI-212	10/4/2017	12:30 PM
1710012-02E	1700396-GEI-212	10/4/2017	12:30 PM
1710012-02F	1700396-GEI-212	10/4/2017	12:30 PM
1710012-02G	1700396-GEI-212	10/4/2017	12:30 PM
1710012-02H	1700396-GEI-212	10/4/2017	12:30 PM
1710012-02I	1700396-GEI-212	10/4/2017	12:30 PM
1710012-03A	1700396-GEI-302(MW)	10/4/2017	2:30 PM
1710012-03B	1700396-GEI-302(MW)	10/4/2017	2:30 PM
1710012-03C	1700396-GEI-302(MW)	10/4/2017	2:30 PM
1710012-03D	1700396-GEI-302(MW)	10/4/2017	2:30 PM
1710012-03E	1700396-GEI-302(MW)	10/4/2017	2:30 PM
1710012-03F	1700396-GEI-302(MW)	10/4/2017	2:30 PM
1710012-03G	1700396-GEI-302(MW)	10/4/2017	2:30 PM
1710012-03H	1700396-GEI-302(MW)	10/4/2017	2:30 PM
1710012-03I	1700396-GEI-302(MW)	10/4/2017	2:30 PM

AMRO Environmental Laboratories Corp.

02-Nov-17

Lab Order: 1710012

Client: GEI Consultants, Inc.

Project: 1700396 MPA Berth 10 Final Desi

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Analytical Test Name Preparatory Test Name	Prep Date	Batch ID	Analysis Date TCLP Date
1710012-01A	1700396-WE-10	10/4/2017 11:30:00 AM	Groundwater	EPA 8260C VOLATILES by GC/MS EPA 5030B	10/4/2017	R60041	10/9/2017
1710012-01B				EPA 8082A PCBs IN WATER EPA 3510 AQPREP SEP FUNNEL: PCB	10/10/2017	27528	10/20/2017
				EPA 8270D SEMIVOLATILE ORGANICS, Aqueous EPA 3510 AQPREP SEP FUNNEL: BNA	10/9/2017	27516	10/10/2017
				PAH BY EPA 8270D SIM	10/9/2017	27516	10/9/2017
1710012-01C Or 80				TPH, EPA 1664A	10/24/2017	R60113	10/24/2017
1710012-01D				SM 4500G Chlorine, Total Residual (modified)	10/5/2017	R60122	10/5/2017
				Standard Methods - Total Suspended Solids	10/10/2017	R60034	10/10/2017
1710012-01E				EPA 7196 HEXAVALENT CHROMIUM	10/5/2017	R60120	10/5/2017
1710012-01F				EPA 7196 HEXAVALENT CHROMIUM	10/5/2017	R60120	10/5/2017
1710012-01G				Standard Methods - Cyanide, Total	10/18/2017	R60123	10/18/2017
1710012-01H				EPA 200.7 ICP METALS, TOTAL 200 Series Prep: ICP/GFAA	10/16/2017	27525	10/18/2017
				EPA 200.7 ICP METALS, TOTAL	10/16/2017	27525	10/16/2017

AMRO Environmental Laboratories Corp.

02-Nov-17

DATES REPORT

Lab Order: 1710012

Client: GEI Consultants, Inc.

Project: 1700396 MPA Berth 10 Final Desi

Sample ID	Client Sample ID	Collection Date	Matrix	Analytical Test Name	Prep Date	Batch ID	TCLP Date
1710012-01H	1700396-WE-10	10/4/2017 11:30:00 AM	Groundwater	EPA 200.9 ARSENIC, Total	10/16/2017	27525	10/20/2017
				200 Series Prep: ICP/GFAA			
				EPA 200.9 LEAD, Total	10/16/2017	27525	10/19/2017
				EPA 200.9 LEAD, Total	10/16/2017	27525	10/17/2017
				EPA 200.9 SELENIUM, Total	10/16/2017	27525	10/19/2017
				EPA 200.9 ANTIMONY, Total	10/16/2017	27525	10/18/2017
				EPA 245.1 MERCURY, Total	10/6/2017	27512	10/6/2017
				MERCURY PREP: EPA 245.1/7040	10/6/2017	27512	10/6/2017
1710012-01I				Standard Methods - Ammonia as Nitrogen	10/25/2017	R60102	10/25/2017
1710012-02A	1700396-GEI-212	10/4/2017 12:30:00 PM		EPA 8260C VOLATILES by GC/MS	10/9/2017	10/9/2017	10/9/2017
				EPA 5030B	10/4/2017	R60041	10/4/2017
1710012-02B				EPA 8082A PCBs IN WATER	10/24/2017	27528	10/24/2017
				EPA 3510 AQPREP SEP FUNNEL: PCB	10/10/2017	27516	10/10/2017
				EPA 8270D SEMIVOLATILE ORGANICS, Aqueous	10/9/2017	27516	10/9/2017
				EPA 3510 AQPREP SEP FUNNEL: BNA	10/9/2017	27516	10/9/2017
				PAH BY EPA 8270D SIM	10/9/2017	27516	10/9/2017
1710012-02C				TPH, EPA 1664A	10/24/2017	R60113	10/24/2017

AMRO Environmental Laboratories Corp.

02-Nov-17

Lab Order: 1710012
 Client: GEI Consultants, Inc.
 Project: 1700396 MPA Berth 10 Final Desi

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Analytical Test Name	Preparatory Test Name	Prep Date	Batch ID	Analysis Date	TCLP Date
1710012-02D	1700396-GEI-212	10/4/2017 12:30:00 PM	Groundwater	SM 4500G Chlorine, Total Residual (modified)		10/5/2017	R60122		
Standard Methods - Total Suspended Solids									
1710012-02E				EPA 7196 HEXAVALENT CHROMIUM		10/5/2017	R60120		
EPA 7196 HEXAVALENT CHROMIUM									
1710012-02F				EPA 7196 HEXAVALENT CHROMIUM		10/5/2017	R60120		
Standard Methods - Cyanide, Total									
1710012-02G				EPA 200.7 ICP METALS, TOTAL		10/18/2017	R60123		
200 Series Prep: ICP/GFAA									
1710012-02H				EPA 200.7 ICP METALS, TOTAL		10/16/2017	27525		
EPA 200.9 ARSENIC, Total									
				EPA 200.9 LEAD, Total		10/16/2017	27525		
EPA 200.9 SELENIUM, Total									
				EPA 200.9 ANTIMONY, Total		10/16/2017	27525		

AMRO Environmental Laboratories Corp.

02-Nov-17

Lab Order: 1710012
 Client: GEI Consultants, Inc.
 Project: 1700396 MPA Berth 10 Final Desi

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Analytical Test Name	Prep Date	Batch ID	TCLP Date
1710012-02H	1700396-GEI-212	10/4/2017 12:30:00 PM	Groundwater	EPA 245.1 MERCURY, Total MERCURY PREP: EPA 245.1/7040	10/6/2017	10/6/2017 27512	
1710012-02I				Standard Methods - Ammonia as Nitrogen		10/25/2017 R60102	
1710012-03A	1700396-GEI-302(MW)	10/4/2017 2:30:00 PM		EPA 8260C VOLATILES by GC/MS EPA 5030B	10/4/2017	10/9/2017 R60041	
1710012-03B				EPA 8082A PCBs IN WATER EPA 3510 AQPREP SEP FUNNEL: PCB	10/10/2017	10/24/2017 27528	
6 Of 80				EPA 8270D SEMIVOLATILE ORGANICS, Aqueous EPA 3510 AQPREP SEP FUNNEL: BNA PAH BY EPA 8270D SIM	10/9/2017	10/10/2017 27516	
1710012-03C				TPH, EPA 1664A	10/9/2017	10/9/2017 27516	
1710012-03D				SM 4500G Chlorine, Total Residual (modified)		10/24/2017 R60113	
				Standard Methods - Total Suspended Solids		10/5/2017 R60122	
1710012-03E				EPA 7196 HEXA VALENT CHROMIUM		10/10/2017 R60034	
1710012-03F				EPA 7196 HEXA VALENT CHROMIUM		10/5/2017 R60120	
1710012-03G				Standard Methods - Cyanide, Total		10/5/2017 R60120	
						10/18/2017 R60123	

AMRO Environmental Laboratories Corp.

02-Nov-17

Lab Order: 1710012
 Client: GEI Consultants, Inc.
 Project: 1700396 MPA Berth 10 Final Desi

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Analytical Test Name	Prep Date	Batch ID	TCLP Date
1710012-03H	1700396-GEI-302(MW)	10/4/2017 2:30:00 PM	Groundwater	EPA 200.7 ICP METALS, TOTAL	10/16/2017	10/18/2017	
				200 Series Prep: ICP/GFAA	10/16/2017	27525	
				EPA 200.9 ARSENIC, Total	10/16/2017	10/20/2017	
					10/16/2017	27525	
				EPA 200.9 LEAD, Total	10/16/2017	10/17/2017	
					10/16/2017	27525	
				EPA 200.9 SELENIUM, Total	10/16/2017	10/19/2017	
					10/16/2017	27525	
				EPA 200.9 ANTIMONY, Total	10/16/2017	10/18/2017	
					10/16/2017	27525	
				EPA 245.1 MERCURY, Total	10/6/2017	10/6/2017	
				MERCURY PREP: EPA 245.1/7040	10/6/2017	27512	
				Standard Methods - Ammonia as Nitrogen	10/25/2017	10/25/2017	
						R60102	

11

**400 Unicorn Park Drive
Woburn, MA 01801
PH: 781.721.4000
FX: 781.721.4073**

Project Location: Boston, MA
Project Manager: Mike Sabulis

Preservative						
HCl	None	None	H ₂ SO ₄	None	NaOH	HNO ₃

[illegible][illegible][illegible]

Retrieved by sampler: (signature) <i>Ms. M. 1</i>	Date: _____	Time: _____	Received by: (signature)
--	-------------	-------------	--------------------------

<p>the TAT can be achieved</p>	<p>Normal <input type="checkbox"/> Other <input type="checkbox"/></p> <p>10-Day <input type="checkbox"/> 7-Day <input type="checkbox"/></p> <p>5-Day <input checked="" type="checkbox"/> X <input type="checkbox"/> 3-Day <input type="checkbox"/></p>
<p>Additional Requirements/Comments/Remarks:</p>	
<p>(1) Metals: Antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, z. z. z.</p>	
<p>(2) Dissolved Hex chrome field filtered</p>	
<p>(3) Please use EPA Remediation General Permit (RGP) methods and detection limits specified in a permit.</p>	

(3) Please use EPA Remediation General Permit (RGP) methods and detection limits specified in attached Appendix VII of RGP Permit.

ac/acememos/forms/DA Formos/acememos Doc. 04 0414 414 4

111 Herrick Street
Merrimack, NH 03054
(603) 424-2022

AMRO ID: 1770012

* = If the laboratory preserves the drinking water sample (s) for EPA Method 200 series, sample (s) should be held at least 16 hours prior to analysis or 24 hours for water sample (s).

10 of 80

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design
Lab Order: 1710012

CASE NARRATIVE**GC/MS VOLATILES- 8260C:**

1. A Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) were performed on 10/09/17 on V-3 (Batch ID: R60041). All %Rs and RPDs were within the laboratory control limits with the following exception(s):

1.1 The RPD for 2 analytes out of 67 analytes were outside the control limits.

2. No analytical or quality issues were noted, other than those described above or in the Data Comment page.

GC/MS SEMIVOLATILES- 8270D:

1. A Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) were performed on 10/10/17 on SV-4 (Batch ID: 27516). All %Rs and RPDs were within the laboratory control limits with the following exception(s):

1.1 The %R for 1 analyte out of 67 analytes in the LCS were outside the control limits.

1.2 The %R for 1 analyte and 1 surrogate out of 67 analytes in the LCSD were outside the control limits.

2. No analytical or quality issues were noted, other than those described above or in the Data Comment page.

GC/MS SEMIVOLATILES- 8270D-PAHSIM:

1. No analytical or quality issues were noted, other than those described in the Data Comment page.

GC/ECD-PCBs-8082A:

1. No analytical or quality issues were noted, other than those described in the Data Comment page.

METALS:

1. The Matrix Spike recovery for Iron was slightly low but the Matrix Spike Duplicate was within laboratory limits.

2. No other QC deviations were noted.

WET CHEMISTRY:

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design
Lab Order: 1710012

CASE NARRATIVE

1. The Matrix Spike recovery for Hexavalent Chromium was low. It was recolored and reanalyzed with the same result.
2. The Matrix Spike recovery for Total Residual Chlorine was slightly low. Also the samples for this test were received past the 15-minute holding time.
3. No other QC deviations were noted.

DATA COMMENT PAGE

Organic Data Qualifiers

ND	Indicates compound was analyzed for, but not detected at or above the reporting limit.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the data indicates the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than the method detection limit.
H	Method prescribed holding time exceeded.
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
B	This flag is used when the analyte is found in the associated blank as well as in the sample.
R	RPD outside accepted recovery limits
RL	Reporting limit; defined as the lowest concentration the laboratory can accurately quantitate.
S	Spike Recovery outside accepted recovery limits.
#	See Case Narrative
Q	RPD between signal 1 and signal 2 >40%.

Micro Data Qualifiers

TNTC	Too numerous to count
------	-----------------------

Inorganic Data Qualifiers

ND or U	Indicates element was analyzed for, but not detected at or above the reporting limit.
J	Indicates a value greater than or equal to the method detection limit, but less than the quantitation limit.
H	Indicates analytical holding time exceedance.
B	Indicates that the analyte is found in the associated blank, as well as in the sample.
MSA	Indicates value determined by the Method of Standard Addition
+	Indicates the correlation coefficient for the Method of Standard Addition is less than 0.995
E	This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
R	RPD outside accepted recovery limits
RL	Reporting limit; defined as the lowest concentration the laboratory can accurately quantitate.
S	Spike Recovery outside accepted recovery limits.
PS	The analyte was below the Reporting Limit but has significant matrix interference as noted by the poor recovery of the Post Digestion Spike.
#	See Case Narrative
*	MCL Exceeded

Report Comments:

1. Soil, sediment and sludge sample results are reported on a "dry weight" basis.
2. Reporting limits are adjusted for sample size used, dilutions and moisture content, if applicable.

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-WE-10**Lab Order:** 1710012**Collection Date:** 10/4/2017 11:30:00 AM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-01A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8260C VOLATILES BY GC/MS		SW8260C				Analyst: JK
1,4-Dioxane	ND	50		µg/L	1	10/9/2017 5:49:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	1	10/9/2017 5:49:00 PM
Chloromethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Vinyl chloride	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Chloroethane	ND	5.0		µg/L	1	10/9/2017 5:49:00 PM
Bromomethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Trichlorofluoromethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Diethyl ether	ND	5.0		µg/L	1	10/9/2017 5:49:00 PM
Acetone	ND	10		µg/L	1	10/9/2017 5:49:00 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	10/9/2017 5:49:00 PM
Carbon disulfide	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Methylene chloride	ND	5.0		µg/L	1	10/9/2017 5:49:00 PM
Methyl tert-butyl ether	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
trans-1,2-Dichloroethene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,1-Dichloroethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Tertiary Butanol	ND	20		µg/L	1	10/9/2017 5:49:00 PM
2-Butanone	ND	10		µg/L	1	10/9/2017 5:49:00 PM
Diisopropyl ether	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
cis-1,2-Dichloroethene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Ethyl Tertiary Butyl Ether	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Chloroform	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Tetrahydrofuran	ND	10		µg/L	1	10/9/2017 5:49:00 PM
Bromochloromethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,1,1-Trichloroethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,1-Dichloropropene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Carbon tetrachloride	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,2-Dichloroethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Benzene	ND	1.0		µg/L	1	10/9/2017 5:49:00 PM
Trichloroethene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,2-Dichloropropane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Bromodichloromethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Dibromomethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Tertiary Amyl Methyl Ether	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	10/9/2017 5:49:00 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/9/2017 5:49:00 PM
Toluene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/9/2017 5:49:00 PM
1,1,2-Trichloroethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-WE-10**Lab Order:** 1710012**Collection Date:** 10/4/2017 11:30:00 AM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-01A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
2-Hexanone	ND	10		µg/L	1	10/9/2017 5:49:00 PM
1,3-Dichloropropane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Tetrachloroethene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Dibromochloromethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Chlorobenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Ethylbenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
m,p-Xylene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
o-Xylene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Styrene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Bromoform	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Isopropylbenzene	4.0	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Bromobenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
n-Propylbenzene	5.8	2.0		µg/L	1	10/9/2017 5:49:00 PM
2-Chlorotoluene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
4-Chlorotoluene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
tert-Butylbenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,2,4-Trimethylbenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
sec-Butylbenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
4-Isopropyltoluene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,3-Dichlorobenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,4-Dichlorobenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
n-Butylbenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,2-Dichlorobenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	10/9/2017 5:49:00 PM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Hexachlorobutadiene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Naphthalene	ND	5.0		µg/L	1	10/9/2017 5:49:00 PM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
1,3,5-Trichlorobenzene	ND	2.0		µg/L	1	10/9/2017 5:49:00 PM
Surr: Dibromofluoromethane	92.4	74-138		%REC	1	10/9/2017 5:49:00 PM
Surr: 1,2-Dichloroethane-d4	103	64-138		%REC	1	10/9/2017 5:49:00 PM
Surr: Toluene-d8	99.6	77-128		%REC	1	10/9/2017 5:49:00 PM
Surr: 4-Bromofluorobenzene	92.6	81-113		%REC	1	10/9/2017 5:49:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-GEI-212**Lab Order:** 1710012**Collection Date:** 10/4/2017 12:30:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-02A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8260C VOLATILES BY GC/MS		SW8260C				Analyst: JK
1,4-Dioxane	ND	50		µg/L	1	10/9/2017 6:27:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	1	10/9/2017 6:27:00 PM
Chloromethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Vinyl chloride	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Chloroethane	ND	5.0		µg/L	1	10/9/2017 6:27:00 PM
Bromomethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Trichlorofluoromethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Diethyl ether	ND	5.0		µg/L	1	10/9/2017 6:27:00 PM
Acetone	ND	10		µg/L	1	10/9/2017 6:27:00 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	10/9/2017 6:27:00 PM
Carbon disulfide	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Methylene chloride	ND	5.0		µg/L	1	10/9/2017 6:27:00 PM
Methyl tert-butyl ether	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
trans-1,2-Dichloroethene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,1-Dichloroethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Tertiary Butanol	ND	20		µg/L	1	10/9/2017 6:27:00 PM
2-Butanone	ND	10		µg/L	1	10/9/2017 6:27:00 PM
Diisopropyl ether	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
cis-1,2-Dichloroethene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Ethyl Tertiary Butyl Ether	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Chloroform	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Tetrahydrofuran	ND	10		µg/L	1	10/9/2017 6:27:00 PM
Bromochloromethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,1,1-Trichloroethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,1-Dichloropropene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Carbon tetrachloride	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,2-Dichloroethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Benzene	ND	1.0		µg/L	1	10/9/2017 6:27:00 PM
Trichloroethene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,2-Dichloropropane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Bromodichloromethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Dibromomethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Tertiary Amyl Methyl Ether	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	10/9/2017 6:27:00 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/9/2017 6:27:00 PM
Toluene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/9/2017 6:27:00 PM
1,1,2-Trichloroethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-GEI-212**Lab Order:** 1710012**Collection Date:** 10/4/2017 12:30:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-02A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
2-Hexanone	ND	10		µg/L	1	10/9/2017 6:27:00 PM
1,3-Dichloropropane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Tetrachloroethene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Dibromochloromethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Chlorobenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Ethylbenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
m,p-Xylene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
o-Xylene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Styrene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Bromoform	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Isopropylbenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Bromobenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
n-Propylbenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
2-Chlorotoluene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
4-Chlorotoluene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
tert-Butylbenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,2,4-Trimethylbenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
sec-Butylbenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
4-Isopropyltoluene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,3-Dichlorobenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,4-Dichlorobenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
n-Butylbenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,2-Dichlorobenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	10/9/2017 6:27:00 PM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Hexachlorobutadiene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Naphthalene	ND	5.0		µg/L	1	10/9/2017 6:27:00 PM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
1,3,5-Trichlorobenzene	ND	2.0		µg/L	1	10/9/2017 6:27:00 PM
Surr: Dibromofluoromethane	93.8	74-138		%REC	1	10/9/2017 6:27:00 PM
Surr: 1,2-Dichloroethane-d4	94.4	64-138		%REC	1	10/9/2017 6:27:00 PM
Surr: Toluene-d8	99.1	77-128		%REC	1	10/9/2017 6:27:00 PM
Surr: 4-Bromofluorobenzene	94.5	81-113		%REC	1	10/9/2017 6:27:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-GEI-302(MW)**Lab Order:** 1710012**Collection Date:** 10/4/2017 2:30:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-03A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8260C VOLATILES BY GC/MS		SW8260C		Analyst: JK		
1,4-Dioxane	ND	50		µg/L	1	10/9/2017 7:04:00 PM
Dichlorodifluoromethane	ND	5.0		µg/L	1	10/9/2017 7:04:00 PM
Chloromethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Vinyl chloride	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Chloroethane	ND	5.0		µg/L	1	10/9/2017 7:04:00 PM
Bromomethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Trichlorofluoromethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Diethyl ether	ND	5.0		µg/L	1	10/9/2017 7:04:00 PM
Acetone	ND	10		µg/L	1	10/9/2017 7:04:00 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	10/9/2017 7:04:00 PM
Carbon disulfide	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Methylene chloride	ND	5.0		µg/L	1	10/9/2017 7:04:00 PM
Methyl tert-butyl ether	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
trans-1,2-Dichloroethene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,1-Dichloroethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Tertiary Butanol	ND	20		µg/L	1	10/9/2017 7:04:00 PM
2-Butanone	ND	10		µg/L	1	10/9/2017 7:04:00 PM
Diisopropyl ether	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
cis-1,2-Dichloroethene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Ethyl Tertiary Butyl Ether	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Chloroform	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Tetrahydrofuran	ND	10		µg/L	1	10/9/2017 7:04:00 PM
Bromochloromethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,1,1-Trichloroethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,1-Dichloropropene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Carbon tetrachloride	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,2-Dichloroethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Benzene	ND	1.0		µg/L	1	10/9/2017 7:04:00 PM
Trichloroethene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,2-Dichloropropane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Bromodichloromethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Dibromomethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Tertiary Amyl Methyl Ether	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	10/9/2017 7:04:00 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/9/2017 7:04:00 PM
Toluene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/9/2017 7:04:00 PM
1,1,2-Trichloroethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-GEI-302(MW)**Lab Order:** 1710012**Collection Date:** 10/4/2017 2:30:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-03A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
2-Hexanone	ND	10		µg/L	1	10/9/2017 7:04:00 PM
1,3-Dichloropropane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Tetrachloroethene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Dibromochloromethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Chlorobenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Ethylbenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
m,p-Xylene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
o-Xylene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Styrene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Bromoform	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Isopropylbenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Bromobenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
n-Propylbenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
2-Chlorotoluene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
4-Chlorotoluene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
tert-Butylbenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,2,4-Trimethylbenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
sec-Butylbenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
4-Isopropyltoluene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,3-Dichlorobenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,4-Dichlorobenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
n-Butylbenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,2-Dichlorobenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	10/9/2017 7:04:00 PM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Hexachlorobutadiene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Naphthalene	ND	5.0		µg/L	1	10/9/2017 7:04:00 PM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
1,3,5-Trichlorobenzene	ND	2.0		µg/L	1	10/9/2017 7:04:00 PM
Surr: Dibromofluoromethane	93.2	74-138		%REC	1	10/9/2017 7:04:00 PM
Surr: 1,2-Dichloroethane-d4	99.3	64-138		%REC	1	10/9/2017 7:04:00 PM
Surr: Toluene-d8	100	77-128		%REC	1	10/9/2017 7:04:00 PM
Surr: 4-Bromofluorobenzene	93.5	81-113		%REC	1	10/9/2017 7:04:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: mb-10/09/17	Batch ID: R60041	Test Code: SW8260C	Units: µg/L	Analysis Date: 10/9/2017 12:32:00 PM	Prep Date: 10/9/2017						
Client ID:	Run ID: V-3_171009A	SeqNo: 1007149									
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	%REC	%RPD	RPDLimit	Que
1,4-Dioxane	ND	50	µg/L								
Dichlorodifluoromethane	ND	5.0	µg/L								
Chloromethane	ND	2.0	µg/L								
Vinyl chloride	ND	2.0	µg/L								
Chloroethane	ND	5.0	µg/L								
Bromomethane	ND	2.0	µg/L								
Trichlorofluoromethane	ND	2.0	µg/L								
Diethyl ether	ND	5.0	µg/L								
Acetone	ND	10	µg/L								
1,1-Dichloroethene	ND	1.0	µg/L								
Carbon disulfide	ND	2.0	µg/L								
Methylene chloride	ND	5.0	µg/L								
Methyl tert-butyl ether	ND	2.0	µg/L								
trans-1,2-Dichloroethene	ND	2.0	µg/L								
1,1-Dichloroethane	ND	2.0	µg/L								
Tertiary Butanol	ND	20	µg/L								
2-Butanone	ND	10	µg/L								
Diisopropyl ether	ND	2.0	µg/L								
2,2-Dichloropropane	ND	2.0	µg/L								
cis-1,2-Dichloroethene	ND	2.0	µg/L								
Ethyl Tertiary Butyl Ether	ND	2.0	µg/L								
Chloroform	ND	2.0	µg/L								
Tetrahydrofuran	ND	10	µg/L								
Bromochloromethane	ND	2.0	µg/L								
1,1,1-Trichloroethane	ND	2.0	µg/L								

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

1,1-Dichloropropene	ND	2.0	µg/L
Carbon tetrachloride	ND	2.0	µg/L
1,2-Dichloroethane	ND	2.0	µg/L
Benzene	ND	1.0	µg/L
Trichloroethene	ND	2.0	µg/L
1,2-Dichloropropane	ND	2.0	µg/L
Bromodichloromethane	ND	2.0	µg/L
Dibromomethane	ND	2.0	µg/L
Tertiary Amyl Methyl Ether	ND	2.0	µg/L
4-Methyl-2-pentanone	ND	10	µg/L
cis-1,3-Dichloropropene	ND	1.0	µg/L
Toluene	ND	2.0	µg/L
trans-1,3-Dichloropropene	ND	1.0	µg/L
1,1,2-Trichloroethane	ND	2.0	µg/L
1,2-Dibromoethane	ND	2.0	µg/L
2-Hexanone	ND	10	µg/L
1,3-Dichloropropane	ND	2.0	µg/L
Tetrachloroethene	ND	2.0	µg/L
Dibromochloromethane	ND	2.0	µg/L
Chlorobenzene	ND	2.0	µg/L
1,1,1,2-Tetrachloroethane	ND	2.0	µg/L
Ethylbenzene	ND	2.0	µg/L
m,p-Xylene	ND	2.0	µg/L
o-Xylene	ND	2.0	µg/L
Styrene	ND	2.0	µg/L
Bromoform	ND	2.0	µg/L
Isopropylbenzene	ND	2.0	µg/L
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L
1,2,3-Trichloropropane	ND	2.0	µg/L
Bromobenzene	ND	2.0	µg/L
n-Propylbenzene	ND	2.0	µg/L

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

Date: 02-Nov-17

QC SUMMARY REPORT

QC SUMMARY REPORT

Work Order: 1710012

Project: 1700396 MPA Berth 10 Final Design

Method Blank

Method Blank

[illegible]

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	NA - Not applicable where J values or ND results occur
	RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.		

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: Ics-10/09/17	Batch ID: R60041	Test Code: SW8260C	Units: µg/L	Analysis Date: 10/9/2017 10:46:00 AM	Prep Date: 10/9/2017							
Client ID:	Run ID: V-3_171009A	SeqNo: 1007147										
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
1,4-Dioxane	90.76	50	µg/L	100	0	90.8	30	172	0			
Dichlorodifluoromethane	21.59	5.0	µg/L	20	0	108	10	158	0			
Chloromethane	14.86	2.0	µg/L	20	0	74.3	45	144	0			
Vinyl chloride	21.41	2.0	µg/L	20	0	107	45	140	0			
Chloroethane	20.28	5.0	µg/L	20	0	101	49	140	0			
Bromomethane	24.08	2.0	µg/L	20	0	120	54	149	0			
Trichlorofluoromethane	23.53	2.0	µg/L	20	0	118	71	154	0			
Diethyl ether	22.38	5.0	µg/L	20	0	112	65	142	0			
Acetone	34.47	10	µg/L	40	0	86.2	10	179	0			
1,1,1-Dichloroethene	18.97	1.0	µg/L	20	0	94.8	69	152	0			
Carbon disulfide	14.04	2.0	µg/L	20	0	70.2	42	149	0			
Methylene chloride	15.89	5.0	µg/L	20	0	79.4	69	159	0			
Methyl tert-butyl ether	20.74	2.0	µg/L	20	0	104	67	144	0			
trans-1,2-Dichloroethene	19.57	2.0	µg/L	20	0	97.8	73	149	0			
1,1-Dichloroethane	17.76	2.0	µg/L	20	0	88.8	74	147	0			
Tertiary Butanol	229.5	20	µg/L	200	0	115	43	162	0			
2-Butanone	38.57	10	µg/L	40	0	96.4	16	164	0			
Diisopropyl ether	18.31	2.0	µg/L	20	0	91.6	63	149	0			
2,2-Dichloropropane	22.88	2.0	µg/L	20	0	114	68	166	0			
cis-1,2-Dichloroethene	20.87	2.0	µg/L	20	0	104	74	141	0			
Ethyl Tertiary Butyl Ether	19	2.0	µg/L	20	0	95	70	148	0			
Chloroform	21.79	2.0	µg/L	20	0	109	72	137	0			
Tetrahydrofuran	18.98	10	µg/L	20	0	94.9	53	149	0			
Bromochloromethane	22.59	2.0	µg/L	20	0	113	76	145	0			
1,1,1-Trichloroethane	20.82	2.0	µg/L	20	0	104	76	138	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

1,1-Dichloropropene	21.79	2.0	µg/L	20	0	109	74	138	0
Carbon tetrachloride	20.69	2.0	µg/L	20	0	103	70	138	0
1,2-Dichloroethane	19.5	2.0	µg/L	20	0	97.5	74	134	0
Benzene	20.96	1.0	µg/L	20	0	105	69	148	0
Trichloroethene	20.18	2.0	µg/L	20	0	101	74	136	0
1,2-Dichloropropane	20.95	2.0	µg/L	20	0	105	72	137	0
Bromodichloromethane	23.62	2.0	µg/L	20	0	118	74	137	0
Dibromomethane	20.88	2.0	µg/L	20	0	104	75	129	0
Tertiary Amyl Methyl Ether	19.72	2.0	µg/L	20	0	98.6	72	146	0
4-Methyl-2-pentanone	40.72	10	µg/L	40	0	102	49	138	0
cis-1,3-Dichloropropene	21.66	1.0	µg/L	20	0	108	72	134	0
Toluene	21.05	2.0	µg/L	20	0	105	75	139	0
trans-1,3-Dichloropropene	20.8	1.0	µg/L	20	0	104	64	132	0
1,1,2-Trichloroethane	21.31	2.0	µg/L	20	0	107	73	138	0
1,2-Dibromoethane	21.34	2.0	µg/L	20	0	107	72	136	0
2-Hexanone	35.14	10	µg/L	40	0	87.8	35	138	0
1,3-Dichloropropane	18.76	2.0	µg/L	20	0	93.8	75	120	0
Tetrachloroethene	21.42	2.0	µg/L	20	0	107	77	125	0
Dibromochloromethane	20.77	2.0	µg/L	20	0	104	68	113	0
Chlorobenzene	20.23	2.0	µg/L	20	0	101	79	120	0
1,1,1,2-Tetrachloroethane	19.99	2.0	µg/L	20	0	100	73	118	0
Ethylbenzene	20.31	2.0	µg/L	20	0	102	75	127	0
m,p-Xylene	40.32	2.0	µg/L	40	0	101	73	131	0
o-Xylene	20.21	2.0	µg/L	20	0	101	73	133	0
Styrene	20.59	2.0	µg/L	20	0	103	69	134	0
Bromoform	15.99	2.0	µg/L	20	0	80	51	112	0
Isopropylbenzene	19.21	2.0	µg/L	20	0	96	68	128	0
1,1,2,2-Tetrachloroethane	17.12	2.0	µg/L	20	0	85.6	65	121	0
1,2,3-Trichloropropane	15.31	2.0	µg/L	20	0	76.6	59	125	0
Bromobenzene	20.02	2.0	µg/L	20	0	100	75	120	0
n-Propylbenzene	19.72	2.0	µg/L	20	0	98.6	66	131	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 NA - Not applicable where J values or ND results occur

B - Analyte detected in the associated Method Blank

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

2-Chlorotoluene	19.49	2.0	µg/L	20	0	97.5	68	123	0
4-Chlorotoluene	19.44	2.0	µg/L	20	0	97.2	69	124	0
1,3,5-Trimethylbenzene	20.12	2.0	µg/L	20	0	101	68	130	0
tert-Butylbenzene	19.29	2.0	µg/L	20	0	96.5	67	129	0
1,2,4-Trimethylbenzene	20.43	2.0	µg/L	20	0	102	69	132	0
sec-Butylbenzene	19.55	2.0	µg/L	20	0	97.8	62	136	0
4-Isopropyltoluene	21.58	2.0	µg/L	20	0	108	65	137	0
1,3-Dichlorobenzene	19.57	2.0	µg/L	20	0	97.8	71	126	0
1,4-Dichlorobenzene	19.23	2.0	µg/L	20	0	96.2	72	123	0
n-Butylbenzene	21.23	2.0	µg/L	20	0	106	64	138	0
1,2-Dichlorobenzene	19.72	2.0	µg/L	20	0	98.6	75	124	0
1,2-Dibromo-3-chloropropane	18.62	5.0	µg/L	20	0	93.1	48	130	0
1,2,4-Trichlorobenzene	18.08	2.0	µg/L	20	0	90.4	61	141	0
Hexachlorobutadiene	16.96	2.0	µg/L	20	0	84.8	45	154	0
Naphthalene	18.31	5.0	µg/L	20	0	91.6	41	143	0
1,2,3-Trichlorobenzene	16.88	2.0	µg/L	20	0	84.4	40	152	0
1,3,5-Trichlorobenzene	21.13	2.0	µg/L	20	0	106	47	155	0
Surr: Dibromofluoromethane	25.14	2.0	µg/L	25	0	101	74	138	0
Surr: 1,2-Dichloroethane-d4	23.86	2.0	µg/L	25	0	95.4	64	138	0
Surr: Toluene-d8	24.91	2.0	µg/L	25	0	99.6	77	128	0
Surr: 4-Bromofluorobenzene	24.44	2.0	µg/L	25	0	97.8	81	113	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 NA - Not applicable where J values or ND results occur

B - Analyte detected in the associated Method Blank

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: GEI Consultants, Inc.
Work Order: 1710012
Project: 1700396 MPA Berth 10 Final Design

Sample ID: lcsd-10/09/17 Batch ID: R60041 Test Code: SW8260C Units: µg/L Analysis Date: 10/9/2017 11:21:00 AM Prep Date: 10/9/2017
Client ID: Run ID: V-3_171009A SeqNo: 1007148

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,4-Dioxane	84.87	50	µg/L	100	0	84.9	30	172	90.76	6.71	20	
Dichlorodifluoromethane	19.23	5.0	µg/L	20	0	96.2	10	158	21.59	11.6	20	
Chloromethane	14.39	2.0	µg/L	20	0	72	45	144	14.86	3.21	20	
Vinyl chloride	20.71	2.0	µg/L	20	0	104	45	140	21.41	3.32	20	
Chloroethane	16	5.0	µg/L	20	0	80	49	140	20.28	23.6	20	R
Bromomethane	16.13	2.0	µg/L	20	0	80.6	54	149	24.08	39.5	20	R
Trichlorofluoromethane	22.66	2.0	µg/L	20	0	113	71	154	23.53	3.77	20	
Diethyl ether	20.76	5.0	µg/L	20	0	104	65	142	22.38	7.51	20	
Acetone	35.82	10	µg/L	40	0	89.6	10	179	34.47	3.84	20	
1,1-Dichloroethene	17.92	1.0	µg/L	20	0	89.6	69	152	18.97	5.69	20	
Carbon disulfide	12.49	2.0	µg/L	20	0	62.4	42	149	14.04	11.7	20	
Methylene chloride	15.57	5.0	µg/L	20	0	77.8	69	159	15.89	2.03	20	
Methyl tert-butyl ether	19.98	2.0	µg/L	20	0	99.9	67	144	20.74	3.73	20	
trans-1,2-Dichloroethene	18.97	2.0	µg/L	20	0	94.8	73	149	19.57	3.11	20	
1,1-Dichloroethane	16.73	2.0	µg/L	20	0	83.6	74	147	17.76	5.97	20	
Tertiary Butanol	226.6	20	µg/L	200	0	113	43	162	229.5	1.29	20	
2-Butanone	40.3	10	µg/L	40	0	101	16	164	38.57	4.39	20	
Diisopropyl ether	17.33	2.0	µg/L	20	0	86.7	63	149	18.31	5.5	20	
2,2-Dichloropropane	21.23	2.0	µg/L	20	0	106	68	166	22.88	7.48	20	
cis-1,2-Dichloroethene	19.53	2.0	µg/L	20	0	97.6	74	141	20.87	6.63	20	
Ethyl Tertiary Butyl Ether	18.21	2.0	µg/L	20	0	91	70	148	19	4.25	20	
Chloroform	20.55	2.0	µg/L	20	0	103	72	137	21.79	5.86	20	
Tetrahydrofuran	17.28	10	µg/L	20	0	86.4	53	149	18.98	9.38	20	
Bromochloromethane	22.33	2.0	µg/L	20	0	112	76	145	22.59	1.16	20	
1,1,1-Trichloroethane	19.65	2.0	µg/L	20	0	98.2	76	138	20.82	5.78	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

1,1-Dichloropropene	20.75	2.0	µg/L	20	0	104	74	138	21.79	4.89	20
Carbon tetrachloride	20.55	2.0	µg/L	20	0	103	70	138	20.69	0.679	20
1,2-Dichloroethane	18.86	2.0	µg/L	20	0	94.3	74	134	19.5	3.34	20
Benzene	19.66	1.0	µg/L	20	0	98.3	69	148	20.96	6.4	20
Trichloroethene	19.19	2.0	µg/L	20	0	96	74	136	20.18	5.03	20
1,2-Dichloropropane	19.08	2.0	µg/L	20	0	95.4	72	137	20.95	9.34	20
Bromodichloromethane	22.22	2.0	µg/L	20	0	111	74	137	23.62	6.11	20
Dibromomethane	20.38	2.0	µg/L	20	0	102	75	129	20.88	2.42	20
Teritary Amyl Methyl Ether	19.99	2.0	µg/L	20	0	100	72	146	19.72	1.36	20
4-Methyl-2-pentanone	39.91	10	µg/L	40	0	99.8	49	138	40.72	2.01	20
cis-1,3-Dichloropropene	21.05	1.0	µg/L	20	0	105	72	134	21.66	2.86	20
Toluene	20.04	2.0	µg/L	20	0	100	75	139	21.05	4.92	20
trans-1,3-Dichloropropene	20.28	1.0	µg/L	20	0	101	64	132	20.8	2.53	20
1,1,2-Trichloroethane	20.94	2.0	µg/L	20	0	105	73	138	21.31	1.75	20
1,2-Dibromoethane	20.87	2.0	µg/L	20	0	104	72	136	21.34	2.23	20
2-Hexanone	35.17	10	µg/L	40	0	87.9	35	138	35.14	0.0853	20
1,3-Dichloropropane	17.92	2.0	µg/L	20	0	89.6	75	120	18.76	4.58	20
Tetrachloroethene	19.41	2.0	µg/L	20	0	97	77	125	21.42	9.85	20
Dibromochloromethane	19.95	2.0	µg/L	20	0	99.8	68	113	20.77	4.03	20
Chlorobenzene	18.82	2.0	µg/L	20	0	94.1	79	120	20.23	7.22	20
1,1,1,2-Tetrachloroethane	18.51	2.0	µg/L	20	0	92.6	73	118	19.99	7.69	20
Ethylbenzene	19.03	2.0	µg/L	20	0	95.2	75	127	20.31	6.51	20
m,p-Xylene	37.77	2.0	µg/L	40	0	94.4	73	131	40.32	6.53	20
o-Xylene	18.42	2.0	µg/L	20	0	92.1	73	133	20.21	9.27	20
Styrene	19.58	2.0	µg/L	20	0	97.9	69	134	20.59	5.03	20
Bromoform	15.11	2.0	µg/L	20	0	75.6	51	112	15.99	5.66	20
Isopropylbenzene	18.06	2.0	µg/L	20	0	90.3	68	128	19.21	6.17	20
1,1,2,2-Tetrachloroethane	17.08	2.0	µg/L	20	0	85.4	65	121	17.12	0.234	20
1,2,3-Trichloropropane	15.33	2.0	µg/L	20	0	76.7	59	125	15.31	0.131	20
Bromobenzene	18.89	2.0	µg/L	20	0	94.4	75	120	20.02	5.81	20
n-Propylbenzene	18.38	2.0	µg/L	20	0	91.9	66	131	19.72	7.03	20

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

2-Chlorotoluene	18.38	2.0	µg/L	20	0	91.9	68	123	19.49	5.86	20
4-Chlorotoluene	18.19	2.0	µg/L	20	0	91	69	124	19.44	6.64	20
1,3,5-Trimethylbenzene	18.88	2.0	µg/L	20	0	94.4	68	130	20.12	6.36	20
tert-Butylbenzene	18.4	2.0	µg/L	20	0	92	67	129	19.29	4.72	20
1,2,4-Trimethylbenzene	19.02	2.0	µg/L	20	0	95.1	69	132	20.43	7.15	20
sec-Butylbenzene	18.29	2.0	µg/L	20	0	91.4	62	136	19.55	6.66	20
4-Isopropyltoluene	19.47	2.0	µg/L	20	0	97.4	65	137	21.58	10.3	20
1,3-Dichlorobenzene	18.36	2.0	µg/L	20	0	91.8	71	126	19.57	6.38	20
1,4-Dichlorobenzene	18.6	2.0	µg/L	20	0	93	72	123	19.23	3.33	20
n-Butylbenzene	19.74	2.0	µg/L	20	0	98.7	64	138	21.23	7.27	20
1,2-Dichlorobenzene	18.84	2.0	µg/L	20	0	94.2	75	124	19.72	4.56	20
1,2-Dibromo-3-chloropropane	18.36	5.0	µg/L	20	0	91.8	48	130	18.62	1.41	20
1,2,4-Trichlorobenzene	17.08	2.0	µg/L	20	0	85.4	61	141	18.08	5.69	20
Hexachlorobutadiene	13.97	2.0	µg/L	20	0	69.8	45	154	16.96	19.3	20
Naphthalene	16.8	5.0	µg/L	20	0	84	41	143	18.31	8.6	20
1,2,3-Trichlorobenzene	15.19	2.0	µg/L	20	0	76	40	152	16.88	10.5	20
1,3,5-Trichlorobenzene	19.9	2.0	µg/L	20	0	99.5	47	155	21.13	6	20
Surr: Dibromofluoromethane	25.27	2.0	µg/L	25	0	101	74	138	0	0	0
Surr: 1,2-Dichloroethane-d4	24.03	2.0	µg/L	25	0	96.1	64	138	0	0	0
Surr: Toluene-d8	25.29	2.0	µg/L	25	0	101	77	128	0	0	0
Surr: 4-Bromofluorobenzene	23.55	2.0	µg/L	25	0	94.2	81	113	0	0	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT:	GEI Consultants, Inc.	Client Sample ID:	1700396-WE-10
Lab Order:	1710012	Collection Date:	10/4/2017 11:30:00 AM
Project:	1700396 MPA Berth 10 Final Design	Matrix:	GROUNDWATER
Lab ID:	1710012-01B		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8270D SEMIVOLATILE ORGANICS		SW8270D		Analyst: NS		
Phenol	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/10/2017 4:17:00 PM
2-Chlorophenol	ND	10		µg/L	1	10/10/2017 4:17:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Benzyl alcohol	ND	21		µg/L	1	10/10/2017 4:17:00 PM
2-Methylphenol	ND	10		µg/L	1	10/10/2017 4:17:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	10/10/2017 4:17:00 PM
4-Methylphenol	ND	10		µg/L	1	10/10/2017 4:17:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Hexachloroethane	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Nitrobenzene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Isophorone	ND	10		µg/L	1	10/10/2017 4:17:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Benzoic acid	ND	21		µg/L	1	10/10/2017 4:17:00 PM
2-Nitrophenol	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/10/2017 4:17:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	10/10/2017 4:17:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Naphthalene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
4-Chloroaniline	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
4-Chloro-3-methylphenol	ND	21		µg/L	1	10/10/2017 4:17:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/10/2017 4:17:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/10/2017 4:17:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
2-Nitroaniline	ND	21		µg/L	1	10/10/2017 4:17:00 PM
Dimethyl phthalate	ND	10		µg/L	1	10/10/2017 4:17:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Acenaphthylene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
3-Nitroaniline	ND	21		µg/L	1	10/10/2017 4:17:00 PM
4-Nitrophenol	ND	21		µg/L	1	10/10/2017 4:17:00 PM
2,4-Dinitrophenol	ND	21		µg/L	1	10/10/2017 4:17:00 PM
Acenaphthene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Dibenzofuran	ND	10		µg/L	1	10/10/2017 4:17:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-WE-10**Lab Order:** 1710012**Collection Date:** 10/4/2017 11:30:00 AM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-01B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	10		µg/L	1	10/10/2017 4:17:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Fluorene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
4-Nitroaniline	ND	21		µg/L	1	10/10/2017 4:17:00 PM
4,6-Dinitro-2-methylphenol	ND	21		µg/L	1	10/10/2017 4:17:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/10/2017 4:17:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	10/10/2017 4:17:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Hexachlorobenzene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Pentachlorophenol	ND	21		µg/L	1	10/10/2017 4:17:00 PM
Phenanthrene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Anthracene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Carbazole	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Fluoranthene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Pyrene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/10/2017 4:17:00 PM
3,3'-Dichlorobenzidine	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Benz(a)anthracene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Chrysene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	10/10/2017 4:17:00 PM
Surr: 2-Fluorophenol	39.3	25-62		%REC	1	10/10/2017 4:17:00 PM
Surr: Phenol-d5	26.7	13-43		%REC	1	10/10/2017 4:17:00 PM
Surr: Nitrobenzene-d5	71.8	36-108		%REC	1	10/10/2017 4:17:00 PM
Surr: 2-Fluorobiphenyl	73.9	44-117		%REC	1	10/10/2017 4:17:00 PM
Surr: 2,4,6-Tribromophenol	91.2	39-131		%REC	1	10/10/2017 4:17:00 PM
Surr: 4-Terphenyl-d14	107	44-122		%REC	1	10/10/2017 4:17:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-GEI-212**Lab Order:** 1710012**Collection Date:** 10/4/2017 12:30:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-02B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8270D SEMIVOLATILE ORGANICS		SW8270D			Analyst: NS	
Phenol	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/10/2017 4:42:00 PM
2-Chlorophenol	ND	10		µg/L	1	10/10/2017 4:42:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Benzyl alcohol	ND	20		µg/L	1	10/10/2017 4:42:00 PM
2-Methylphenol	ND	10		µg/L	1	10/10/2017 4:42:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	10/10/2017 4:42:00 PM
4-Methylphenol	ND	10		µg/L	1	10/10/2017 4:42:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Hexachloroethane	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Nitrobenzene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Isophorone	ND	10		µg/L	1	10/10/2017 4:42:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Benzoic acid	ND	20		µg/L	1	10/10/2017 4:42:00 PM
2-Nitrophenol	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/10/2017 4:42:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	10/10/2017 4:42:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Naphthalene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
4-Chloroaniline	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
4-Chloro-3-methylphenol	ND	20		µg/L	1	10/10/2017 4:42:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/10/2017 4:42:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/10/2017 4:42:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
2-Nitroaniline	ND	20		µg/L	1	10/10/2017 4:42:00 PM
Dimethyl phthalate	ND	10		µg/L	1	10/10/2017 4:42:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Acenaphthylene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
3-Nitroaniline	ND	20		µg/L	1	10/10/2017 4:42:00 PM
4-Nitrophenol	ND	20		µg/L	1	10/10/2017 4:42:00 PM
2,4-Dinitrophenol	ND	20		µg/L	1	10/10/2017 4:42:00 PM
Acenaphthene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Dibenzofuran	ND	10		µg/L	1	10/10/2017 4:42:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-GEI-212**Lab Order:** 1710012**Collection Date:** 10/4/2017 12:30:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-02B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	10		µg/L	1	10/10/2017 4:42:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Fluorene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
4-Nitroaniline	ND	20		µg/L	1	10/10/2017 4:42:00 PM
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	10/10/2017 4:42:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/10/2017 4:42:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	10/10/2017 4:42:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Hexachlorobenzene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Pentachlorophenol	ND	20		µg/L	1	10/10/2017 4:42:00 PM
Phenanthrene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Anthracene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Carbazole	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Fluoranthene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Pyrene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/10/2017 4:42:00 PM
3,3'-Dichlorobenzidine	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Benz(a)anthracene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Chrysene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	10/10/2017 4:42:00 PM
Surr: 2-Fluorophenol	33.5	25-62		%REC	1	10/10/2017 4:42:00 PM
Surr: Phenol-d5	25.9	13-43		%REC	1	10/10/2017 4:42:00 PM
Surr: Nitrobenzene-d5	54.8	36-108		%REC	1	10/10/2017 4:42:00 PM
Surr: 2-Fluorobiphenyl	64.2	44-117		%REC	1	10/10/2017 4:42:00 PM
Surr: 2,4,6-Tribromophenol	88.2	39-131		%REC	1	10/10/2017 4:42:00 PM
Surr: 4-Terphenyl-d14	101	44-122		%REC	1	10/10/2017 4:42:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-GEI-302(MW)**Lab Order:** 1710012**Collection Date:** 10/4/2017 2:30:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-03B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA 8270D SEMIVOLATILE ORGANICS		SW8270D		Analyst: NS		
Phenol	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Bis(2-chloroethyl)ether	ND	11		µg/L	1	10/10/2017 5:06:00 PM
2-Chlorophenol	ND	11		µg/L	1	10/10/2017 5:06:00 PM
1,3-Dichlorobenzene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
1,4-Dichlorobenzene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Benzyl alcohol	ND	21		µg/L	1	10/10/2017 5:06:00 PM
2-Methylphenol	ND	11		µg/L	1	10/10/2017 5:06:00 PM
1,2-Dichlorobenzene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Bis(2-chloroisopropyl)ether	ND	11		µg/L	1	10/10/2017 5:06:00 PM
4-Methylphenol	ND	11		µg/L	1	10/10/2017 5:06:00 PM
N-Nitrosodi-n-propylamine	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Hexachloroethane	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Nitrobenzene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Isophorone	ND	11		µg/L	1	10/10/2017 5:06:00 PM
2,4-Dimethylphenol	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Benzoic acid	ND	21		µg/L	1	10/10/2017 5:06:00 PM
2-Nitrophenol	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Bis(2-chloroethoxy)methane	ND	11		µg/L	1	10/10/2017 5:06:00 PM
2,4-Dichlorophenol	ND	11		µg/L	1	10/10/2017 5:06:00 PM
1,2,4-Trichlorobenzene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Naphthalene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
4-Chloroaniline	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Hexachlorobutadiene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
4-Chloro-3-methylphenol	ND	21		µg/L	1	10/10/2017 5:06:00 PM
2-Methylnaphthalene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Hexachlorocyclopentadiene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
2,4,6-Trichlorophenol	ND	11		µg/L	1	10/10/2017 5:06:00 PM
2,4,5-Trichlorophenol	ND	11		µg/L	1	10/10/2017 5:06:00 PM
2-Chloronaphthalene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
2-Nitroaniline	ND	21		µg/L	1	10/10/2017 5:06:00 PM
Dimethyl phthalate	ND	11		µg/L	1	10/10/2017 5:06:00 PM
2,6-Dinitrotoluene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Acenaphthylene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
3-Nitroaniline	ND	21		µg/L	1	10/10/2017 5:06:00 PM
4-Nitrophenol	ND	21		µg/L	1	10/10/2017 5:06:00 PM
2,4-Dinitrophenol	ND	21		µg/L	1	10/10/2017 5:06:00 PM
Acenaphthene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
2,4-Dinitrotoluene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Dibenzofuran	ND	11		µg/L	1	10/10/2017 5:06:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-GEI-302(MW)**Lab Order:** 1710012**Collection Date:** 10/4/2017 2:30:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-03B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	11		µg/L	1	10/10/2017 5:06:00 PM
4-Chlorophenyl phenyl ether	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Fluorene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
4-Nitroaniline	ND	21		µg/L	1	10/10/2017 5:06:00 PM
4,6-Dinitro-2-methylphenol	ND	21		µg/L	1	10/10/2017 5:06:00 PM
N-Nitrosodiphenylamine	ND	11		µg/L	1	10/10/2017 5:06:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	11		µg/L	1	10/10/2017 5:06:00 PM
4-Bromophenyl phenyl ether	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Hexachlorobenzene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Pentachlorophenol	ND	21		µg/L	1	10/10/2017 5:06:00 PM
Phenanthrene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Anthracene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Carbazole	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Di-n-butyl phthalate	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Fluoranthene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Pyrene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Butyl benzyl phthalate	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Bis(2-ethylhexyl)phthalate	ND	11		µg/L	1	10/10/2017 5:06:00 PM
3,3'-Dichlorobenzidine	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Benz(a)anthracene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Chrysene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Di-n-octyl phthalate	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Benzo(b)fluoranthene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Benzo(k)fluoranthene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Benzo(a)pyrene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Dibenz(a,h)anthracene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Indeno(1,2,3-cd)pyrene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Benzo(g,h,i)perylene	ND	11		µg/L	1	10/10/2017 5:06:00 PM
Surr: 2-Fluorophenol	34.7	25-62		%REC	1	10/10/2017 5:06:00 PM
Surr: Phenol-d5	28.1	13-43		%REC	1	10/10/2017 5:06:00 PM
Surr: Nitrobenzene-d5	55.4	36-108		%REC	1	10/10/2017 5:06:00 PM
Surr: 2-Fluorobiphenyl	66.6	44-117		%REC	1	10/10/2017 5:06:00 PM
Surr: 2,4,6-Tribromophenol	86.1	39-131		%REC	1	10/10/2017 5:06:00 PM
Surr: 4-Terphenyl-d14	98.8	44-122		%REC	1	10/10/2017 5:06:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT
 Method Blank

Sample ID: MB-27516 Batch ID: 27516 Test Code: SW8270D Units: µg/L Analysis Date: 10/10/2017 3:04:00 PM Prep Date: 10/9/2017
 Client ID: Run ID: SV-4_171010A SeqNo: 1006962

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qui
Phenol	ND	10	µg/L									
Bis(2-chloroethoxy)ether	ND	10	µg/L									
2-Chlorophenol	ND	10	µg/L									
1,3-Dichlorobenzene	ND	10	µg/L									
1,4-Dichlorobenzene	ND	10	µg/L									
Benzyl alcohol	ND	20	µg/L									
2-Methylphenol	ND	10	µg/L									
1,2-Dichlorobenzene	ND	10	µg/L									
Bis(2-chloroisopropyl)ether	ND	10	µg/L									
4-Methylphenol	ND	10	µg/L									
N-Nitrosodi-n-propylamine	ND	10	µg/L									
Hexachloroethane	ND	10	µg/L									
Nitrobenzene	ND	10	µg/L									
Isophorone	ND	10	µg/L									
2,4-Dimethylphenol	ND	10	µg/L									
Benzoic acid	ND	20	µg/L									
2-Nitrophenol	ND	10	µg/L									
Bis(2-chloroethoxy)methane	ND	10	µg/L									
2,4-Dichlorophenol	ND	10	µg/L									
1,2,4-Trichlorobenzene	ND	10	µg/L									
Naphthalene	ND	10	µg/L									
4-Chloroaniline	ND	10	µg/L									
Hexachlorobutadiene	ND	10	µg/L									
4-Chloro-3-methylphenol	ND	20	µg/L									
2-Methylnaphthalene	ND	10	µg/L									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Hexachlorocyclopentadiene	ND	10	µg/L
2,4,6-Trichlorophenol	ND	10	µg/L
2,4,5-Trichlorophenol	ND	10	µg/L
2-Chloronaphthalene	ND	10	µg/L
2-Nitroaniline	ND	20	µg/L
Dimethyl phthalate	ND	10	µg/L
2,6-Dinitrotoluene	ND	10	µg/L
Acenaphthylene	ND	10	µg/L
3-Nitroaniline	ND	20	µg/L
4-Nitrophenol	ND	20	µg/L
2,4-Dinitrophenol	ND	20	µg/L
Acenaphthene	ND	10	µg/L
2,4-Dinitrotoluene	ND	10	µg/L
Dibenzofuran	ND	10	µg/L
Diethyl phthalate	ND	10	µg/L
4-Chlorophenyl phenyl ether	ND	10	µg/L
Fluorene	ND	10	µg/L
4-Nitroaniline	ND	20	µg/L
4,6-Dinitro-2-methylphenol	ND	20	µg/L
N-Nitrosodiphenylamine	ND	10	µg/L
1,2-Diphenylhydrazine (as Azobe	ND	10	µg/L
4-Bromophenyl phenyl ether	ND	10	µg/L
Hexachlorobenzene	ND	10	µg/L
Pentachlorophenol	ND	20	µg/L
Phenanthrene	ND	10	µg/L
Anthracene	ND	10	µg/L
Carbazole	ND	10	µg/L
Di-n-butyl phthalate	ND	10	µg/L
Fluoranthene	ND	10	µg/L
Pyrene	ND	10	µg/L
Butyl benzyl phthalate	ND	10	µg/L

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

Date: 02-Nov-17

QC SUMMARY REPORT

Method Blank

Method Blank

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	NA - Not applicable where J values or ND results occur
	RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.		

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-27516	Batch ID: 27516	Test Code: SW8270D	Units: µg/L	Analysis Date: 10/10/2017 3:29:00 PM	Prep Date: 10/9/2017							
Client ID:	Run ID: SV-4_171010A	SeqNo: 1006963										
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qualifier
Phenol	24.06	10	µg/L	75	0	32.1	13	47	0			
Bis(2-chloroethyl)ether	34.51	10	µg/L	50	0	69	42	102	0			
2-Chlorophenol	53.19	10	µg/L	75	0	70.9	39	110	0			
1,3-Dichlorobenzene	36.29	10	µg/L	50	0	72.6	34	99	0			
1,4-Dichlorobenzene	37.2	10	µg/L	50	0	74.4	35	99	0			
Benzyl alcohol	29.54	20	µg/L	50	0	59.1	31	96	0			
2-Methylphenol	44.79	10	µg/L	75	0	59.7	35	100	0			
1,2-Dichlorobenzene	35.54	10	µg/L	50	0	71.1	37	99	0			
Bis(2-chloroisopropyl)ether	54.52	10	µg/L	50	0	109	31	104	0			
4-Methylphenol	54.88	10	µg/L	150	0	36.6	23	61	0			
N-Nitrosodi-n-propylamine	39.01	10	µg/L	50	0	78	43	111	0			
Hexachloroethane	38.27	10	µg/L	50	0	76.5	33	97	0			
Nitrobenzene	39.99	10	µg/L	50	0	80	46	102	0			
Isophorone	36.54	10	µg/L	50	0	73.1	38	105	0			
2,4-Dimethylphenol	50.19	10	µg/L	75	0	66.9	38	110	0			
Benzoic acid	25.11	20	µg/L	75	0	33.5	10	55	0			
2-Nitrophenol	55.04	10	µg/L	75	0	73.4	44	118	0			
Bis(2-chloroethoxy)methane	36.34	10	µg/L	50	0	72.7	50	106	0			
2,4-Dichlorophenol	59.84	10	µg/L	75	0	79.8	50	117	0			
1,2,4-Trichlorobenzene	41.57	10	µg/L	50	0	83.1	41	103	0			
Naphthalene	38.08	10	µg/L	50	0	76.2	45	100	0			
4-Chloroaniline	31.12	10	µg/L	50	0	62.2	28	113	0			
Hexachlorobutadiene	45.47	10	µg/L	50	0	90.9	40	101	0			
4-Chloro-3-methylphenol	61.72	20	µg/L	75	0	82.3	47	119	0			
2-Methylnaphthalene	38.04	10	µg/L	50	0	76.1	44	107	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.		QC SUMMARY REPORT										Laboratory Control Spike	
Work Order:	1710012												
Project:	1700396 MPA Berth 10 Final Design												
		8.7	10	µg/L	50	0	17.4	10	91	0			J
Hexachlorocyclopentadiene													
2,4,6-Trichlorophenol		74.27	10	µg/L	75	0	99	48	129	0			
2,4,5-Trichlorophenol		79.86	10	µg/L	75	0	106	45	131	0			
2-Chloronaphthalene		45.68	10	µg/L	50	0	91.4	48	107	0			
2-Nitroaniline		52.54	20	µg/L	50	0	105	44	122	0			
Dimethyl phthalate		48.81	10	µg/L	50	0	97.6	58	114	0			
2,6-Dinitrotoluene		45.65	10	µg/L	50	0	91.3	57	115	0			
Acenaphthylene		39.13	10	µg/L	50	0	78.3	52	110	0			
3-Nitroaniline		45.11	20	µg/L	50	0	90.2	50	121	0			
4-Nitrophenol		37.35	20	µg/L	75	0	49.8	14	53	0			
2,4-Dinitrophenol		65.27	20	µg/L	75	0	87	19	122	0			
Acenaphthene		44.21	10	µg/L	50	0	88.4	52	110	0			
2,4-Dinitrotoluene		49.84	10	µg/L	50	0	99.7	59	116	0			
Dibenzofuran		44.94	10	µg/L	50	0	89.9	51	119	0			
Diethyl phthalate		48.2	10	µg/L	50	0	96.4	57	115	0			
4-Chlorophenyl phenyl ether		50.38	10	µg/L	50	0	101	56	114	0			
Fluorene		46.54	10	µg/L	50	0	93.1	54	115	0			
4-Nitroaniline		43.1	20	µg/L	50	0	86.2	49	119	0			
4,6-Dinitro-2-methylphenol		66.01	20	µg/L	75	0	88	40	127	0			
N-Nitrosodiphenylamine		38.95	10	µg/L	50	0	77.9	51	118	0			
1,2-Diphenylhydrazine (as Azobe		36.01	10	µg/L	50	0	72	43	118	0			
4-Bromophenyl phenyl ether		43.59	10	µg/L	50	0	87.2	56	115	0			
Hexachlorobenzene		43.52	10	µg/L	50	0	87	56	114	0			
Pentachlorophenol		85.01	20	µg/L	75	0	113	39	128	0			
Phenanthrene		40.74	10	µg/L	50	0	81.5	54	112	0			
Anthracene		40.34	10	µg/L	50	0	80.7	54	113	0			
Carbazole		38.96	10	µg/L	50	0	77.9	52	120	0			
Di-n-butyl phthalate		39.8	10	µg/L	50	0	79.6	58	114	0			
Fluoranthene		44.66	10	µg/L	50	0	89.3	58	115	0			
Pyrene		39.67	10	µg/L	50	0	79.3	53	119	0			
Butyl benzyl phthalate		37.79	10	µg/L	50	0	75.6	53	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Bis(2-ethylhexyl)phthalate	39.48	10	µg/L	50	0	79	55	122	0
3,3'-Dichlorobenzidine	48.43	10	µg/L	50	0	96.9	31	126	0
Benzo(a)anthracene	40.89	10	µg/L	50	0	81.8	53	118	0
Chrysene	42.37	10	µg/L	50	0	84.7	56	116	0
Di-n-octyl phthalate	38.69	10	µg/L	50	0	77.4	50	124	0
Benzo(b)fluoranthene	42.76	10	µg/L	50	0	85.5	55	113	0
Benzo(k)fluoranthene	38.28	10	µg/L	50	0	76.6	59	115	0
Benzo(a)pyrene	40.21	10	µg/L	50	0	80.4	56	112	0
Dibenz(a,h)anthracene	39.04	10	µg/L	50	0	78.1	51	113	0
Indeno(1,2,3-cd)pyrene	40.01	10	µg/L	50	0	80	51	113	0
Benzo(g,h,i)perylene	38.67	10	µg/L	50	0	77.3	50	113	0
Surr: 2-Fluorophenol	30.86	1.0	µg/L	75	0	41.1	25	62	0
Surr: Phenol-d5	20.37	1.0	µg/L	75	0	27.2	13	43	0
Surr: Nitrobenzene-d5	38.93	1.0	µg/L	50	0	77.9	36	108	0
Surr: 2-Fluorobiphenyl	42.24	1.0	µg/L	50	0	84.5	44	117	0
Surr: 2,4,6-Tribromophenol	76.62	1.0	µg/L	75	0	102	39	131	0
Surr: 4-Terphenyl-d14	60.34	1.0	µg/L	50	0	121	44	122	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT
 Laboratory Control Spike Duplicate

Sample ID: LCSD-27516	Batch ID: 27516	Test Code: SW8270D	Units: µg/L	Analysis Date: 10/10/2017 3:53:00 PM	Prep Date: 10/9/2017							
Client ID:	Run ID: SV-4_171010A	SeqNo: 1006964										
Analyte	QC Sample		QC Spike		Original Sample		%RPD	RPDLimit	Que			
	Result	RL	Units	Amount	Result	%REC				LowLimit	HighLimit	or MS Result
Phenol	22.6	10	µg/L	75	0	30.1	13	47	24.06	6.26	25	
Bis(2-chloroethyl)ether	33.92	10	µg/L	50	0	67.8	42	102	34.51	1.72	25	
2-Chlorophenol	49.94	10	µg/L	75	0	66.6	39	110	53.19	6.3	25	
1,3-Dichlorobenzene	35.23	10	µg/L	50	0	70.5	34	99	36.29	2.96	25	
1,4-Dichlorobenzene	35.72	10	µg/L	50	0	71.4	35	99	37.2	4.06	25	
Benzyl alcohol	26.74	20	µg/L	50	0	53.5	31	96	29.54	9.95	25	
2-Methylphenol	44.64	10	µg/L	75	0	59.5	35	100	44.79	0.335	25	
1,2-Dichlorobenzene	35.09	10	µg/L	50	0	70.2	37	99	35.54	1.27	25	
Bis(2-chloroisopropyl)ether	52.52	10	µg/L	50	0	105	31	104	54.52	3.74	25	S
4-Methylphenol	53.05	10	µg/L	150	0	35.4	23	61	54.88	3.39	25	
N-Nitrosodi-n-propylamine	37.04	10	µg/L	50	0	74.1	43	111	39.01	5.18	25	
Hexachloroethane	37.72	10	µg/L	50	0	75.4	33	97	38.27	1.45	25	
Nitrobenzene	37.62	10	µg/L	50	0	75.2	46	102	39.99	6.11	25	
Isophorone	34.43	10	µg/L	50	0	68.9	38	105	36.54	5.95	25	
2,4-Dimethylphenol	50.21	10	µg/L	75	0	66.9	38	110	50.19	0.0398	25	
Benzoic acid	29.16	20	µg/L	75	0	38.9	10	55	25.11	14.9	25	
2-Nitrophenol	52.85	10	µg/L	75	0	70.5	44	118	55.04	4.06	25	
Bis(2-chloroethoxy)methane	34.11	10	µg/L	50	0	68.2	50	106	36.34	6.33	25	
2,4-Dichlorophenol	57.89	10	µg/L	75	0	77.2	50	117	59.84	3.31	25	
1,2,4-Trichlorobenzene	39.66	10	µg/L	50	0	79.3	41	103	41.57	4.7	25	
Naphthalene	36.96	10	µg/L	50	0	73.9	45	100	38.08	2.99	25	
4-Chloroaniline	31.64	10	µg/L	50	0	63.3	28	113	31.12	1.66	25	
Hexachlorobutadiene	43.47	10	µg/L	50	0	86.9	40	101	45.47	4.5	25	
4-Chloro-3-methylphenol	61.84	20	µg/L	75	0	82.5	47	119	61.72	0.194	25	
2-Methylnaphthalene	35.89	10	µg/L	50	0	71.8	44	107	38.04	5.82	25	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Hexachlorocyclopentadiene	8.69	10	µg/L	50	0	17.4	10	91	8.7	0.115	25	J
2,4,6-Trichlorophenol	73.83	10	µg/L	75	0	98.4	48	129	74.27	0.594	25	
2,4,5-Trichlorophenol	82.08	10	µg/L	75	0	109	45	131	79.86	2.74	25	
2-Chloronaphthalene	44	10	µg/L	50	0	88	48	107	45.68	3.75	25	
2-Nitroaniline	51.95	20	µg/L	50	0	104	44	122	52.54	1.13	25	
Dimethyl phthalate	50.09	10	µg/L	50	0	100	58	114	48.81	2.59	25	
2,6-Dinitrotoluene	48.61	10	µg/L	50	0	97.2	57	115	45.65	6.28	25	
Acenaphthylene	38.12	10	µg/L	50	0	76.2	52	110	39.13	2.61	25	
3-Nitroaniline	44.69	20	µg/L	50	0	89.4	50	121	45.11	0.935	25	
4-Nitrophenol	37.02	20	µg/L	75	0	49.4	14	53	37.35	0.887	25	
2,4-Dinitrophenol	72.95	20	µg/L	75	0	97.3	19	122	65.27	11.1	25	
Acenaphthene	44.21	10	µg/L	50	0	88.4	52	110	44.21	0	25	
2,4-Dinitrotoluene	52.05	10	µg/L	50	0	104	59	116	49.84	4.34	25	
Dibenzofuran	43.88	10	µg/L	50	0	87.8	51	119	44.94	2.39	25	
Diethyl phthalate	50.75	10	µg/L	50	0	102	57	115	48.2	5.15	25	
4-Chlorophenyl phenyl ether	50.83	10	µg/L	50	0	102	56	114	50.38	0.889	25	
Fluorene	47.04	10	µg/L	50	0	94.1	54	115	46.54	1.07	25	
4-Nitroaniline	46.08	20	µg/L	50	0	92.2	49	119	43.1	6.68	25	
4,6-Dinitro-2-methylphenol	70.17	20	µg/L	75	0	93.6	40	127	66.01	6.11	25	
N-Nitrosodiphenylamine	40.62	10	µg/L	50	0	81.2	51	118	38.95	4.2	25	
1,2-Diphenylhydrazine (as Azobe	37.36	10	µg/L	50	0	74.7	43	118	36.01	3.68	25	
4-Bromophenyl phenyl ether	44.95	10	µg/L	50	0	89.9	56	115	43.59	3.07	25	
Hexachlorobenzene	47.89	10	µg/L	50	0	95.8	56	114	43.52	9.56	25	
Pentachlorophenol	85.37	20	µg/L	75	0	114	39	128	85.01	0.423	25	
Phenanthrene	43.01	10	µg/L	50	0	86	54	112	40.74	5.42	25	
Anthracene	43.38	10	µg/L	50	0	86.8	54	113	40.34	7.26	25	
Carbazole	42.16	10	µg/L	50	0	84.3	52	120	38.96	7.89	25	
Di-n-butyl phthalate	43.12	10	µg/L	50	0	86.2	58	114	39.8	8.01	25	
Fluoranthene	46.7	10	µg/L	50	0	93.4	58	115	44.66	4.47	25	
Pyrene	42.04	10	µg/L	50	0	84.1	53	119	39.67	5.8	25	
Butyl benzyi phthalate	39.96	10	µg/L	50	0	79.9	53	120	37.79	5.58	25	

Qualifiers: ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Bis(2-ethylhexyl)phthalate	41.66	10	µg/L	50	0	83.3	55	122	39.48	5.37	25
3,3'-Dichlorobenzidine	49.64	10	µg/L	50	0	99.3	31	126	48.43	2.47	25
Benzo(a)anthracene	44.15	10	µg/L	50	0	88.3	53	118	40.89	7.67	25
Chrysene	44.61	10	µg/L	50	0	89.2	56	116	42.37	5.15	25
Di-n-octyl phthalate	40.44	10	µg/L	50	0	80.9	50	124	38.69	4.42	25
Benzo(b)fluoranthene	46.89	10	µg/L	50	0	93.8	55	113	42.76	9.21	25
Benzo(k)fluoranthene	40.57	10	µg/L	50	0	81.1	59	115	38.28	5.81	25
Benzo(a)pyrene	43.94	10	µg/L	50	0	87.9	56	112	40.21	8.87	25
Dibenz(a,h)anthracene	41.65	10	µg/L	50	0	83.3	51	113	39.04	6.47	25
Indeno(1,2,3-cd)pyrene	42.67	10	µg/L	50	0	85.3	51	113	40.01	6.43	25
Benzo(g,h,i)perylene	41.29	10	µg/L	50	0	82.6	50	113	38.67	6.55	25
Surr: 2-Fluorophenol	29.68	1.0	µg/L	75	0	39.6	25	62	0	0	0
Surr: Phenol-d5	19.17	1.0	µg/L	75	0	25.6	13	43	0	0	0
Surr: Nitrobenzene-d5	36.76	1.0	µg/L	50	0	73.5	36	108	0	0	0
Surr: 2-Fluorobiphenyl	39.46	1.0	µg/L	50	0	78.9	44	117	0	0	0
Surr: 2,4,6-Tribromophenol	79.78	1.0	µg/L	75	0	106	39	131	0	0	0
Surr: 4-Terphenyl-d14	62.25	1.0	µg/L	50	0	124	44	122	0	0	0
											S

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-WE-10**Lab Order:** 1710012**Collection Date:** 10/4/2017 11:30:00 AM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-01B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PAH BY EPA 8270D SIM		SW8270D				Analyst: NS
Naphthalene	0.12	0.10		µg/L	1	10/9/2017 9:18:00 PM
2-Methylnaphthalene	ND	0.10		µg/L	1	10/9/2017 9:18:00 PM
Acenaphthylene	ND	0.10		µg/L	1	10/9/2017 9:18:00 PM
Acenaphthene	1.5	0.10		µg/L	1	10/9/2017 9:18:00 PM
Fluorene	0.24	0.10		µg/L	1	10/9/2017 9:18:00 PM
Phenanthrene	ND	0.073		µg/L	1	10/9/2017 9:18:00 PM
Anthracene	0.13	0.10		µg/L	1	10/9/2017 9:18:00 PM
Fluoranthene	ND	0.10		µg/L	1	10/9/2017 9:18:00 PM
Pyrene	ND	0.10		µg/L	1	10/9/2017 9:18:00 PM
Benz(a)anthracene	ND	0.062		µg/L	1	10/9/2017 9:18:00 PM
Chrysene	ND	0.10		µg/L	1	10/9/2017 9:18:00 PM
Benzo(b)fluoranthene	ND	0.083		µg/L	1	10/9/2017 9:18:00 PM
Benzo(k)fluoranthene	ND	0.10		µg/L	1	10/9/2017 9:18:00 PM
Benzo(a)pyrene	ND	0.10		µg/L	1	10/9/2017 9:18:00 PM
Dibenz(a,h)anthracene	ND	0.10		µg/L	1	10/9/2017 9:18:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.10		µg/L	1	10/9/2017 9:18:00 PM
Benzo(g,h,i)perylene	ND	0.10		µg/L	1	10/9/2017 9:18:00 PM
Surr: Nitrobenzene-d5	74.0	33-107		%REC	1	10/9/2017 9:18:00 PM
Surr: 2-Fluorobiphenyl	66.1	39-107		%REC	1	10/9/2017 9:18:00 PM
Surr: 4-Terphenyl-d14	52.6	31-133		%REC	1	10/9/2017 9:18:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-GEI-212**Lab Order:** 1710012**Collection Date:** 10/4/2017 12:30:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-02B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PAH BY EPA 8270D SIM		SW8270D		Analyst: NS		
Naphthalene	0.12	0.10		µg/L	1	10/9/2017 9:54:00 PM
2-Methylnaphthalene	ND	0.10		µg/L	1	10/9/2017 9:54:00 PM
Acenaphthylene	0.62	0.10		µg/L	1	10/9/2017 9:54:00 PM
Acenaphthene	4.6	0.10		µg/L	1	10/9/2017 9:54:00 PM
Fluorene	ND	0.10		µg/L	1	10/9/2017 9:54:00 PM
Phenanthrene	0.69	0.070		µg/L	1	10/9/2017 9:54:00 PM
Anthracene	0.40	0.10		µg/L	1	10/9/2017 9:54:00 PM
Fluoranthene	0.46	0.10		µg/L	1	10/9/2017 9:54:00 PM
Pyrene	0.39	0.10		µg/L	1	10/9/2017 9:54:00 PM
Benz(a)anthracene	0.085	0.060		µg/L	1	10/9/2017 9:54:00 PM
Chrysene	ND	0.10		µg/L	1	10/9/2017 9:54:00 PM
Benzo(b)fluoranthene	ND	0.080		µg/L	1	10/9/2017 9:54:00 PM
Benzo(k)fluoranthene	ND	0.10		µg/L	1	10/9/2017 9:54:00 PM
Benzo(a)pyrene	ND	0.10		µg/L	1	10/9/2017 9:54:00 PM
Dibenz(a,h)anthracene	ND	0.10		µg/L	1	10/9/2017 9:54:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.10		µg/L	1	10/9/2017 9:54:00 PM
Benzo(g,h,i)perylene	ND	0.10		µg/L	1	10/9/2017 9:54:00 PM
Surr: Nitrobenzene-d5	57.6	33-107		%REC	1	10/9/2017 9:54:00 PM
Surr: 2-Fluorobiphenyl	51.8	39-107		%REC	1	10/9/2017 9:54:00 PM
Surr: 4-Terphenyl-d14	91.5	31-133		%REC	1	10/9/2017 9:54:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.**Client Sample ID:** 1700396-GEI-302(MW)**Lab Order:** 1710012**Collection Date:** 10/4/2017 2:30:00 PM**Project:** 1700396 MPA Berth 10 Final Design**Matrix:** GROUNDWATER**Lab ID:** 1710012-03B

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PAH BY EPA 8270D SIM		SW8270D				Analyst: NS
Naphthalene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
2-Methylnaphthalene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Acenaphthylene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Acenaphthene	0.33	0.11		µg/L	1	10/9/2017 10:30:00 PM
Fluorene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Phenanthrene	ND	0.074		µg/L	1	10/9/2017 10:30:00 PM
Anthracene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Fluoranthene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Pyrene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Benz(a)anthracene	0.074	0.063		µg/L	1	10/9/2017 10:30:00 PM
Chrysene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Benzo(b)fluoranthene	ND	0.084		µg/L	1	10/9/2017 10:30:00 PM
Benzo(k)fluoranthene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Benzo(a)pyrene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Dibenz(a,h)anthracene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Benzo(g,h,i)perylene	ND	0.11		µg/L	1	10/9/2017 10:30:00 PM
Surr: Nitrobenzene-d5	60.2	33-107		%REC	1	10/9/2017 10:30:00 PM
Surr: 2-Fluorobiphenyl	54.4	39-107		%REC	1	10/9/2017 10:30:00 PM
Surr: 4-Terphenyl-d14	87.0	31-133		%REC	1	10/9/2017 10:30:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT
 Method Blank

Sample ID: MB-27516	Batch ID: 27516	Test Code: SW8270D	Units: µg/L	Analysis Date: 10/9/2017 7:30:00 PM	Prep Date: 10/9/2017							
Client ID:	Run ID: SV-4_171009A	QC Spike Amount	Result	SeqNo: 1006951								
Analyte	QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qualifier
Naphthalene	ND	0.10	µg/L									
2-Methylnaphthalene	ND	0.10	µg/L									
Acenaphthylene	ND	0.10	µg/L									
Acenaphthene	ND	0.10	µg/L									
Fluorene	ND	0.10	µg/L									
Phenanthrene	ND	0.070	µg/L									
Anthracene	ND	0.10	µg/L									
Fluoranthene	ND	0.10	µg/L									
Pyrene	ND	0.10	µg/L									
Benz(a)anthracene	ND	0.060	µg/L									
Chrysene	ND	0.10	µg/L									
Benzo(b)fluoranthene	ND	0.080	µg/L									
Benzo(k)fluoranthene	ND	0.10	µg/L									
Benzo(a)pyrene	ND	0.10	µg/L									
Dibenz(a,h)anthracene	ND	0.10	µg/L									
Indeno(1,2,3-cd)pyrene	ND	0.10	µg/L									
Benzo(g,h,i)perylene	ND	0.10	µg/L									
Surr: Nitrobenzene-d5	5.13	1.0	µg/L	10	0	51.3	33	107	0			
Surr: 2-Fluorobiphenyl	4.205	1.0	µg/L	10	0	42	39	107	0			
Surr: 4-Terphenyl-d14	6.235	1.0	µg/L	10	0	62.4	31	133	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

QC SUMMARY REPORT

Laboratory Control Spike

CLIENT: GEL Consultants, Inc.
Work Order: 1710012
Project: 1700396 MPA Berth 10 Final Design

Sample ID: LCS-27516	Batch ID: 27516	Test Code: SW8270D	Units: µg/L	Analysis Date: 10/9/2017 8:06:00 PM	Prep Date: 10/9/2017							
Client ID:	Run ID: SV-4_171009A	SeqNo: 1006952										
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Naphthalene	3.755	0.10	µg/L	5	0	75.1	32	113	0			
2-Methylnaphthalene	3.545	0.10	µg/L	5	0	70.9	32	121	0			
Acenaphthylene	3.8	0.10	µg/L	5	0	76	38	126	0			
Acenaphthene	3.705	0.10	µg/L	5	0	74.1	38	123	0			
Fluorene	4.115	0.10	µg/L	5	0	82.3	47	127	0			
Phenanthrene	4.515	0.070	µg/L	5	0	90.3	51	117	0			
Anthracene	3.645	0.10	µg/L	5	0	72.9	52	123	0			
Fluoranthene	4.37	0.10	µg/L	5	0	87.4	52	125	0			
Pyrene	4.735	0.10	µg/L	5	0	94.7	48	134	0			
Benz(a)anthracene	4.43	0.060	µg/L	5	0	88.6	51	125	0			
Chrysene	4.415	0.10	µg/L	5	0	88.3	52	130	0			
Benzo(b)fluoranthene	4.385	0.080	µg/L	5	0	87.7	56	129	0			
Benzo(k)fluoranthene	4.27	0.10	µg/L	5	0	85.4	51	134	0			
Benzo(a)pyrene	4.425	0.10	µg/L	5	0	88.5	53	129	0			
Dibenz(a,h)anthracene	4.27	0.10	µg/L	5	0	85.4	52	127	0			
Indeno(1,2,3-cd)pyrene	4.3	0.10	µg/L	5	0	86	53	124	0			
Benzo(g,h,i)perylene	4.425	0.10	µg/L	5	0	88.5	53	126	0			
Surr: Nitrobenzene-d5	0.96	0.50	µg/L	2	0	48	33	107	0			
Surr: 2-Fluorobiphenyl	0.865	0.50	µg/L	2	0	43.2	39	107	0			
Surr: 4-Terphenyl-d14	1.405	0.50	µg/L	2	0	70.2	31	133	0			

Qualifiers: ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: GEI Consultants, Inc.
Work Order: 1710012
Project: 1700396 MPA Berth 10 Final Design

Sample ID: LCSD-27516 Batch ID: 27516 Test Code: SW8270D Units: µg/L Analysis Date: 10/9/2017 8:42:00 PM Prep Date: 10/9/2017
Client ID: Run ID: SV-4_171009A SeqNo: 1006953

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qus
Naphthalene	3.53	0.10	µg/L	5	0	70.6	32	113	3.755	6.18	25	
2-Methylnaphthalene	3.335	0.10	µg/L	5	0	66.7	32	121	3.545	6.1	25	
Acenaphthylene	3.775	0.10	µg/L	5	0	75.5	38	126	3.8	0.66	25	
Acenaphthene	3.675	0.10	µg/L	5	0	73.5	38	123	3.705	0.813	25	
Fluorene	4.18	0.10	µg/L	5	0	83.6	47	127	4.115	1.57	25	
Phenanthrene	4.635	0.070	µg/L	5	0	92.7	51	117	4.515	2.62	25	
Anthracene	3.72	0.10	µg/L	5	0	74.4	52	123	3.645	2.04	25	
Fluoranthene	4.56	0.10	µg/L	5	0	91.2	52	125	4.37	4.26	25	
Pyrene	4.965	0.10	µg/L	5	0	99.3	48	134	4.735	4.74	25	
Benz(a)anthracene	4.635	0.060	µg/L	5	0	92.7	51	125	4.43	4.52	25	
Chrysene	4.68	0.10	µg/L	5	0	93.6	52	130	4.415	5.83	25	
Benzo(b)fluoranthene	4.675	0.080	µg/L	5	0	93.5	56	129	4.385	6.4	25	
Benzo(k)fluoranthene	4.425	0.10	µg/L	5	0	88.5	51	134	4.27	3.57	25	
Benzo(a)pyrene	4.63	0.10	µg/L	5	0	92.6	53	129	4.425	4.53	25	
Dibenz(a,h)anthracene	4.505	0.10	µg/L	5	0	90.1	52	127	4.27	5.36	25	
Indeno(1,2,3-cd)pyrene	4.53	0.10	µg/L	5	0	90.6	53	124	4.3	5.21	25	
Benzo(g,h,i)perylene	4.625	0.10	µg/L	5	0	92.5	53	126	4.425	4.42	25	
Surr: Nitrobenzene-d5	0.895	0.50	µg/L	2	0	44.8	33	107	0	0	0	
Surr: 2-Fluorobiphenyl	0.82	0.50	µg/L	2	0	41	39	107	0	0	0	
Surr: 4-Terphenyl-d14	1.47	0.50	µg/L	2	0	73.5	31	133	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1710012**Lab ID:** 1710012-01**Collection Date:** 10/4/2017 11:30:00 AM**Collection Time:****Client Sample ID:** 1700396-WE-10**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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PCBS BY EPA8082**SW8082A****Analyst:** NS

Aroclor 1016	ND	0.21		µg/L	1	10/20/2017 8:36:00 PM
Aroclor 1221	ND	0.21		µg/L	1	10/20/2017 8:36:00 PM
Aroclor 1232	ND	0.21		µg/L	1	10/20/2017 8:36:00 PM
Aroclor 1242	ND	0.21		µg/L	1	10/20/2017 8:36:00 PM
Aroclor 1248	ND	0.21		µg/L	1	10/20/2017 8:36:00 PM
Aroclor 1254	ND	0.21		µg/L	1	10/20/2017 8:36:00 PM
Aroclor 1260	ND	0.21		µg/L	1	10/20/2017 8:36:00 PM
Surr: Decachlorobiphenyl	69.5	27-131		%REC	1	10/20/2017 8:36:00 PM
Surr: Tetrachloro-m-xylene	79.8	37-130		%REC	1	10/20/2017 8:36:00 PM

Lab ID: 1710012-02**Collection Date:** 10/4/2017 12:30:00 PM**Collection Time:****Client Sample ID:** 1700396-GEI-212**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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PCBS BY EPA8082**SW8082A****Analyst:** NS

Aroclor 1016	ND	0.21		µg/L	1	10/24/2017 1:51:00 PM
Aroclor 1221	ND	0.21		µg/L	1	10/24/2017 1:51:00 PM
Aroclor 1232	ND	0.21		µg/L	1	10/24/2017 1:51:00 PM
Aroclor 1242	ND	0.21		µg/L	1	10/24/2017 1:51:00 PM
Aroclor 1248	ND	0.21		µg/L	1	10/24/2017 1:51:00 PM
Aroclor 1254	ND	0.21		µg/L	1	10/24/2017 1:51:00 PM
Aroclor 1260	ND	0.21		µg/L	1	10/24/2017 1:51:00 PM
Surr: Decachlorobiphenyl	60.4	27-131		%REC	1	10/24/2017 1:51:00 PM
Surr: Tetrachloro-m-xylene	74.2	37-130		%REC	1	10/24/2017 1:51:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1710012**Lab ID:** 1710012-03**Collection Date:** 10/4/2017 2:30:00 PM**Collection Time:****Client Sample ID:** 1700396-GEI-302(MW)**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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PCBS BY EPA8082**SW8082A****Analyst:** NS

Aroclor 1016	ND	0.20		µg/L	1	10/24/2017 2:18:00 PM
Aroclor 1221	ND	0.20		µg/L	1	10/24/2017 2:18:00 PM
Aroclor 1232	ND	0.20		µg/L	1	10/24/2017 2:18:00 PM
Aroclor 1242	ND	0.20		µg/L	1	10/24/2017 2:18:00 PM
Aroclor 1248	ND	0.20		µg/L	1	10/24/2017 2:18:00 PM
Aroclor 1254	ND	0.20		µg/L	1	10/24/2017 2:18:00 PM
Aroclor 1260	ND	0.20		µg/L	1	10/24/2017 2:18:00 PM
Surr: Decechlorobiphenyl	54.9	27-131		%REC	1	10/24/2017 2:18:00 PM
Surr: Tetrachloro-m-xylene	66.9	37-130		%REC	1	10/24/2017 2:18:00 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID: MIB-27528		Batch ID: 27528	Test Code: SW8082A		Units: µg/L	Analysis Date: 10/20/2017 12:56:00 P		Prep Date: 10/10/2017		
Client ID:			Run ID:	GC-ELVIS_171020A		SeqNo: 1008270				
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	RPDLimit	Qua
Aroclor 1016	ND	0.20	µg/L							
Aroclor 1221	ND	0.20	µg/L							
Aroclor 1232	ND	0.20	µg/L							
Aroclor 1242	ND	0.20	µg/L							
Aroclor 1248	ND	0.20	µg/L							
Aroclor 1254	ND	0.20	µg/L							
Aroclor 1260	ND	0.20	µg/L							
Surr: Decachlorobiphenyl	0.04065	0	µg/L	0.064	0	63.5	27	131	0	
Surr: Tetrachloro-m-xylene	0.05258	0	µg/L	0.064	0	82.2	37	130	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: LCS-27528	Batch ID: 27528	Test Code: SW8082A	Units: µg/L	Analysis Date: 10/20/2017 1:23:00 PM	Prep Date: 10/10/2017						
Client ID:		Run ID: GC-ELVIS_171020A		SeqNo: 1008271							
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Queue
Aroclor 1016	3.533	0.20	µg/L	4	0	88.3	44	119	0		
Aroclor 1260	3.443	0.20	µg/L	4	0	86.1	48	123	0		
Surr: Decachlorobiphenyl	0.04374	0	µg/L	0.064	0	68.4	27	131	0		
Surr: Tetrachloro-m-xylene	0.05428	0	µg/L	0.064	0	84.8	37	130	0		

Sample ID: LCS-27528	Batch ID: 27528	Test Code: SW8082A	Units: µg/L	Analysis Date: 10/20/2017 1:50:00 PM	Prep Date: 10/10/2017						
Client ID:		Run ID: GC-ELVIS_171020A		SeqNo: 1008272							
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Que
Aroclor 1016	3.678	0.20	µg/L	4	0	91.9	44	119	4.02	20	
Aroclor 1260	3.612	0.20	µg/L	4	0	90.3	48	123	4.8	20	
Surr: Decachlorobiphenyl	0.04457	0	µg/L	0.064	0	69.6	27	131	0	0	
Surr: Tetrachloro-m-xylene	0.05747	0	µg/L	0.064	0	89.8	37	130	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1710012**Lab ID:** 1710012-01**Collection Date:** 10/4/2017 11:30:00 AM**Collection Time:****Client Sample ID:** 1700396-WE-10**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP- TOTAL METALS BY 200.7		E200.7		Analyst: AL		
Cadmium	ND	4.0		µg/L	1	10/16/2017 4:47:34 PM
Chromium	ND	10		µg/L	1	10/16/2017 4:47:34 PM
Copper	ND	25		µg/L	1	10/16/2017 4:47:34 PM
Iron	21,000	100		µg/L	1	10/18/2017 2:47:17 PM
Nickel	ND	40		µg/L	1	10/16/2017 4:47:34 PM
Silver	ND	7.0		µg/L	1	10/16/2017 4:47:34 PM
Zinc	ND	20		µg/L	1	10/16/2017 4:47:34 PM
ARSENIC, TOTAL		E200.9_AS		Analyst: REB		
Arsenic	ND	2.0		µg/L	1	10/20/2017 11:04:34 AM
LEAD, TOTAL		E200.9_PB		Analyst: REB		
Lead	ND	2.0		µg/L	1	10/19/2017 11:14:53 AM
ANTIMONY, TOTAL		E200.9_SB		Analyst: REB		
Antimony	ND	5.0		µg/L	1	10/18/2017 11:28:36 AM
SELENIUM, TOTAL		E200.9_SE		Analyst: REB		
Selenium	ND	5.0		µg/L	1	10/19/2017 12:25:46 PM
MERCURY, TOTAL		E245.1		Analyst: AL		
Mercury	ND	0.20		µg/L	1	10/6/2017 4:48:50 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1710012**Lab ID:** 1710012-02**Collection Date:** 10/4/2017 12:30:00 PM**Collection Time:****Client Sample ID:** 1700396-GEI-212**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP- TOTAL METALS BY 200.7		E200.7		Analyst: AL		
Cadmium	ND	4.0		µg/L	1	10/16/2017 5:20:45 PM
Chromium	ND	10		µg/L	1	10/16/2017 5:20:45 PM
Copper	ND	25		µg/L	1	10/16/2017 5:20:45 PM
Iron	170	100		µg/L	1	10/18/2017 3:20:33 PM
Nickel	ND	40		µg/L	1	10/16/2017 5:20:45 PM
Silver	ND	7.0		µg/L	1	10/16/2017 5:20:45 PM
Zinc	ND	20		µg/L	1	10/16/2017 5:20:45 PM
ARSENIC, TOTAL		E200.9_AS		Analyst: REB		
Arsenic	ND	2.0		µg/L	1	10/20/2017 11:19:01 AM
LEAD, TOTAL		E200.9_PB		Analyst: REB		
Lead	ND	2.0		µg/L	1	10/17/2017 5:30:50 PM
ANTIMONY, TOTAL		E200.9_SB		Analyst: REB		
Antimony	ND	5.0		µg/L	1	10/18/2017 11:42:39 AM
SELENIUM, TOTAL		E200.9_SE		Analyst: REB		
Selenium	ND	5.0	PS	µg/L	1	10/19/2017 12:40:44 PM
MERCURY, TOTAL		E245.1		Analyst: AL		
Mercury	ND	0.20		µg/L	1	10/6/2017 4:52:40 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1710012**Lab ID:** 1710012-03**Collection Date:** 10/4/2017 2:30:00 PM**Collection Time:****Client Sample ID:** 1700396-GEI-302(MW)**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP- TOTAL METALS BY 200.7		E200.7				Analyst: AL
Cadmium	ND	4.0		µg/L	1	10/18/2017 3:27:13 PM
Chromium	ND	10		µg/L	1	10/18/2017 3:27:13 PM
Copper	ND	25		µg/L	1	10/18/2017 3:27:13 PM
Iron	100	100		µg/L	1	10/18/2017 3:27:13 PM
Nickel	ND	40		µg/L	1	10/18/2017 3:27:13 PM
Silver	ND	7.0		µg/L	1	10/18/2017 3:27:13 PM
Zinc	ND	20		µg/L	1	10/18/2017 3:27:13 PM
ARSENIC, TOTAL		E200.9_AS				Analyst: REB
Arsenic	ND	2.0		µg/L	1	10/20/2017 11:24:45 AM
LEAD, TOTAL		E200.9_PB				Analyst: REB
Lead	ND	2.0		µg/L	1	10/17/2017 5:36:56 PM
ANTIMONY, TOTAL		E200.9_SB				Analyst: REB
Antimony	ND	5.0		µg/L	1	10/18/2017 11:48:21 AM
SELENIUM, TOTAL		E200.9_SE				Analyst: REB
Selenium	ND	5.0	PS	µg/L	1	10/19/2017 12:58:56 PM
MERCURY, TOTAL		E245.1				Analyst: AL
Mercury	ND	0.20		µg/L	1	10/6/2017 4:56:32 PM

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1710012**Lab ID:** 1710012-01**Collection Date:** 10/4/2017 11:30:00 AM**Collection Time:****Client Sample ID:** 1700396-WE-10**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	10/5/2017 10:15:00 AM
HEXAVALENT CHROMIUM, DISSOLVED		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	10/5/2017 10:15:00 AM
OIL & GREASE, TPH (NON-POLAR MATERIAL)		E1664				Analyst: AL
SGT-Hexane Extractable Material	ND	5.0		mg/L	1	10/24/2017
TOTAL SUSPENDED SOLIDS		SM2540 D				Analyst: JK
Suspended Solids (Residue, Non-Filterable)	45	4.0		mg/L	1	10/10/2017
CHLORINE, TOTAL RESIDUAL (MODIFIED)		M4500-CL G				Analyst: AL
Chlorine, Total Residual	ND	0.10	H	mg/L	1	10/5/2017 11:05:00 AM
CYANIDE, TOTAL		SM4500-CN C,E				Analyst: AL
Cyanide	ND	0.010		mg/L	1	10/18/2017
AMMONIA AS NITROGEN		SM4500-NH3, C				Analyst: AL
Nitrogen, Ammonia (As N)	2.4	1.0		mg/L	1	10/25/2017

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1710012**Lab ID:** i710012-02**Collection Date:** 10/4/2017 12:30:00 PM**Collection Time:****Client Sample ID:** 1700396-GEI-212**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	10/5/2017 10:15:00 AM
HEXAVALENT CHROMIUM, DISSOLVED		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	10/5/2017 10:15:00 AM
OIL & GREASE, TPH (NON-POLAR MATERIAL)		E1664				Analyst: AL
SGT-Hexane Extractable Material	14	5.0		mg/L	1	10/24/2017
TOTAL SUSPENDED SOLIDS		SM2540 D				Analyst: JK
Suspended Solids (Residue, Non-Filterable)	12	4.0		mg/L	1	10/10/2017
CHLORINE, TOTAL RESIDUAL (MODIFIED)		M4500-CL G				Analyst: AL
Chlorine, Total Residual	ND	0.10	H	mg/L	1	10/5/2017 11:05:00 AM
CYANIDE, TOTAL		SM4500-CN C,E				Analyst: AL
Cyanide	ND	0.010		mg/L	1	10/18/2017
AMMONIA AS NITROGEN		SM4500-NH3, C				Analyst: AL
Nitrogen, Ammonia (As N)	ND	1.0		mg/L	1	10/25/2017

AMRO Environmental Laboratories Corp.

Date: 02-Nov-17

CLIENT: GEI Consultants, Inc.
Project: 1700396 MPA Berth 10 Final Design**Lab Order:** 1710012**Lab ID:** 1710012-03**Collection Date:** 10/4/2017 2:30:00 PM**Collection Time:****Client Sample ID:** 1700396-GEI-302(MW)**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	10/5/2017 10:15:00 AM
HEXAVALENT CHROMIUM, DISSOLVED		SW7196A				Analyst: AL
Chromium, Hexavalent	ND	0.010		mg/L	1	10/5/2017 10:15:00 AM
OIL & GREASE, TPH (NON-POLAR MATERIAL)		E1664				Analyst: AL
SGT-Hexane Extractable Material	ND	5.0		mg/L	1	10/24/2017
TOTAL SUSPENDED SOLIDS		SM2540 D				Analyst: JK
Suspended Solids (Residue, Non-Filterable)	17	4.0		mg/L	1	10/10/2017
CHLORINE, TOTAL RESIDUAL (MODIFIED)		M4500-CL G				Analyst: AL
Chlorine, Total Residual	ND	0.10	H	mg/L	1	10/5/2017 11:05:00 AM
CYANIDE, TOTAL		SM4500-CN C,E				Analyst: AL
Cyanide	ND	0.010		mg/L	1	10/18/2017
AMMONIA AS NITROGEN		SM4500-NH3, C				Analyst: AL
Nitrogen, Ammonia (As N)	ND	1.0		mg/L	1	10/25/2017

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT
 Method Blank

Sample ID	mb-27525	Batch ID: 27525	Test Code: E200.7	Units: µg/L	Analysis Date	10/16/2017 4:29:49 PM	Prep Date	10/16/2017					
Client ID:			Run ID:	ICP-OPTIMA_171016A	SeqNo:	1007444							
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que
Cadmium		ND	4.0	µg/L									
Chromium		ND	10	µg/L									
Copper		ND	25	µg/L									
Nickel		ND	40	µg/L									
Silver		ND	7.0	µg/L									
Zinc		ND	20	µg/L									

Sample ID	mb-27525	Batch ID: 27525	Test Code: E200.7	Units: µg/L	Analysis Date	10/18/2017 2:36:07 PM	Prep Date	10/16/2017					
Client ID:			Run ID: ICP-OPTIMA_171018A		SeqNo: 1007795								
Analyte		QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Iron		ND	100	µg/L									

Sample ID	MB-27525	Batch ID: 27525	Test Code: E200.9_As	Units: µg/L	Analysis Date	10/20/2017 10:58:57 A	Prep Date	10/16/2017					
Client ID:			Run ID: AANALYST 600_171020		SeqNo: 1008024								
Analyte		QC Sample Result	RL	Units	QC Spike Original Sample Amount	Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Arsenic		ND	2.0	µg/L									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT
 Method Blank

Sample ID	MB-27525	Batch ID: 27525	Test Code: E200.9_Pb	Units: µg/L	Analysis Date	10/17/2017 5:08:20 PM	Prep Date	10/16/2017
Client ID:			Run ID: AANALYST 600_171017		SeqNo:	1007766		
Analyte		QC Sample Result	QC Spike Original Sample	Amount	Result	LowLimit	HighLimit	Original Sample or MS Result
Lead		ND	2.0	µg/L				

Sample ID	MB-27525	Batch ID: 27525	Test Code: E200.9_Sb	Units: µg/L	Analysis Date	10/18/2017 11:22:59 A	Prep Date	10/16/2017
Client ID:			Run ID: AANALYST 600_171018		SeqNo:	1007926		
Analyte		QC Sample Result	QC Spike Original Sample	Amount	Result	LowLimit	HighLimit	Original Sample or MS Result
Antimony		ND	5.0	µg/L				

Sample ID	MB-27525	Batch ID: 27525	Test Code: E200.9_Se	Units: µg/L	Analysis Date	10/19/2017 12:19:47 P	Prep Date	10/16/2017
Client ID:			Run ID: AANALYST 600_171019		SeqNo:	1007977		
Analyte		QC Sample Result	QC Spike Original Sample	Amount	Result	LowLimit	HighLimit	Original Sample or MS Result
Selenium		ND	5.0	µg/L				

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Method Blank

Sample ID MB-R60120 Batch ID: R60120 Test Code: SW7196A Units: mg/L Analysis Date 10/5/2017 10:15:00 AM Prep Date
 Client ID: Run ID: ING-WET_171005B SeqNo: 1008514
 Analyte QC Sample Result RL Units Amount QC Spike Original Sample Result %REC LowLimit HighLimit or MS Result %RPD RPDLimit Qu

Chromium, Hexavalent ND 0.010 mg/L
 Sample ID MB-R60120 Batch ID: R60120 Test Code: SW7196A Units: mg/L Analysis Date 10/5/2017 10:15:00 AM Prep Date
 Client ID: Run ID: ING-WET_171005B SeqNo: 1008514
 Analyte QC Sample Result RL Units Amount QC Spike Original Sample Result %REC LowLimit HighLimit or MS Result %RPD RPDLimit Qu

Chromium, Hexavalent ND 0.010 mg/L
 Sample ID MB-R60120 Batch ID: R60120 Test Code: SW7196A Units: mg/L Analysis Date 10/5/2017 10:15:00 AM Prep Date
 Client ID: Run ID: ING-WET_171005B SeqNo: 1008514
 Analyte QC Sample Result RL Units Amount QC Spike Original Sample Result %REC LowLimit HighLimit or MS Result %RPD RPDLimit Qu

Chromium, Hexavalent ND 0.010 mg/L
 Sample ID MB-R60120 Batch ID: R60120 Test Code: SW7196A Units: mg/L Analysis Date 10/5/2017 10:15:00 AM Prep Date
 Client ID: Run ID: ING-WET_171005B SeqNo: 1008514
 Analyte QC Sample Result RL Units Amount QC Spike Original Sample Result %REC LowLimit HighLimit or MS Result %RPD RPDLimit Qu

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
Work Order: 1710012
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT
 Method Blank

Sample ID	MB-R60113	Batch ID: R60113	Test Code: E1664	Units: mg/L	Analysis Date	10/24/2017	Prep Date
Client ID:		Run ID: ING-WET_171024D	SeqNo: 1008464				
Analyte		QC Sample Result	QC Spike Original Sample Amount	Result	LowLimit	HighLimit	Original Sample or MS Result
		QC Sample Result	QC Spike Original Sample Amount	Result	%REC	%RPD	RPDLimit

SGT-Hexane Extractable Material	ND	5.0	mg/L				
Sample ID	mb-27512	Batch ID: 27512	Test Code: E245.1	Units: µg/L	Analysis Date	10/6/2017 4:03:16 PM	Prep Date 10/6/2017
Client ID:		Run ID: HG-FIMS_171006A	SeqNo: 1006985				
Analyte		QC Sample Result	QC Spike Original Sample Amount	Result	LowLimit	HighLimit	Original Sample or MS Result
		QC Sample Result	QC Spike Original Sample Amount	Result	%REC	%RPD	RPDLimit

Mercury	ND	0.20	µg/L				
Sample ID	MB-R60034	Batch ID: R60034	Test Code: SM2540 D	Units: mg/L	Analysis Date	10/10/2017	Prep Date
Client ID:		Run ID: ING-WET_171016A	SeqNo: 1007002				
Analyte		QC Sample Result	QC Spike Original Sample Amount	Result	LowLimit	HighLimit	Original Sample or MS Result
		QC Sample Result	QC Spike Original Sample Amount	Result	%REC	%RPD	RPDLimit

Suspended Solids (Residue, Non	ND	4.0	mg/L				
Sample ID	MB-R60122	Batch ID: R60122	Test Code: M4500-Cl G	Units: mg/L	Analysis Date	10/5/2017 11:05:00 AM	Prep Date
Client ID:		Run ID: ING-WET_171005C	SeqNo: 1008568				
Analyte		QC Sample Result	QC Spike Original Sample Amount	Result	LowLimit	HighLimit	Original Sample or MS Result
		QC Sample Result	QC Spike Original Sample Amount	Result	%REC	%RPD	RPDLimit

Chlorine, Total Residual	ND	0.10	mg/L				
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Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT
 Method Blank

Sample ID	MB-R60123	Batch ID: R60123	Test Code: SM4500-CN	Units: mg/L	Analysis Date	10/18/2017	Prep Date
Client ID:		Run ID: ING-WET_171018A	SeqNo: 1008575				
Analyte		QC Sample Result	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	Original Sample or MS Result
Cyanide		ND	0.010 mg/L				

Sample ID	MB-R60102	Batch ID: R60102	Test Code: SM4500-NH3	Units: mg/L	Analysis Date	10/25/2017	Prep Date
Client ID:		Run ID: ING-WET_171025A	SeqNo: 1008407				
Analyte		QC Sample Result	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	Original Sample or MS Result
Nitrogen, Ammonia (As N)		ND	1.0 mg/L				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
Work Order: 1710012
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID	LCS-27525	Batch ID: 27525	Test Code: E200.7	Units: µg/L	Analysis Date	10/16/2017 4:40:58 PM	Prep Date	10/16/2017				
Client ID:		Run ID:	ICP-OPTIMA_171016A		SeqNo:	1007445						
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Cadmium	764.5	4.0	µg/L	800	0	95.6	85	115	0			
Chromium	4057	10	µg/L	3976	0	102	85	115	0			
Copper	1935	25	µg/L	2004	0	96.6	85	115	0			
Nickel	4003	40	µg/L	3984	0	100	85	115	0			
Silver	375.5	7.0	µg/L	400	0	93.9	85	115	0			
Zinc	3923	20	µg/L	3984	0	98.5	85	115	0			

Sample ID	LCS-27525	Batch ID: 27525	Test Code: E200.7	Units: µg/L	Analysis Date	10/18/2017 2:40:41 PM	Prep Date	10/16/2017				
Client ID:		Run ID:	ICP-OPTIMA_171018A		SeqNo:	1007796						
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Que

Sample ID	LCS-27525	Batch ID: 27525	Test Code: E200.9_As	Units: µg/L	Analysis Date	10/20/2017 11:01:45 A	Prep Date	10/16/2017				
Client ID:		Run ID:	AANALYST 600_171020		SeqNo:	1008025						
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Arsenic	20.37	2.0	µg/L	20	0	102	85	115	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
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AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

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 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID	LCS-27525	Batch ID: 27525	Test Code: E200.9_Pb		Units: µg/L	Analysis Date 10/17/2017 5:11:29 PM		Prep Date 10/16/2017				
Client ID:			Run ID:	AANALYST 600_171017		SeqNo:	1007767					
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	%RPD	RPDLimit	QC
Lead		21.05	2.0	µg/L	20	0	105	85	115		0	
Sample ID	LCS-27525	Batch ID: 27525	Test Code: E200.9_Sb		Units: µg/L	Analysis Date 10/18/2017 11:25:47 A		Prep Date 10/16/2017				
Client ID:			Run ID:	AANALYST 600_171018		SeqNo:	1007927					
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	%RPD	RPDLimit	QC
Antimony		20.5	5.0	µg/L	20	0	103	85	115		0	
Sample ID	LCS-27525	Batch ID: 27525	Test Code: E200.9_Se		Units: µg/L	Analysis Date 10/19/2017 12:22:47 P		Prep Date 10/16/2017				
Client ID:			Run ID:	AANALYST 600_171019		SeqNo:	1007978					
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	%RPD	RPDLimit	QC
Selenium		19.25	5.0	µg/L	20	0	96.2	85	115		0	

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S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

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Work Order: 1710012
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QC SUMMARY REPORT

Laboratory Control Spike

Sample ID	LCS-R60120	Batch ID	R60120	Test Code	SW7196A	Units	mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date	
Client ID:		Run ID:	ING-WET_171005B	SeqNo:	1008515						
Analyte		QC Sample Result		QC Spike Amount	Original Sample Result	%REC		LowLimit	HighLimit	%RPD	RPDLimit
Chromium, Hexavalent		0.103	0.010	mg/L	0.1	0	103	80	120	0	

Sample ID	LCS-R60120	Batch ID	R60120	Test Code	SW7196A	Units	mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date	
Client ID:		Run ID:	ING-WET_171005B	SeqNo:	1008515						
Analyte		QC Sample Result		QC Spike Amount	Original Sample Result	%REC		LowLimit	HighLimit	%RPD	RPDLimit
Chromium, Hexavalent		0.103	0.010	mg/L	0.1	0	103	80	120	0	

Sample ID	LCSD-R60120	Batch ID	R60120	Test Code	SW7196A	Units	mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date	
Client ID:		Run ID:	ING-WET_171005B	SeqNo:	1008527						
Analyte		QC Sample Result		QC Spike Amount	Original Sample Result	%REC		LowLimit	HighLimit	%RPD	RPDLimit
Chromium, Hexavalent		0.102	0.010	mg/L	0.1	0	102	80	120	0.103	0.976

Sample ID	LCSD-R60120	Batch ID	R60120	Test Code	SW7196A	Units	mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date	
Client ID:		Run ID:	ING-WET_171005B	SeqNo:	1008527						
Analyte		QC Sample Result		QC Spike Amount	Original Sample Result	%REC		LowLimit	HighLimit	%RPD	RPDLimit
Chromium, Hexavalent		0.102	0.010	mg/L	0.1	0	102	80	120	0.103	0.976

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

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Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
Work Order: 1710012
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID	LCS-R60113	Batch ID: R60113	Test Code: E1664	Units: mg/L	Analysis Date	10/24/2017	Prep Date	
Client ID:		Run ID: ING-WET_171024D	SeqNo: 1008465					
Analyte		QC Sample Result	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	%REC	%RPD

SGT-Hexane Extractable Material	18.6	5.0	mg/L	20	0	93	42.4	144	0
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Sample ID	Ics-27512	Batch ID: 27512	Test Code: E245.1	Units: µg/L	Analysis Date	10/6/2017 4:07:00 PM	Prep Date	10/6/2017
Client ID:		Run ID: HG-FIMS_171006A	SeqNo: 1006986					

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu:
Mercury	4.177	0.20	µg/L	4	0	104	80	120	0			

Sample ID	Icsd-27512	Batch ID: 27512	Test Code: E245.1	Units: µg/L	Analysis Date	10/6/2017 4:10:47 PM	Prep Date	10/6/2017
Client ID:		Run ID: HG-FIMS_171006A	SeqNo: 1006987					

Analyte	QC Sample		RL	Units	QC Spike		Original Sample		Original Sample			RPDLimit	Qua
	Result				Amount	Result	%REC	LowLimit	HighLimit	or MS Result	%RPD		
Mercury	4.174	0.20		µg/L	4	0	104	80	120	4.177	0.0568	20	

Sample ID	LCS-R60034	Batch ID: R60034	Test Code: SM2540 D	Units: mg/L	Analysis Date	10/10/2017	Prep Date	
Client ID:		Run ID: ING-WET_171016A	SeqNo: 1007003					

Analyte	QC Sample	QC Spike			Original Sample			Original Sample				
	Result	RL	Units	Amount	Result	%REC	LowLimit	HighLimit	or MS Result	%RPD	RPDLimit	Que
Suspended Solids (Residue, Non	965	4.0	mg/L	951	0	101	97	103	0			

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 R - RPD outside accepted recovery limits
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QC SUMMARY REPORT

Laboratory Control Spike

Sample ID	LCS-R60122	Batch ID: R60122	Test Code: M4500-Cl G	Units: mg/L	Analysis Date	10/5/2017 11:05:00 AM	Prep Date
Client ID:			Run ID: ING-WET_171005C		SeqNo:	1008569	
Analyte		QC Sample Result	RL	QC Spike Original Sample Amount	Result	%REC	LowLimit HighLimit
Chlorine, Total Residual		0.998	0.10	mg/L 1	0	99.8	90 110
							0
Sample ID	LCS-R60123	Batch ID: R60123	Test Code: SM4500-CN	Units: mg/L	Analysis Date	10/18/2017	Prep Date
Client ID:			Run ID: ING-WET_171018A		SeqNo:	1008576	
Analyte		QC Sample Result	RL	QC Spike Original Sample Amount	Result	%REC	LowLimit HighLimit
Cyanide		0.224	0.010	mg/L 0.2	0	112	84 121
							0
Sample ID	LCS-R60102	Batch ID: R60102	Test Code: SM4500-NH3	Units: mg/L	Analysis Date	10/25/2017	Prep Date
Client ID:			Run ID: ING-WET_171025A		SeqNo:	1008408	
Analyte		QC Sample Result	RL	QC Spike Original Sample Amount	Result	%REC	LowLimit HighLimit
Nitrogen, Ammonia (As N)		9.1	1.0	mg/L 10	0	91	88 95
							0

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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
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AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT
 Sample Duplicate

Sample ID	1710012-01HD	Batch ID: 27525	Test Code: E200.7	Units: µg/L	Analysis Date	10/16/2017 5:00:47 PM	Prep Date	10/16/2017				
Client ID:	1700396-WE-10		Run ID:	ICP-OPTIMA_171016A	SeqNo:	1007448						
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qualifier
Cadmium	ND	4.0	µg/L	0	0	0	0	0	0	0	20	
Chromium	ND	10	µg/L	0	0	0	0	0	0.5761	0	20	
Copper	5.55	25	µg/L	0	0	0	0	0	15.05	0	20	J
Nickel	3.318	40	µg/L	0	0	0	0	0	3.305	0	20	J
Silver	ND	7.0	µg/L	0	0	0	0	0	0	0	20	
Zinc	ND	20	µg/L	0	0	0	0	0	9.586	0	20	

Sample ID	1710012-01HD	Batch ID: 27525	Test Code: E200.7	Units: µg/L	Analysis Date	10/18/2017 3:00:31 PM	Prep Date	10/16/2017				
Client ID:	1700396-WE-10		Run ID:	ICP-OPTIMA_171018A	SeqNo:	1007799						
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qualifier
Iron	20570	100	µg/L	0	0	0	0	0	20820	1.17	20	

Sample ID	1710012-01HD	Batch ID: 27525	Test Code: E200.9_As	Units: µg/L	Analysis Date	10/20/2017 11:10:39 A	Prep Date	10/16/2017				
Client ID:	1700396-WE-10		Run ID:	AANALYST 600_171020	SeqNo:	1008028						
Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qual
Arsenic	0.629	2.0	µg/L	0	0	0	0	0	0.608	3.4	20	J

Qualifiers: ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
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AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEL Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Duplicate

Sample ID	1710012-01HD	Batch ID: 27525	Test Code: E200.9_Pb	Units: µg/L	Analysis Date	10/19/2017 11:20:59 A	Prep Date	10/16/2017
Client ID:	1700396-WE-10		Run ID:	AANALYST 600_171019	SeqNo:	1007968		
Analyte		QC Sample	QC Spike	Original Sample	LowLimit	HighLimit	Original Sample	
		Result	Amount	Result	%REC	%RPD	or MS Result	RPDLimit
Lead		1.373	0	0	0	0	1.392	20 J

Sample ID	1710012-01HD	Batch ID: 27525	Test Code: E200.9_Sb	Units: µg/L	Analysis Date	10/18/2017 11:34:17 A	Prep Date	10/16/2017
Client ID:	1700396-WE-10		Run ID:	AANALYST 600_171018	SeqNo:	1007930		
Analyte		QC Sample	QC Spike	Original Sample	LowLimit	HighLimit	Original Sample	
		Result	Amount	Result	%REC	%RPD	or MS Result	RPDLimit
Antimony		0.418	0	0	0	0	0	20 JR

Sample ID	1710012-01HD	Batch ID: 27525	Test Code: E200.9_Se	Units: µg/L	Analysis Date	10/19/2017 12:31:50 P	Prep Date	10/16/2017
Client ID:	1700396-WE-10		Run ID:	AANALYST 600_171019	SeqNo:	1007981		
Analyte		QC Sample	QC Spike	Original Sample	LowLimit	HighLimit	Original Sample	
		Result	Amount	Result	%REC	%RPD	or MS Result	RPDLimit
Selenium		ND	0	0	0	0	0	20

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CLIENT: GEI Consultants, Inc.
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QC SUMMARY REPORT
 Sample Duplicate

Sample ID	1710012-02ED	Batch ID: R60120	Test Code: SW7196A	Units: mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date
Client ID:	1700396-GEI-212		Run ID: ING-WET_171005B		SeqNo:	1008520	
Analyte		QC Sample	QC Spike	Original Sample	LowLimit	HighLimit	Original Sample
		Result	Amount	Result	%REC	%RPD	or MS Result
Chromium, Hexavalent	0.007	0.010	mg/L	0	0	0	0
							200
							20
							JR

Sample ID	1710012-02ED	Batch ID: R60120	Test Code: SW7196A	Units: mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date
Client ID:	1700396-GEI-212		Run ID: ING-WET_171005B		SeqNo:	1008520	
Analyte		QC Sample	QC Spike	Original Sample	LowLimit	HighLimit	Original Sample
		Result	Amount	Result	%REC	%RPD	or MS Result
Chromium, Hexavalent	0.007	0.010	mg/L	0	0	0	0
							200
							20
							JR

Sample ID	1710012-02ED	Batch ID: R60120	Test Code: SW7196A	Units: mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date
Client ID:	1700396-GEI-212		Run ID: ING-WET_171005B		SeqNo:	1008521	
Analyte		QC Sample	QC Spike	Original Sample	LowLimit	HighLimit	Original Sample
		Result	Amount	Result	%REC	%RPD	or MS Result
Chromium, Hexavalent	0.006	0.010	mg/L	0	0	0	0.005
							18.2
							20
							J

Sample ID	1710012-02ED	Batch ID: R60120	Test Code: SW7196A	Units: mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date
Client ID:	1700396-GEI-212		Run ID: ING-WET_171005B		SeqNo:	1008521	
Analyte		QC Sample	QC Spike	Original Sample	LowLimit	HighLimit	Original Sample
		Result	Amount	Result	%REC	%RPD	or MS Result
Chromium, Hexavalent	0.006	0.010	mg/L	0	0	0	0.005
							18.2
							20
							J

Qualifiers: ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
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 NA - Not applicable where J values or ND results occur

Date: 31-Oct-17

QC SUMMARY REPORT
Sample Duplicate

Sample ID	1710012-02ED	Batch ID: R60120	Test Code: SW7196A	Units: mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date						
Client ID:	1700396-GEI-212		Run ID:	ING-WET_171005B	SeqNo:	1008520							
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	or MS Result	%RPD	RPDLimit	Que
Chromium, Hexavalent		0.007	0.010	mg/L	0	0	0	0	0	0	200	20	JR

Sample ID	1710012-02ED	Batch ID:	R60120	Test Code:	SW7196A	Units:	mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date							
Client ID:	1700396-GEI-212	Run ID:	ING-WET_171005B	SeqNo:	1008520												
Analyte		QC Sample	Result	RL	Units	Amount	QC Spike	Original Sample	Result	or MS Result	HighLimit	LowLimit	%REC	Result	%RPD	RPDLimit	Que
Chromium, Hexavalent		0.007		0.010	mg/L	0	0	0	0	0	0	0	0	0	200	20	JR

Sample ID	1710012-02ED	Batch ID: R60120	Test Code: SW7196A	Units: mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date						
Client ID:	1700396-GEI-212		Run ID:	ING-WET_171005B	SeqNo:	1008521							
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Quat
Chromium, Hexavalent		0.006	0.010	mg/L	0	0	0	0	0	0.005	18.2	20	J

Sample ID	1710012-02ED	Batch ID: R60120	Test Code: SW7196A	Units: mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date						
Client ID:	1700396-GEI-212		Run ID: ING-WET_171005B		SeqNo: 1008521								
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Chromium, Hexavalent		0.006	0.010	mg/L	0	0	0	0	0	0.005	18.2	20	J

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	NA - Not applicable where J values or ND results occur
	RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.		

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
Work Order: 1710012
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 1710012-01DD **Batch ID:** R60122 **Test Code:** M4500-Cl G **Units:** mg/L **Analysis Date:** 10/15/2017 11:05:00 AM **Prep Date:**
Client ID: 1700396-WE-10 **Run ID:** ING-WET_171005C **SeqNo:** 1008573

Analyte	QC Sample Result	RL	QC Spike Amount	Units	mg/L	QC Spike Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Chlorine, Total Residual	ND	0.10	0	mg/L	0	0	0	0	0	0	0	20	H

Sample ID: 1710012-01GD **Batch ID:** R60123 **Test Code:** SM4500-CN **Units:** mg/L **Analysis Date:** 10/18/2017 **Prep Date:**
Client ID: 1700396-WE-10 **Run ID:** ING-WET_171018A **SeqNo:** 1008580

Analyte	QC Sample Result	RL	QC Spike Amount	Units	mg/L	QC Spike Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Cyanide	0.004	0.010	0	mg/L	0	0	0	0	0	0.004	0	20	J

Sample ID: 1710012-01ID **Batch ID:** R60102 **Test Code:** SM4500-NH3, **Units:** mg/L **Analysis Date:** 10/25/2017 **Prep Date:**
Client ID: 1700396-WE-10 **Run ID:** ING-WET_171025A **SeqNo:** 1008412

Analyte	QC Sample Result	RL	QC Spike Amount	Units	mg/L	QC Spike Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC
Nitrogen, Ammonia (As N)	2.52	1.0	0	mg/L	0	0	0	0	0	2.38	5.71	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

QC SUMMARY REPORT

Sample Matrix Spike

CLIENT: GEI Consultants, Inc.
Work Order: 1710012
Project: 1700396 MPA Berth 10 Final Design

Sample ID: 1710012-01HMS Batch ID: 27525 Test Code: E200.7 Units: µg/L Analysis Date: 10/16/2017 5:07:24 PM Prep Date: 10/16/2017
Client ID: 1700396-WE-10 Run ID: ICP-OPTIMA_171016A SeqNo: 1007449

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample Result
Cadmium	710.9	4.0	µg/L	800	0	88.9	70	130	0			
Chromium	3851	10	µg/L	3976	0.5761	96.9	70	130	0			
Copper	1988	25	µg/L	2004	15.05	98.4	70	130	0			
Nickel	3757	40	µg/L	3984	3.305	94.2	70	130	0			
Silver	361.7	7.0	µg/L	400	0	90.4	70	130	0			
Zinc	3650	20	µg/L	3984	9.586	91.4	70	130	0			

Sample ID: 1710012-01HMSD Batch ID: 27525 Test Code: E200.7 Units: µg/L Analysis Date: 10/16/2017 5:14:03 PM Prep Date: 10/16/2017
Client ID: 1700396-WE-10 Run ID: ICP-OPTIMA_171016A SeqNo: 1007450

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample Result
Cadmium	768.4	4.0	µg/L	800	0	96	70	130	710.9	7.77	20	
Chromium	4120	10	µg/L	3976	0.5761	104	70	130	3851	6.74	20	
Copper	2160	25	µg/L	2004	15.05	107	70	130	1988	8.31	20	
Nickel	4083	40	µg/L	3984	3.305	102	70	130	3757	8.32	20	
Silver	394.1	7.0	µg/L	400	0	98.5	70	130	361.7	8.58	20	
Zinc	3990	20	µg/L	3984	9.586	99.9	70	130	3650	8.88	20	

Sample ID: 1710012-01HMS Batch ID: 27525 Test Code: E200.7 Units: µg/L Analysis Date: 10/18/2017 3:07:10 PM Prep Date: 10/16/2017
Client ID: 1700396-WE-10 Run ID: ICP-OPTIMA_171018A SeqNo: 1007800

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	QC Sample Result
Iron	23520	100	µg/L	4004	20820	67.6	70	130	0			S

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID	1710012-01HMSD	Batch ID: 27525	Test Code: E200.7	Units: µg/L	Analysis Date	10/18/2017 3:13:51 PM	Prep Date	10/16/2017
Client ID:	1700396-WE-10		Run ID:	ICP-OPTIMA_171018A	SeqNo:	1007801		
Analyte		QC Sample Result	RL	Units	µg/L	QC Spike Amount	Original Sample Result	Original Sample or MS Result
Iron		24370	100	µg/L	4004	20820	88.7	70
							23520	3.52
							130	20

Sample ID	1710012-01HMSF	Batch ID: 27525	Test Code: E200.9_As	Units: µg/L	Analysis Date	10/20/2017 11:13:27 A	Prep Date	10/16/2017
Client ID:	1700396-WE-10		Run ID:	AANALYST 600_171020	SeqNo:	1008029		
Analyte		QC Sample Result	RL	Units	µg/L	QC Spike Amount	Original Sample Result	Original Sample or MS Result
Arsenic		22.08	2.0	µg/L	20	0.608	107	70
							130	0

Sample ID	1710012-01HMSD	Batch ID: 27525	Test Code: E200.9_Pb	Units: µg/L	Analysis Date	10/20/2017 11:18:14 A	Prep Date	10/16/2017
Client ID:	1700396-WE-10		Run ID:	AANALYST 600_171020	SeqNo:	1008030		
Analyte		QC Sample Result	RL	Units	µg/L	QC Spike Amount	Original Sample Result	Original Sample or MS Result
Arsenic		22.48	2.0	µg/L	20	0.608	109	70
							22.08	1.8
							130	0

Sample ID	1710012-01HMSF	Batch ID: 27525	Test Code: E200.9_Pb	Units: µg/L	Analysis Date	10/17/2017 5:24:24 PM	Prep Date	10/16/2017
Client ID:	1700396-WE-10		Run ID:	AANALYST 600_171017	SeqNo:	1007771		
Analyte		QC Sample Result	RL	Units	µg/L	QC Spike Amount	Original Sample Result	Original Sample or MS Result
Lead		18.45	2.0	µg/L	20	1.392	85.3	70
							130	0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
 Work Order: 1710012
 Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID	1710012-01HMSD	Batch ID: 27525	Test Code: E200.9_Pb	Units: µg/L	Analysis Date	10/17/2017 5:27:37 PM	Prep Date	10/16/2017					
Client ID:	1700396-WE-10		Run ID:	AANALYST 600_171017	SeqNo:	1007772							
Analyte	QC Sample	Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu:
Lead		18.5	2.0	µg/L	20	1.392	85.5	70	130	18.45	0.271	20	

Sample ID	1710012-01HMSF	Batch ID: 27525	Test Code: E200.9_Sb	Units: µg/L	Analysis Date	10/18/2017 11:37:04 A	Prep Date	10/16/2017					
Client ID:	1700396-WE-10		Run ID: AANALYST 600_171018		SeqNo: 1007931								
Analyte	QC Sample	Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu:
Antimony		22.84	5.0	µg/L	20	0	114	70	130	0			

Sample ID	1710012-01HMSD	Batch ID: 27525	Test Code: E200.9_Sb	Units: µg/L	Analysis Date	10/18/2017 11:39:52 A	Prep Date	10/16/2017					
Client ID:	1700396-WE-10		Run ID: AANALYST 600_171018		SeqNo: 1007932								
Analyte	QC Sample	Result	RL	Units	QC Spike Amount	Original Sample	%REC	LowLimit	HighLimit	Original Sample	%RPD	RPDLimit	Qu:
Antimony		22.83	5.0	µg/L	20	0	114	70	130	22.84	0.0438	20	

Sample ID	1710012-01HMSF	Batch ID: 27525	Test Code: E200.9_Se		Units: µg/L	Analysis Date 10/19/2017 12:34:48 P		Prep Date 10/16/2017					
Client ID:	1700396-WE-10		Run ID:	AANALYST 600_171019		SeqNo: 1007982							
Analyte	QC Sample	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu:
Selenium		21.16	5.0	µg/L	20	0	106	70	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 NA - Not applicable where J values or ND results occur

Date: 31-Oct-17

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID 1710012-01HMSD		Batch ID: 27525	Test Code: E200.9_Se		Units: µg/L	Analysis Date 10/19/2017 12:37:46 P		Prep Date 10/16/2017				
Client ID: 1700396-WE-10			Run ID: AANALYST 600_171019		SeqNo: 1007983							
Analyte	QC Sample	Result	RL	Units	QC Spike Amount	Original Sample	LowLimit	HighLimit				
					Result	or MS Result	%REC	%RPD				
Selenium		21.05	5.0	µg/L	20	0	105	70	130	21.16	0.521	20
Sample ID 1710012-02EMS		Batch ID: R60120	Test Code: SW7196A		Units: mg/L	Analysis Date 10/5/2017 10:15:00 AM		Prep Date				
Client ID: 1700396-GEI-212			Run ID: ING-WET_171005B		SeqNo: 1008522							
Analyte	QC Sample	Result	RL	Units	QC Spike Amount	Original Sample	LowLimit	HighLimit				
					Result	or MS Result	%REC	%RPD				
Chromium, Hexavalent		0.022	0.010	mg/L	0.1	0	22	75	125	0	0	S
Sample ID 1710012-02EMS		Batch ID: R60120	Test Code: SW7196A		Units: mg/L	Analysis Date 10/5/2017 10:15:00 AM		Prep Date				
Client ID: 1700396-GEI-212			Run ID: ING-WET_171005B		SeqNo: 1008522							
Analyte	QC Sample	Result	RL	Units	QC Spike Amount	Original Sample	LowLimit	HighLimit				
					Result	or MS Result	%REC	%RPD				
Chromium, Hexavalent		0.022	0.010	mg/L	0.1	0	22	75	125	0	0	S

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	NA - Not applicable where J values or ND results occur
	RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.		

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

QC SUMMARY REPORT

Sample Matrix Spike

CLIENT: GEI Consultants, Inc.
Work Order: 1710012
Project: 1700396 MPA Berth 10 Final Design

Sample ID	1710012-02EMS	Batch ID: R60120	Test Code: SW7196A	Units: mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date					
Client ID:	1700396-GEI-212		Run ID:	ING-WET_171005B	SeqNo:	1008523						
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	%REC	%RPD	RPDLimit	Qua
Chromium, Hexavalent		0.025	0.010	mg/L	0.1	0.005	0	75	20		125	S

Sample ID	1710012-02EMS	Batch ID: R60120	Test Code: SW7196A	Units: mg/L	Analysis Date	10/5/2017 10:15:00 AM	Prep Date					
Client ID:	1700396-GEI-212		Run ID:	ING-WET_171005B	SeqNo:	1008523						
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	%REC	%RPD	RPDLimit	Qua
Chromium, Hexavalent		0.025	0.010	mg/L	0.1	0.005	0	75	20		125	S

Sample ID	1710012-01DMS	Batch ID: R60122	Test Code: M4500-CI G	Units: mg/L	Analysis Date	10/5/2017 11:05:00 AM	Prep Date					
Client ID:	1700396-WE-10		Run ID:	ING-WET_171005C	SeqNo:	1008574						
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	%REC	%RPD	RPDLimit	Qua
Chlorine, Total Residual		0.879	0.10	mg/L	1	0	0	89	87.9		118	0
												SH

Sample ID	1710012-01GMS	Batch ID: R60123	Test Code: SM4500-CN	Units: mg/L	Analysis Date	10/18/2017	Prep Date					
Client ID:	1700396-WE-10	Run ID:	ING-WET_171018A	SeqNo:	1008581							
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	HighLimit	LowLimit	%REC	%RPD	RPDLimit	Qua
Cyanide		0.218	0.010	mg/L	0.2	0.004	107	68	119	0		

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits NA - Not applicable where J values or NID results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-17

CLIENT: GEI Consultants, Inc.
Work Order: 1710012
Project: 1700396 MPA Berth 10 Final Design

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	1710012-01IMS	Batch ID:	R60102	Test Code:	SM4500-NH3, Units: mg/L	Analysis Date	10/25/2017	Prep Date	
Client ID:	1700396-WE-10	Run ID:	ING-WET_171025A			SeqNo:	1008413		
Analyte		QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit
Nitrogen, Ammonia (As N)		12.18	1.0	mg/L	10	2.38	98	78	107
								%RPD	RPDLimit
									0

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

Thursday, October 19, 2017

Nancy Stewart

AMRO

111 Herrick Street

Merrimack NH 03054

Project Name: MPA Berth 10 Final Design

Lab ID: 17100085

Project #: 1700396

Date Received: 10/6/2017

Project Location: MA

Control #: 17100085


Dear Nancy Stewart

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on "as received" weight unless denoted "dry".

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe's certified parameter list can be found at <http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx>



Jay Chrystal - President/Laboratory Director



AMRO

Nancy Stewart

111 Herrick Street

Merrimack NH 03054

Control #: 17100085

Project Number: 1700396

Project Name: MPA Berth 10 Final Design

Project Location: MA

Lab ID: 17100085

Date: 10/19/2017

Lab ID: 17100085

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	N/A
Was there evidence of cooling or were samples received on the same day as collection?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Were samples submitted with a chain of custody?	Yes

Sample	Method	Client Identity	Matrix	Analyst
17100085-001	SW 9056	1700396-WE-10	Groundwater	BenN

Comment: no comment

* Blank comment sections denote "No Comment"



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Milford, NH 03055
(603) 673-5440
Sales@chemservelab.com

AMRO

Nancy Stewart
111 Herrick Street
Merrimack NH 03054

Control #: 17100085
Project Number: 1700396
Project Name: MPA Berth 10 Final Design
Project Location: MA

Analytical Results

Lab ID: 17100085
Date: 10/19/2017

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
17100085-001	1700396-WE-10	10/4/2017 11:30:00 AM	Groundwater
Composite Start Date and Time		10/4/2017 11:30:00 AM	Composite End Date and Time

Parameter	Method	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Chloride	SW 9056	242 mg/L		10/17/2017 8:11:00 PM	1	1



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Nancy Stewart
111 Herrick Street
Merrimack NH 03054

Control #: 17100085
Project Number: 1700396
Project Name: MPA Berth 10 Final Design
Project Location: MA

Analytical Results

Lab ID: 17100085
Date: 10/19/2017

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
17100085-002	1700396-GEI-12	10/4/2017 12:30:00 PM	Groundwater
Composite Start Date and Time		10/4/2017 12:30:00 PM	Composite End Date and Time

Parameter	Method	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Chloride	SW 9056	5950 mg/L		10/17/2017 8:11:00 PM	1	1



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Nancy Stewart
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Control #: 17100085
Project Number: 1700396
Project Name: MPA Berth 10 Final Design
Project Location: MA

Analytical Results

Lab ID: 17100085
Date: 10/19/2017

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
17100085-003	1700396-GEI-302 (MW)	10/4/2017 2:30:00 PM	Groundwater
Composite Start Date and Time 10/4/2017 2:30:00 PM		Composite End Date and Time	

Parameter	Method	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Chloride	SW 9056	10500 mg/L		10/17/2017 8:11:00 PM	1	1

Qualifier: Description:

B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">" the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.
Z	Too numerous to count (TNTC)

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

Q

Fax: (603) 470-8406

web: www.amrolabs.com

Page 6 of 6

Appendix D

Endangered Species Act Eligibility Documentation



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>



In Reply Refer To:
Consultation Code: 05E1NE00-2018-SLI-1442
Event Code: 05E1NE00-2018-E-03270
Project Name: Berth 10

March 30, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-1442

Event Code: 05E1NE00-2018-E-03270

Project Name: Berth 10

Project Type: DREDGE / EXCAVATION

Project Description: Berth redesign in South Boston, approx. 4 acres, excavation, dredging and ISS, approx. construction timeframe of 2018-2020.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.34153157815548N71.02735464143421W>



Counties: Suffolk, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Roseate Tern <i>Sterna dougallii dougallii</i> Population: northeast U.S. nesting pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Explore location

LOCAL OFFICE NEW ENGLAND ESFO ▾

LOCATION
Suffolk County,
Massachusetts
[CHANGE LOCATION](#)

Resources

ENDANGERED SPECIES 1

MIGRATORY BIRDS 29

FACILITIES !

WETLANDS ✓

PRINT RESOURCE LIST

What's next?

Define a project at this location to evaluate potential impacts, get an official species list, and make species determinations.

[DEFINE PROJECT](#)

Endangered species

Listed species ¹ are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service. Additional information on endangered species data is provided [below](#).

The following species are potentially affected by activities in this location:

THUMBNAILS LIST

Birds

NAME	STATUS
Roseate Tern <i>Sterna dougallii dougallii</i>	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

- > What does IPaC use to generate the list of endangered species potentially occurring in my specified location?
- > What is an 'official species list' and why would I need one?



<https://ecos.fws.gov/ipac/location/2YYK2NCRYZBQ5BV4DRYJZIGUXA/resources>

Appendix E

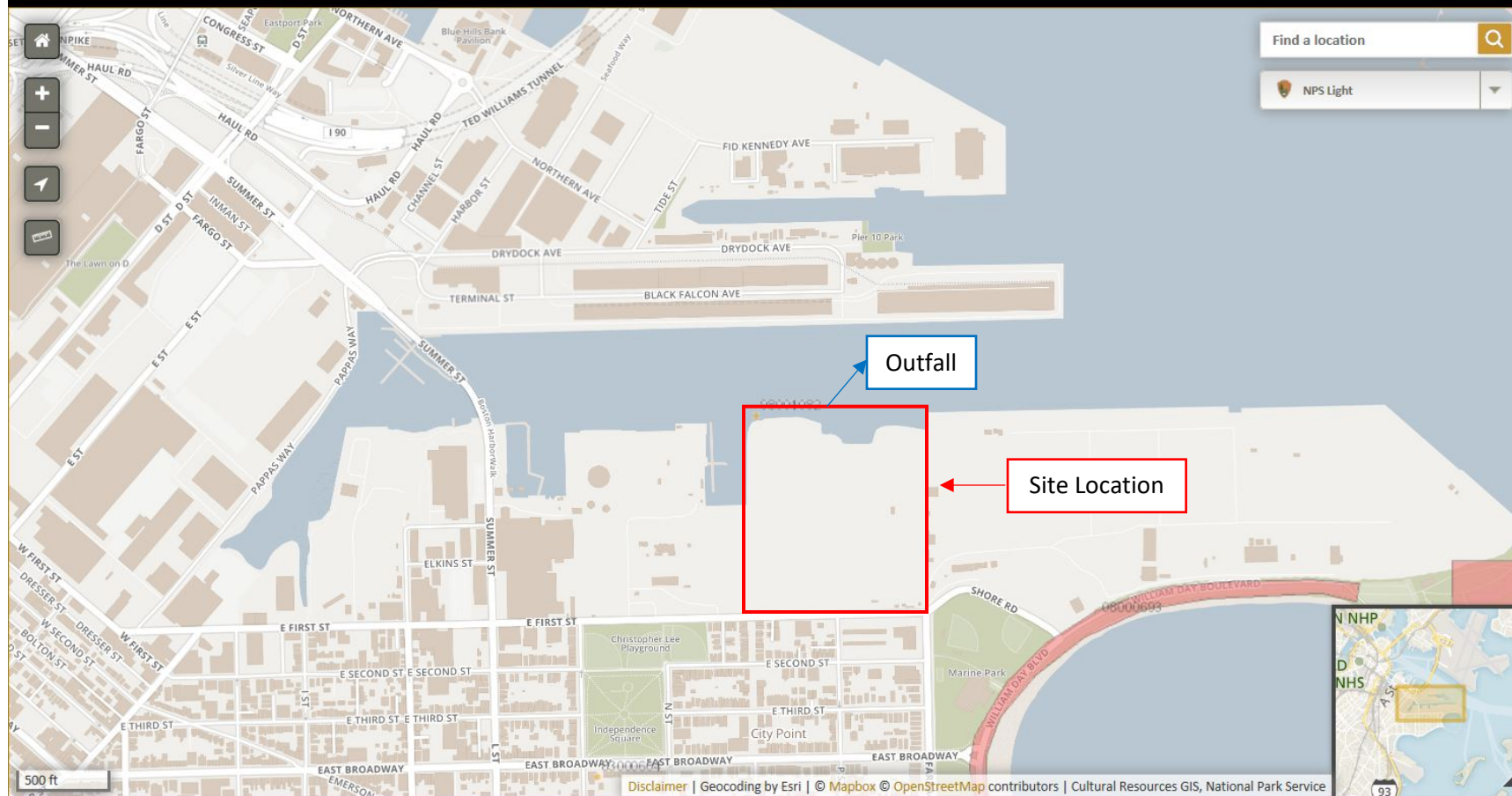
Historic Preservation Documentation

National Register of Historic Places

National Park Service
U.S. Department of the Interior



Public, non-restricted data depicting National Register spatial data processed by the Cultural Resources GIS facility. Data last updated in April, 2014.



Address or MHC#

Available Layers

Legend

MHC Inventory Points

- Nat'l Register of Historic Places
- ★ Preservation Restriction
- ▲ Local Historic District
- ▲ NRHP and LHD
- Inventoried Property

MHC Inventory Areas

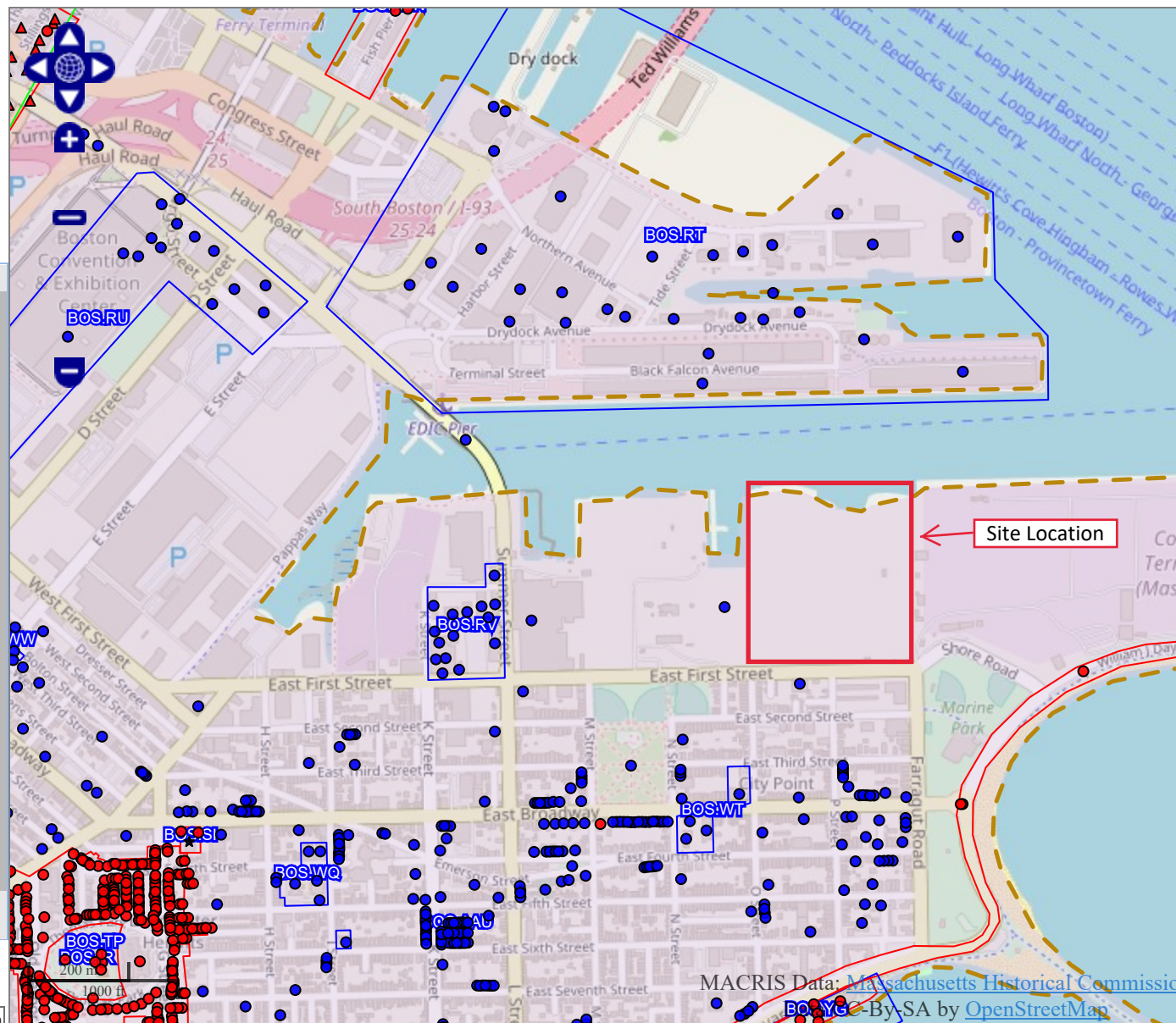
- Nat'l Register of Historic Places
- Preservation Restriction
- Local Historic District
- NRHP and LHD
- Inventoried Area

MHC Towns Completed

- Updates Pending
- Completed
- Not Completed

Archaeology Login

Username:
 Password:



Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: South Boston; Resource Type(s): Area, Building, Object, Burial Ground, Structure;

Inv. No.	Property Name	Street	Town	Year
BOS.CX	Fort Point Channel District		Boston	
BOS.IQ	Old Harbor Village		Boston	
BOS.IR	Dorchester Heights National Historic Site		Boston	
BOS.IU	Saint Augustine Chapel and Cemetery		Boston	
BOS.IV	South Boston Waterfront District		Boston	
BOS.RT	Boston Army Supply Base		Boston	
BOS.RU	C Street Industrial Area		Boston	
BOS.RV	King Terminal		Boston	
BOS.SI	Cathedral of Saint George Historic District		Boston	
BOS.TP	Dorchester Heights Historic District		Boston	
BOS.WQ	Gate of Heaven Roman Catholic Church Complex		Boston	
BOS.WR	Our Lady of Czestochowa Roman Catholic Church		Boston	
BOS.WS	Saint Augustine Roman Catholic Church Complex		Boston	
BOS.WT	Saint Brigid Roman Catholic Church Complex		Boston	
BOS.WU	Saint Peter (Lithuanian) Roman Catholic Church		Boston	
BOS.WV	Saints Peter and Paul Roman Catholic Church		Boston	
BOS.WW	Saint Vincent de Paul Roman Catholic Church		Boston	
BOS.WZ	Fort Point Channel Historic District		Boston	
BOS.YG	South Boston Boat Clubs Historic District		Boston	
BOS.ZD	Old Harbor Reservation Parkways		Boston	
BOS.ZG	Fort Point Channel Landmark District		Boston	
BOS.AAU	Beckler Avenue, 1-16		Boston	
BOS.ADN	Boston Fish Pier Historic District		Boston	
BOS.6815	Dahlquist Coppersmiths Manufacturing Company	87-97 A St	Boston	r 1895
BOS.6816	United States Post Office Garage	135 A St	Boston	1941

Monday, April 16, 2018

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Inv. No.	Property Name	Street	Town	Year
BOS.5498	Boston Wharf Company Warehouse	168-170 A St	Boston	1897
BOS.5499	Boston Wharf Company Warehouse	169 A St	Boston	1919
BOS.5500	Boston Wharf Company Warehouse	172-174 A St	Boston	1897
BOS.5501	Boston Wharf Company Warehouse	176-178 A St	Boston	1897
BOS.5502	Boston Wharf Company Warehouse	191-205 A St	Boston	1919
BOS.5503	Boston Wharf Company Building	207-209 A St	Boston	1916
BOS.5504	Boston Wharf Company Building	211-213 A St	Boston	1915
BOS.5505	Boston Wharf Company Warehouse	215-225 A St	Boston	1922
BOS.5506	Boston Wharf Company Warehouse	227-229 A St	Boston	1903
BOS.5507	Barlow, Frederick Building	239-241 A St	Boston	c 1895
BOS.5508	Factory Buildings Trust Industrial Building #5	249-255 A St	Boston	c 1895
BOS.5509	Keith, George E. Shoe Factory	288-304 A St	Boston	1912
BOS.5510	Boston Wharf Company Warehouse	289-293 A St	Boston	1893
BOS.5511	Boston Wharf Company Warehouse	319-321 A St	Boston	1913
BOS.15340	Dwinell - Wright Company Warehouse	319R A St	Boston	1923
BOS.15342	A Street Deli	324 A St	Boston	1945
BOS.15343	Boston Button Company Warehouse	326 A St	Boston	1889
BOS.12944	McDonald, Matt J. Company Special Steel Company	3 Anchor Way	Boston	c 1980
BOS.6817	Pike, Jacob - Abbott, Timothy Double House	92-94 B St	Boston	c 1834
BOS.6818	Boston Fire Department Hose Company #9	116 B St	Boston	1860
BOS.6819	Lawrence School	125 B St	Boston	1856
BOS.9652	Old Harbor Parkway - Babe Ruth Park Drive	Babe Ruth Park Dr	Boston	1924
BOS.6828	Beckler Avenue Rowhouse	1 Beckler Ave	Boston	c 1872
BOS.6820	Beckler Avenue Rowhouse	2 Beckler Ave	Boston	c 1872
BOS.6829	Beckler Avenue Rowhouse	3 Beckler Ave	Boston	c 1872
BOS.6821	Beckler Avenue Rowhouse	4 Beckler Ave	Boston	c 1872
BOS.6830	Beckler Avenue Rowhouse	5 Beckler Ave	Boston	c 1872
BOS.6822	Beckler Avenue Rowhouse	6 Beckler Ave	Boston	c 1872
BOS.6831	Beckler Avenue Rowhouse	7 Beckler Ave	Boston	c 1872
BOS.6823	Beckler Avenue Rowhouse	8 Beckler Ave	Boston	c 1872
BOS.6832	Beckler Avenue Rowhouse	9 Beckler Ave	Boston	c 1872
BOS.6824	Beckler Avenue Rowhouse	10 Beckler Ave	Boston	c 1872
BOS.6833	Beckler Avenue Rowhouse	11 Beckler Ave	Boston	c 1872
BOS.6825	Beckler Avenue Rowhouse	12 Beckler Ave	Boston	c 1872
BOS.6834	Beckler Avenue Rowhouse	13 Beckler Ave	Boston	c 1872
BOS.6826	Beckler Avenue Rowhouse	14 Beckler Ave	Boston	c 1872
BOS.6835	Beckler Avenue Rowhouse	15 Beckler Ave	Boston	c 1872

Inv. No.	Property Name	Street	Town	Year
BOS.6827	Beckler Avenue Rowhouse	16 Beckler Ave	Boston	c 1872
BOS.5512	Factory Buildings Trust Industrial Building #1	14-18 Binford St	Boston	1895
BOS.5513	Factory Buildings Trust Industrial Building #2	22-30 Binford St	Boston	1895
BOS.5514	Factory Buildings Trust Industrial Building #3	32-40 Binford St	Boston	1895
BOS.5515	Factory Buildings Trust Industrial Building #4	42-48 Binford St	Boston	1895
BOS.12945	Boston Army Supply Base - Wharf Shed	1 Black Falcon Dr	Boston	1918
BOS.15332	Saint Vincent de Paul Roman Catholic Rectory	201 Bolton St	Boston	r 1870
BOS.9243	Boston Street Bridge over MBTA	Boston St	Boston	1925
BOS.15322	Saint Mary's Roman Catholic Parochial School	46 Boston St	Boston	1911
BOS.6836	Broadway Streetcar - Broadway Bus Staton	Broadway Ave	Boston	1919
BOS.9247	Broadway Bridge over Fort Point Channel	Broadway Ave	Boston	1914
BOS.9249	Broadway Subway Station	Broadway Ave	Boston	1917
BOS.6837		450-454 Broadway Ave	Boston	r 1895
BOS.12973	Gahm, Joseph and Son Bottling Plant	340 C St	Boston	1908
BOS.12974	Brooklyn Cooperage Co. Kiln Building & Cooper Shop	352 C St	Boston	1904
BOS.12975	Brooklyn Cooperage Co. Storage & Shipping Building	360-366 C St	Boston	c 1904
BOS.12976	Standard Sanitary Manufacturing Company Building	365 C St	Boston	1924
BOS.12977		445 C St	Boston	1924
BOS.12978		475 C St	Boston	1919
BOS.12979	Brown and Wales Steel and Iron Company Warehouse	489-493 C St	Boston	c 1910
BOS.6838	Fort Independence	Castle Island	Boston	1809
BOS.5546	Boston Wharf Company Warehouse	1-5 Channel Center St	Boston	1916
BOS.5547	Boston Wharf Company Warehouse	1-5 Channel Center St	Boston	1914
BOS.5548	Abbott, W. Herbert, Inc. Building	1-5 Channel Center St	Boston	1913
BOS.5543	Boston Wharf Company Warehouse	15 Channel Center St	Boston	c 1914
BOS.5544	Boston Wharf Company Warehouse	15 Channel Center St	Boston	1911
BOS.5545	Boston Wharf Company Warehouse	15 Channel Center St	Boston	1912
BOS.5541	Boston Wharf Company Warehouse	35 Channel Center St	Boston	1902
BOS.12946	Boston Army Supply Base - Building 17	7 Channel St	Boston	c 1940
BOS.8062	Boston Army Supply Base Steam Locomotive Shop	11 Channel St	Boston	1918
BOS.12947	Boston Army Supply Base - Building 32	12 Channel St	Boston	c 1940
BOS.9648	Old Harbor Reservation Parkway - Columbia Road	Columbia Rd	Boston	1897
BOS.9649	Old Harbor Parkway - Columbia Road Median Strip	Columbia Rd	Boston	1897

Inv. No.	Property Name	Street	Town	Year
BOS.9650	Old Harbor Parkway - Laporte, Joseph E. Monument	Columbia Rd	Boston	1965
BOS.9653	Old Harbor Reservation Parkway - Preble Circle	Columbia Rd	Boston	c 1941
BOS.9656	Old Harbor Reservation Parkway - Columbia Circle	Columbia Rd	Boston	1924
BOS.9657	Old Harbor Parkway - Kosciuszko, Tadeusz Monument	Columbia Rd	Boston	1951
BOS.9651	Old Harbor Parkway - Columbus Park Headworks	1305 Columbia Rd	Boston	1967
BOS.6839	Johnson, Samuel W. Three Decker	1650 Columbia Rd	Boston	1913
BOS.6840	Johnson, Samuel W. Three Decker	1654 Columbia Rd	Boston	1913
BOS.6841	Johnson, Samuel W. Three Decker	1658 Columbia Rd	Boston	1913
BOS.6842	Johnson, Samuel W. Three Decker	1662 Columbia Rd	Boston	1913
BOS.6843	Johnson, Samuel W. Two-Family House	1736 Columbia Rd	Boston	1911
BOS.6844	Johnson, Samuel W. Three Decker	1788 Columbia Rd	Boston	1904
BOS.6845	Johnson, Samuel W. Three Decker	1790 Columbia Rd	Boston	1904
BOS.6846	Johnson, Samuel W. Three Decker	1792 Columbia Rd	Boston	1904
BOS.6855	Boston Yacht Club	1793-1805 Columbia Rd	Boston	1874
BOS.6847	Johnson, Samuel W. Three Decker	1794 Columbia Rd	Boston	1904
BOS.6852	Puritan Canoe Club	1819 Columbia Rd	Boston	1899
BOS.6853	Columbia Yacht Club	1825-1829 Columbia Rd	Boston	1899
BOS.6854	South Boston Yacht Club	1839-1849 Columbia Rd	Boston	1899
BOS.9002	Congress Street Bridge over Fort Point Channel	Congress St	Boston	1930
BOS.9510	The Beaver	Congress St	Boston	
BOS.15344	Congress Street Bridge Tenders House	Congress St	Boston	1930
BOS.15345		305 Congress St	Boston	1983
BOS.5516	New Haven Terminal Stores	308-316 Congress St	Boston	c 1890
BOS.15346	Hood, H. P. Milk Bottle	308 Congress St	Boston	1934
BOS.15347	Lombard's Congress Street Stores	313 Congress St	Boston	1886
BOS.5517	Boston Wharf Company Building	320-324 Congress St	Boston	1888
BOS.5518	Boston Wharf Company Warehouse	326-330 Congress St	Boston	1888
BOS.5519	Boston Wharf Company Warehouse	332-336 Congress St	Boston	1892
BOS.5520	American Railway Express Company Stable	343 Congress St	Boston	1888
BOS.5521	Congress Street Fire Station	344-346 Congress St	Boston	1891
BOS.5522	Chase and Company Candy Company Factory	347-351 Congress St	Boston	1887
BOS.5523	Boston Wharf Company Warehouse	348-352 Congress St	Boston	1894
BOS.5524	Boston Wharf Company Warehouse	354-358 Congress St	Boston	1900
BOS.5525	Tremont Electric Lighting Company	355-359 Congress St	Boston	c 1905
BOS.5526	Boston Wharf Company Building	364-372 Congress St	Boston	1901

Inv. No.	Property Name	Street	Town	Year
BOS.5527	Boston Wharf Company Wool Warehouse	369-375 Congress St	Boston	1918
BOS.5528	Boston Wharf Company Building	374-384 Congress St	Boston	c 1903
BOS.5529	Boston Wharf Company Building	381-389 Congress St	Boston	1907
BOS.9775	Schooner Roseway	Courthouse Pier	Boston	1925
BOS.12980	Burnett, Joseph Company Extract Building	437 D St	Boston	1921
BOS.12981		451 D St	Boston	1910
BOS.6849	Woods, S. A. Woodworking Machinery Company Stable	27-37 Damrell St	Boston	c 1886
BOS.6850	Woods, S. A. Woodworking Machinery Company	28 Damrell St	Boston	1886
BOS.9647	Old Harbor Reservation Parkway - Farragut Rotary	Day, William J. Blvd	Boston	1893
BOS.6856	Gogin, Thomas House	7 Dexter St	Boston	r 1860
BOS.6857	Roers, R. House	9 Dexter St	Boston	r 1860
BOS.6859	Clough, Joseph H. House	15 Dexter St	Boston	r 1860
BOS.6858	Clough, Joseph H. House	19 Dexter St	Boston	r 1860
BOS.6860	Ellis, Charles H. House	23 Dexter St	Boston	r 1860
BOS.6861	Wadleigh, Dexter - Sharp, William Double House	27-29 Dexter St	Boston	c 1852
BOS.13275	Stetson, Alpheus M. House	12 Dixfield St	Boston	c 1869
BOS.13276	Stetson, Alpheus M. House	14 Dixfield St	Boston	c 1869
BOS.13277		15 Dixfield St	Boston	r 1880
BOS.13278	Rich, Reuben House	16 Dixfield St	Boston	c 1869
BOS.6862	Kent, Barker B. House	17 Dixfield St	Boston	c 1849
BOS.13279	Stetson, Alpheus M. House	18 Dixfield St	Boston	c 1869
BOS.13280		19 Dixfield St	Boston	
BOS.13281		21 Dixfield St	Boston	
BOS.13282		24 Dixfield St	Boston	
BOS.13283		26 Dixfield St	Boston	
BOS.12948	Boston Army Supply Base - Building 31	3 Dolphin Way	Boston	c 1940
BOS.6864	Andrew Street Car Transfer Station	Dorchester Ave	Boston	1918
BOS.9242	Dorchester Avenue Bridge over MBTA	Dorchester Ave	Boston	1925
BOS.9244	NY, NH and H Railroad Bridge #1.08	Dorchester Ave	Boston	
BOS.9248	Andrew Subway Station	Dorchester Ave	Boston	1918
BOS.9513	Dorchester Avenue Sea Wall	Dorchester Ave	Boston	
BOS.6863	MacAllen Electric Railway Material Co. Building	135-137 Dorchester Ave	Boston	r 1905
BOS.6865	Norway Iron Works Machine Shop	383 Dorchester Ave	Boston	c 1845
BOS.15319	Our Lady of Czestochowa Roman Catholic Church	655 Dorchester Ave	Boston	1894
BOS.15320	Our Lady of Czestochowa Roman Catholic Rectory	655 Dorchester Ave	Boston	1900

Inv. No.	Property Name	Street	Town	Year
BOS.15321	Our Lady of Czestochowa Roman Catholic Convent	666 Dorchester Ave	Boston	c 1900
BOS.9240	N.Y., N.H. and H. Railroad Bridge (Milepost #1.19)	Dorchester Brook	Boston	1961
BOS.6872	South Boston Gas Light Company	3-5 Dorchester St	Boston	c 1852
BOS.6873	Boston Engine House #1 & Municipal District Court	119-121 Dorchester St	Boston	1868
BOS.13284	White, Amos T. Three Decker	124 Dorchester St	Boston	1891
BOS.13285	Marion Manor	130 Dorchester St	Boston	1965
BOS.6866	Briggs, James Edwin House	142 Dorchester St	Boston	r 1856
BOS.6867	Sears, Jabez H. - Woods, Solomon A. House	146 Dorchester St	Boston	1859
BOS.13286	Morse, Albert House	149 Dorchester St	Boston	r 1860
BOS.13287	Whitcher, Martin C. House	151 Dorchester St	Boston	r 1860
BOS.13288		153 Dorchester St	Boston	r 1860
BOS.13289	Hall, Daniel Double House	154 Dorchester St	Boston	c 1852
BOS.13290	Silsby, Thomas J. House	155 Dorchester St	Boston	c 1852
BOS.13291	Adams, Orison Double House	156 Dorchester St	Boston	c 1852
BOS.13292	Orcutt, William K. House	158 Dorchester St	Boston	r 1860
BOS.13293	Pearson, E. House	159 Dorchester St	Boston	r 1860
BOS.13294	Giles, S. House	160 Dorchester St	Boston	r 1860
BOS.13295		161 Dorchester St	Boston	r 1860
BOS.6868	Lincoln, Charles House	162 Dorchester St	Boston	1858
BOS.13296	Bail, William V. House	164 Dorchester St	Boston	r 1860
BOS.6875	Rose, George Double House	165-169 Dorchester St	Boston	r 1855
BOS.13297	Collins, Jeremiah House	170 Dorchester St	Boston	r 1860
BOS.13298	Thayer, Samuel J. F. House	172 Dorchester St	Boston	c 1865
BOS.811	Saint Augustine Cemetery	181 Dorchester St	Boston	1819
BOS.7180	Saint Augustine Roman Catholic Chapel	181 Dorchester St	Boston	1819
BOS.6869	Mason, William H. House	200 Dorchester St	Boston	r 1855
BOS.6876	Saint Augustine Roman Catholic Church and Rectory	225 Dorchester St	Boston	c 1870
BOS.6870	Boston Fire House Horse Hose Company #10	330 Dorchester St	Boston	1861
BOS.6871	Dorchester Street Methodist Episcopal Church	340 Dorchester St	Boston	c 1889
BOS.6877	Richmond, Augustus C. House	351 Dorchester St	Boston	c 1873
BOS.6878	Hussey, Robert House	381 Dorchester St	Boston	c 1866
BOS.6879	Unity Unitarian Chapel - Washington Village Chapel	385 Dorchester St	Boston	c 1860
BOS.6880		397-403 Dorchester St	Boston	c 1910
BOS.9427	Boston Army Supply Base - Dry Dock #3	Dry Dock Ave	Boston	c 1914

Inv. No.	Property Name	Street	Town	Year
BOS.12949	Boston Army Supply Base - Building 114	Dry Dock Ave	Boston	1918
BOS.12952	Boston Army Supply Base - Parking Garage	Dry Dock Ave	Boston	c 1980
BOS.12957	Boston Army Supply Base - Building 22	Dry Dock Ave	Boston	c 1918
BOS.12958	Boston Army Supply Base - Building 23	Dry Dock Ave	Boston	c 1918
BOS.12961	Boston Army Supply Base - Building 40	Dry Dock Ave	Boston	c 1918
BOS.12962	Boston Army Supply Base - Buildings 117 and 113	Dry Dock Ave	Boston	1918
BOS.12950	Boston Army Supply Base - Building 15	10 Dry Dock Ave	Boston	c 1940
BOS.12951	British Airways World Cargo Building	15 Dry Dock Ave	Boston	c 1980
BOS.12953	Boston Army Supply Base - Building 20	20 Dry Dock Ave	Boston	c 1940
BOS.12954	Boston Army Supply Base - Public Works Building	22 Dry Dock Ave	Boston	c 1940
BOS.12955	Boston Army Supply Base - Building 21	24-26 Dry Dock Ave	Boston	c 1940
BOS.12959	Boston Army Supply Base - Building 1	32 Dry Dock Ave	Boston	c 1918
BOS.12960	Coastal Cement Corporation	39 Dry Dock Ave	Boston	c 1980
BOS.6881	Saint Augustine Roman Catholic Parochial School	201 E St	Boston	1893
BOS.15324	Saint Augustine Roman Catholic Church Convent	207 E St	Boston	1926
BOS.7119	Glynn, Martin T. and William Apartment Building	313 E St	Boston	1897
BOS.7115	Greene, Gardiner Row House	318 E St	Boston	c 1824
BOS.7116	Greene, Gardiner Row House	320 E St	Boston	c 1824
BOS.6882	Fletcher, Henry W. Double House	336-338 E St	Boston	c 1852
BOS.6883	Harris, James W. Double House	368-370 E St	Boston	c 1852
BOS.9257	Farragut, Adm. David Glasgow Statue	East Broadway	Boston	1893
BOS.9259	Independence Square	East Broadway	Boston	1855
BOS.6952	James, Francis Row House	495 East Broadway	Boston	1860
BOS.6918	Monks, John P. - Howes, Osborn Double House	512-514 East Broadway	Boston	1845
BOS.6919	Kenney, John - Hersey, Francis C. Double House	516 East Broadway	Boston	1874
BOS.14295	James, George B. House	517 East Broadway	Boston	c 1868
BOS.6921	Bill, Abner D. House	520 East Broadway	Boston	c 1868
BOS.6884	Cathedral of Saint George	523 East Broadway	Boston	1872
BOS.14296	Jenney, Bernard House	525 East Broadway	Boston	1868
BOS.6922	Stover, Theophilus - Jenkins, Joshua House	534 East Broadway	Boston	c 1856
BOS.6885	South Boston Municipal Building	535 East Broadway	Boston	1913
BOS.6923	Souther, Henry - Gavin, Dr. Michael Freeborn House	546 East Broadway	Boston	1868
BOS.6924	Meins, Walter R. Row House	548 East Broadway	Boston	1871
BOS.6925	Vance, Samuel Row House	550 East Broadway	Boston	1871
BOS.6926		552 East Broadway	Boston	1871

Inv. No.	Property Name	Street	Town	Year
BOS.6927		554 East Broadway	Boston	1871
BOS.6928		556 East Broadway	Boston	1871
BOS.6929	Warner, William D. Row House	558 East Broadway	Boston	1871
BOS.6930		560 East Broadway	Boston	1871
BOS.6931	Warner, William D. Row House	562 East Broadway	Boston	1871
BOS.6886	Driscoll, Mitchell J. House	585 East Broadway	Boston	1892
BOS.6887		705 East Broadway	Boston	1859
BOS.6888		707 East Broadway	Boston	1859
BOS.6889		709 East Broadway	Boston	1859
BOS.6890		711 East Broadway	Boston	1859
BOS.6932	Pilgrim Hall	732-734 East Broadway	Boston	1890
BOS.6933	Handy, Lottie G. Row House	766 East Broadway	Boston	1874
BOS.6891	Warner, William H. House	767 East Broadway	Boston	c 1858
BOS.6934	Cobb Lime Company Row House	768 East Broadway	Boston	1874
BOS.6935	Cobb Lime Company Row House	770 East Broadway	Boston	1874
BOS.6892	Scott, John M. - Bixby, Sampson L. Double House	771-773 East Broadway	Boston	c 1867
BOS.6936	Cobb Lime Company Row House	772 East Broadway	Boston	1874
BOS.6937	Cobb Lime Company Row House	774 East Broadway	Boston	1874
BOS.6893	Scott, John M. Double House	775-777 East Broadway	Boston	1868
BOS.6938	Whitney, William A. House	776 East Broadway	Boston	1875
BOS.6939	Whitney, William A. House	778 East Broadway	Boston	1873
BOS.6894	Scott, John M. Double House	779-781 East Broadway	Boston	1868
BOS.6940	Hawes, Walter E. House	780 East Broadway	Boston	1870
BOS.6941	Gray, Solomon S. - Dana, Otis D. Stable	786 East Broadway	Boston	r 1870
BOS.6895	Scott, John M. House	787 East Broadway	Boston	c 1862
BOS.6942	Gray, Solomon S. - Dana, Otis D. House	788 East Broadway	Boston	c 1866
BOS.6896	Loring, Harrison House	789 East Broadway	Boston	1865
BOS.6897	Clark, William H. Row House	797 East Broadway	Boston	1868
BOS.6898	Moore, Alexander Row House	799 East Broadway	Boston	1868
BOS.6899	Souther, Joaquim Row House	801 East Broadway	Boston	1868
BOS.6900	Souther, John T. Row House	803 East Broadway	Boston	1868
BOS.6901	Brown, Albert Row House	805 East Broadway	Boston	1868
BOS.6902	Brown, Albert Row House	807 East Broadway	Boston	1868
BOS.6903	Hall, Leonard Row House	809 East Broadway	Boston	1868
BOS.6904	Canfield, Rev. C. T. Row House	811 East Broadway	Boston	1868
BOS.6905	Murray, Mary E. T. Row House	813 East Broadway	Boston	c 1870
BOS.6906	Tay, Rodney S. Row House	815 East Broadway	Boston	c 1870

Inv. No.	Property Name	Street	Town	Year
BOS.6907	Gibbs, Horace G. Row House	817 East Broadway	Boston	c 1870
BOS.6908	Baker, Mary Row House	819 East Broadway	Boston	c 1870
BOS.6909	Baker, Charles H. Row House	821 East Broadway	Boston	c 1870
BOS.6910	Bemis, Emily Row House	823 East Broadway	Boston	c 1870
BOS.6911	Hall, Francis D. Row House	825 East Broadway	Boston	c 1870
BOS.6912	Scott, John M. Row House	827 East Broadway	Boston	c 1870
BOS.6943	Whiton, Lewis C. House	838 East Broadway	Boston	c 1869
BOS.15326	Saint Brigid Roman Catholic Church Rectory	845 East Broadway	Boston	c 1917
BOS.15327	Saint Brigid Roman Catholic Church School	866 East Broadway	Boston	1964
BOS.6944		898-904 East Broadway	Boston	1886
BOS.6914	Gleeson, James A. Double House	901-903 East Broadway	Boston	c 1865
BOS.6915	Clark, Henry S. Three Decker	925 East Broadway	Boston	1907
BOS.6916	Blake, Samuel House	927-931R East Broadway	Boston	1835
BOS.6945	Collins, James Mansion	928 East Broadway	Boston	1867
BOS.6946	Collins, James Row House	934 East Broadway	Boston	1884
BOS.6947	Collins, James Row House	936 East Broadway	Boston	1884
BOS.6948	Collins, James Row House	938 East Broadway	Boston	1884
BOS.6949	Collins, James Row House	940 East Broadway	Boston	1884
BOS.6950	Collins, James Row House	942 East Broadway	Boston	1884
BOS.6917	Taylor, William H. House	945 East Broadway	Boston	1939
BOS.6951	Falvey, J. H. House	948 East Broadway	Boston	r 1900
BOS.13299		344 East Eighth St	Boston	c 1884
BOS.13300	Graf, Emily House	348 East Eighth St	Boston	r 1885
BOS.13301	Stapleton, B. J. and E. House	350 East Eighth St	Boston	r 1885
BOS.13302	Towle, A. J. and William House	352 East Eighth St	Boston	r 1885
BOS.13303	Devine - Wenzler House	354 East Eighth St	Boston	r 1885
BOS.13304	McCarthy - Clark House	356 East Eighth St	Boston	r 1885
BOS.13305	Grafter, William House	358 East Eighth St	Boston	r 1885
BOS.13306	Barth, Sophie A. House	360 East Eighth St	Boston	r 1885
BOS.13307		362 East Eighth St	Boston	r 1980
BOS.13308		364 East Eighth St	Boston	r 1980
BOS.13309		366 East Eighth St	Boston	r 1885
BOS.6966	Arion Hall - German-American Singing Society	367 East Eighth St	Boston	1892
BOS.13310		368 East Eighth St	Boston	r 1885
BOS.13311		370 East Eighth St	Boston	r 1885
BOS.13312		372 East Eighth St	Boston	r 1885
BOS.13313		374 East Eighth St	Boston	r 1885
BOS.13314		412 East Eighth St	Boston	r 1890

Inv. No.	Property Name	Street	Town	Year
BOS.13315		413 East Eighth St	Boston	r 1890
BOS.13316		414 East Eighth St	Boston	r 1890
BOS.13317		415 East Eighth St	Boston	r 1890
BOS.13318		417 East Eighth St	Boston	r 1865
BOS.13319		419 East Eighth St	Boston	r 1865
BOS.13320		421 East Eighth St	Boston	r 1865
BOS.13321		428 East Eighth St	Boston	r 1880
BOS.6963	Ellis, Albert House	582 1/2 East Eighth St	Boston	c 1845
BOS.6967	Spinney, Samuel R. House	601 East Eighth St	Boston	1853
BOS.7087	Sharp, John H. House	673 East Eighth St	Boston	1858
BOS.7088	Sharp, John H. House	675 East Eighth St	Boston	1858
BOS.7089	Sharp, John H. House	679 East Eighth St	Boston	1858
BOS.6964	Johnson, Samuel W. Three Decker	690 East Eighth St	Boston	1909
BOS.6965	Perry, Oliver Hazard Grammar School	770 East Eighth St	Boston	1904
BOS.13322		390 East Fifth St	Boston	r 1865
BOS.13323	Thompson, A. D. House	391 East Fifth St	Boston	r 1865
BOS.13324		392 East Fifth St	Boston	r 1865
BOS.13325	Manson, George H. House	393 East Fifth St	Boston	r 1865
BOS.13326		395 East Fifth St	Boston	r 1865
BOS.13327		397 East Fifth St	Boston	r 1865
BOS.6793	Perkins Institute for the Blind Rental Housing	422-424 East Fifth St	Boston	1893
BOS.6794	Emerson, Jacob House	562 East Fifth St	Boston	1847
BOS.6795	Hawes, John House	568 East Fifth St	Boston	c 1805
BOS.6796	Hathaway, Hiram F. House	611 East Fifth St	Boston	c 1852
BOS.6797	Masury, Joseph Double House	620-622 East Fifth St	Boston	1848
BOS.6798	Wheaton, Timothy Building	779 East Fifth St	Boston	1886
BOS.6800	Collins, James Apartment Block	828-834 East Fifth St	Boston	c 1880
BOS.6801	Harriss, John A. House	847 East Fifth St	Boston	c 1852
BOS.6802	Griffith, Mary A. - Butler, N. House	848 East Fifth St	Boston	c 1870
BOS.6803	Gleason, Michael House	855 East Fifth St	Boston	c 1856
BOS.12994		East First St	Boston	r 1950
BOS.12991		564 East First St	Boston	1919
BOS.12992	Grueby Faience Company Work Shop	566 East First St	Boston	c 1899
BOS.12993		570 East First St	Boston	r 1920
BOS.6752	Condit Electrical Company Building	603-609 East First St	Boston	1915
BOS.6753	Boston Elevated Railway South Boston Power Station	696 East First St	Boston	1911
BOS.6754	Walworth Radiator Manufacturing Company	881 East First St	Boston	1904

Inv. No.	Property Name	Street	Town	Year
	Warehouse			
BOS.9258	Lincoln Park	East Fourth St	Boston	c 1860
BOS.13328	Bird - Lord House	469 East Fourth St	Boston	c 1852
BOS.13329		470 East Fourth St	Boston	r 1865
BOS.13330	Bird - Barstow House	471 East Fourth St	Boston	c 1852
BOS.13331		472 East Fourth St	Boston	r 1865
BOS.13332		474 East Fourth St	Boston	r 1865
BOS.13333		476 East Fourth St	Boston	r 1890
BOS.13334		478 East Fourth St	Boston	r 1890
BOS.6763	Bird, John Hawes House	480-482 East Fourth St	Boston	1830
BOS.6764	Mount Washington Female Institute	484 East Fourth St	Boston	c 1874
BOS.13335	Burton, H. J. and R. A. House	491 East Fourth St	Boston	r 1865
BOS.13336		493 East Fourth St	Boston	r 1865
BOS.13337		494 East Fourth St	Boston	r 1980
BOS.13338		495 East Fourth St	Boston	r 1865
BOS.13339		496 East Fourth St	Boston	r 1980
BOS.13340		497 East Fourth St	Boston	r 1865
BOS.13341	Gerrish, Thomas P. Double House	498 East Fourth St	Boston	c 1852
BOS.13342	Pierce, William P. Double House	500 East Fourth St	Boston	c 1852
BOS.13343	Bowen, H. B. House	502 East Fourth St	Boston	c 1852
BOS.13344	Spaulding, Ira D. Double House	504 East Fourth St	Boston	r 1855
BOS.13345	Kingman, George W. Double House	506 East Fourth St	Boston	r 1865
BOS.13346	Luttet, William House	508 East Fourth St	Boston	c 1852
BOS.13347	Cole - Lewis House	510 East Fourth St	Boston	c 1852
BOS.13348	Wright, Albert J. Jr. House	512 East Fourth St	Boston	c 1852
BOS.13349	Leonard, Isaac M. House	514 East Fourth St	Boston	c 1852
BOS.13350	Clapp, Howard House	523 East Fourth St	Boston	r 1865
BOS.13351	Greely, Phillip House	525 East Fourth St	Boston	r 1865
BOS.13352	Clapp, Howard House	527 East Fourth St	Boston	r 1865
BOS.13353		528 East Fourth St	Boston	c 1852
BOS.13354		529 East Fourth St	Boston	r 1865
BOS.13355		530 East Fourth St	Boston	c 1852
BOS.13356		531 East Fourth St	Boston	r 1865
BOS.15317	Gate of Heaven Roman Catholic Church Rectory	606 East Fourth St	Boston	1958
BOS.15318	Gate of Heaven Roman Catholic Church School	609 East Fourth St	Boston	1922
BOS.6766	Gate of Heaven Roman Catholic Church	615 East Fourth St	Boston	c 1896
BOS.6765	Gate of Heaven Roman Catholic Church	616 East Fourth St	Boston	1862
BOS.6775	Boston Police Station #12 and Jail	675 East Fourth St	Boston	1874

Inv. No.	Property Name	Street	Town	Year
BOS.6776	Boston Fire Station Engine #2 - Ladder #19	680 East Fourth St	Boston	1932
BOS.9230	Boston Fire Station #2 Hose Drying Tower	680 East Fourth St	Boston	1932
BOS.6767	Sawyer, Oliver T. House	742 East Fourth St	Boston	1860
BOS.6768	Scanlon, Mary A. Row House	746 East Fourth St	Boston	c 1871
BOS.6769	Pollard, Rev. Andrew Row House	748 East Fourth St	Boston	c 1871
BOS.6770	Miller, Ellen S. Row House	750 East Fourth St	Boston	c 1871
BOS.6771	Becker, J. M. Row House	752 East Fourth St	Boston	c 1871
BOS.6772	Round, Julius S. Row House	754 East Fourth St	Boston	c 1871
BOS.6773	Ring, James - Underwood, Frank H. Double House	756-758 East Fourth St	Boston	c 1865
BOS.6774	Harding, William H. - Bowles, Hiram Double House	760-762 East Fourth St	Boston	c 1865
BOS.6777	Webb Row House	789 East Fourth St	Boston	c 1871
BOS.6778	Flanders - Crawford Row House	791 East Fourth St	Boston	c 1871
BOS.6779	Wilson, Joseph F. Row House	793 East Fourth St	Boston	c 1871
BOS.6780	Jessop, H. H. Row House	795 East Fourth St	Boston	c 1871
BOS.6781	Bird, Lewis J. Row House	797 East Fourth St	Boston	c 1871
BOS.6782	Marous, A. A. Row House	799 East Fourth St	Boston	c 1871
BOS.6783	McCouson, Ansel Three Decker	908 East Fourth St	Boston	1905
BOS.6784	Boyle, Patrick House	913 East Fourth St	Boston	1856
BOS.6785	Simpson, Daniel House	918-920 East Fourth St	Boston	1856
BOS.6791	Simpson, Daniel House	924 East Fourth St	Boston	c 1848
BOS.6787	Johnson, Samuel W. Three Decker	925 East Fourth St	Boston	1909
BOS.6788	Johnson, Samuel W. Three Decker	927 East Fourth St	Boston	1909
BOS.6789	Carmody, Elizabeth G. Three Decker	929 East Fourth St	Boston	1909
BOS.6790	Johnson, Samuel W. Three Decker	931 East Fourth St	Boston	1909
BOS.6792	Connolly, Mary C. Three Decker	936 East Fourth St	Boston	1892
BOS.6756	Bay State Iron Company Worker Housing	591 East Second St	Boston	c 1852
BOS.6757	Bay State Iron Company Worker Housing	593 East Second St	Boston	c 1852
BOS.6758	Bay State Iron Company Worker Housing	595 East Second St	Boston	c 1852
BOS.6759	Bay State Iron Company Worker Housing	597 East Second St	Boston	c 1852
BOS.6755	Leeds, Samuel House	687 East Second St	Boston	1834
BOS.13357		399 East Seventh St	Boston	1897
BOS.13358		401 East Seventh St	Boston	1897
BOS.13360		403 East Seventh St	Boston	1897
BOS.13359		404 East Seventh St	Boston	r 1865
BOS.13362		405 East Seventh St	Boston	1897
BOS.13361		406 East Seventh St	Boston	r 1865

Inv. No.	Property Name	Street	Town	Year
BOS.6953	Howard, Thomas and Henry Three Decker	447 East Seventh St	Boston	1903
BOS.6954	Meyer, Conrad Double Three Decker	448-450 East Seventh St	Boston	1892
BOS.6955	Lappen, James House	492 East Seventh St	Boston	c 1852
BOS.6956	Hatch, Converse R. Row House	602 East Seventh St	Boston	1869
BOS.6957	Ham, Alonzo G. Row House	604 East Seventh St	Boston	1869
BOS.6958	Whitridge, Thomas Row House	606 East Seventh St	Boston	1869
BOS.6959	Lewis, Albert G. Row House	608 East Seventh St	Boston	1869
BOS.6960	Kimball, Frank H. Row House	610 East Seventh St	Boston	1869
BOS.6961	Small, Maria A. Row House	612 East Seventh St	Boston	1869
BOS.6962	Spofford, Charles Row House	614 East Seventh St	Boston	1869
BOS.6804	Capen Primary School	518 East Sixth St	Boston	1871
BOS.6805	Higgins, William R. Row House	586 East Sixth St	Boston	c 1872
BOS.6806	Wright, Fred S. Row House	588 East Sixth St	Boston	c 1872
BOS.6807	Woodward, Elliot W. Row House	590 East Sixth St	Boston	c 1872
BOS.6808	Shaw, Jeremiah Row House	592 East Sixth St	Boston	c 1872
BOS.6809	Tufts, C. Row House	594 East Sixth St	Boston	c 1872
BOS.6810	Hersey, Francis C. Row House	596 East Sixth St	Boston	c 1872
BOS.6811	Hersey, Francis C. Row House	598 East Sixth St	Boston	c 1872
BOS.6812	Hersey, Francis C. Row House	600 East Sixth St	Boston	c 1872
BOS.6813	Wheaton, Timothy House	814 East Sixth St	Boston	1871
BOS.6814	Atlantic House Hotel	868 East Sixth St	Boston	c 1870
BOS.6760	Locke, Richard House	411R East Third St	Boston	c 1828
BOS.6761	Burnham, Choate Elementary School	486 East Third St	Boston	1892
BOS.6762	Wade, Ellen M. House	512 East Third St	Boston	r 1895
BOS.12996	King Terminal Pump House - Electrical Cabinet	Elkins St	Boston	r 1920
BOS.12995	Puritan Wine - Northern Industrial Chemical Co.	7 Elkins St	Boston	1916
BOS.12997	King Terminal No. 11 - Kohnstamm, H. and Company	11 Elkins St	Boston	1915
BOS.12998	Shaw, John and Company Chemical Works	15 Elkins St	Boston	r 1920
BOS.12999		21 Elkins St	Boston	r 1920
BOS.13000	King Terminal No. 7	22 Elkins St	Boston	1927
BOS.810	Hawes Cemetery	Emerson St	Boston	1817
BOS.6971		133 Emerson St	Boston	r 1905
BOS.6968		172 Emerson St	Boston	c 1830
BOS.6969		176 Emerson St	Boston	r 1850
BOS.6970		204 Emerson St	Boston	r 1830
BOS.6972	Furbush, Milo House	249 Emerson St	Boston	1844
BOS.6973	Hotel Eaton	309-311 Emerson St	Boston	1887

Inv. No.	Property Name	Street	Town	Year
BOS.6974	Pierce, Samuel H. L. House	313 Emerson St	Boston	1862
BOS.15323	Blessed Sacrament Roman Catholic Chapel	9 F St	Boston	1886
BOS.6975	Kent, Barker B. Double House	92-96 F St	Boston	c 1868
BOS.6976	Kent, Barker B. Double House	98-100 F St	Boston	c 1852
BOS.6977	Pond, Adams and Basco Row House	114 F St	Boston	r 1870
BOS.6978	Pond, Adams and Basco Row House	116 F St	Boston	r 1870
BOS.6979	Gifford, Moses S. - Goodwin, Nathaniel Row House	118 F St	Boston	r 1870
BOS.6980	Gifford, Moses S. - Goodwin, Nathaniel Row House	120 F St	Boston	r 1870
BOS.6981	Gifford, Goodwin and Baker Row House	122 F St	Boston	r 1870
BOS.6982	Gifford, Goodwin and Baker Row House	124 F St	Boston	r 1870
BOS.12982	Boston Market Terminal Freight House #12	31 Fargo St	Boston	1928
BOS.12983		51-53 Fargo St	Boston	1920
BOS.12984		80 Fargo St	Boston	1917
BOS.5530	Boston Wharf Company Wool Warehouse	11-15 Farnsworth St	Boston	1893
BOS.5531	Boston Wharf Company Building	12-22 Farnsworth St	Boston	1917
BOS.15348	Farnsworth Street Garage	17-31 Farnsworth St	Boston	1987
BOS.5532	Boston Wharf Company Building	24-32 Farnsworth St	Boston	c 1895
BOS.5533	Boston Wharf Company Building	33-39 Farnsworth St	Boston	1909
BOS.5534	Boston Wharf Company Building	34-36 Farnsworth St	Boston	1909
BOS.5535	Boston Wharf Company Building	41-45 Farnsworth St	Boston	1908
BOS.5536	Boston Wharf Company Building	44-54 Farnsworth St	Boston	1915
BOS.5537	Boston Wharf Company Warehouse	47-53 Farnsworth St	Boston	1895
BOS.9256	Marine Park	Farragut Rd	Boston	c 1883
BOS.6983		65 Farragut Rd	Boston	r 1905
BOS.6984	Higgins, William J. Three Decker	73 Farragut Rd	Boston	1908
BOS.6985	Higgins, William J. Three Decker	75 Farragut Rd	Boston	1908
BOS.6986	Higgins, William J. Three Decker	77 Farragut Rd	Boston	1908
BOS.12964	Subaru Distributors Dealership	FID Kennedy Way	Boston	c 1980
BOS.12963	Au Bon Pain Offices	19 FID Kennedy Way	Boston	c 1980
BOS.12965	Boston Army Supply Base - Building 16	25 FID Kennedy Way	Boston	c 1940
BOS.6987	Saint Peter Lithuanian Roman Catholic Church	75 Flaherty Way	Boston	1901
BOS.9152	Fort Point Channel	Fort Point Channel	Boston	r 1850
BOS.9153	Fort Point Channel Bulkheads	Fort Point Channel	Boston	r 1850
BOS.9241	Fort Point Channel Bridge	Fort Point Channel	Boston	1898
BOS.9514	South Boston Sea Wall	Fort Point Channel	Boston	
BOS.13363		1 Fourth St Place	Boston	r 1865

Inv. No.	Property Name	Street	Town	Year
BOS.13364		2 Fourth St Place	Boston	r 1865
BOS.13365		3 Fourth St Place	Boston	r 1865
BOS.13366		31 G St	Boston	c 1852
BOS.13367		33 G St	Boston	c 1852
BOS.13368		34 G St	Boston	c 1852
BOS.13369		35 G St	Boston	c 1852
BOS.13370		36 G St	Boston	c 1852
BOS.13371		37 G St	Boston	r 1865
BOS.13372	Cook, Samuel House	39 G St	Boston	r 1865
BOS.13373	Kent, Barker B. House	41 G St	Boston	r 1865
BOS.13374	Jenkins, Reuben Y. Double House	43 G St	Boston	r 1865
BOS.13375	Jenkins, Reuben Y. Double House	45 G St	Boston	r 1865
BOS.13376		46 G St	Boston	1834
BOS.13377	Elms, James C. Double House	47 G St	Boston	r 1865
BOS.13378		48 G St	Boston	1834
BOS.13379	Whitman - Tucker Double House	49 G St	Boston	r 1865
BOS.13380		50 G St	Boston	r 1865
BOS.13381	Standish - Burnham Double House	51 G St	Boston	r 1865
BOS.6988	Briggs, Harrison O. House	52 G St	Boston	c 1852
BOS.13382	Fraught, George N. Double House	53 G St	Boston	r 1865
BOS.13383	Peterson, Capt. Peter House	54 G St	Boston	c 1861
BOS.13384	Smith, George P. Double House	55 G St	Boston	r 1865
BOS.13385		56 G St	Boston	c 1861
BOS.13386	Ellis, George W. Double House	57 G St	Boston	r 1865
BOS.13387		58 G St	Boston	c 1861
BOS.13388	Neilson, William House	59 G St	Boston	r 1865
BOS.13389		60 G St	Boston	r 1865
BOS.13390		60A G St	Boston	r 1865
BOS.13391	Johson - Hills Double House	61 G St	Boston	r 1865
BOS.13392		62 G St	Boston	r 1865
BOS.13393	Noyes, Elisha Double House	63 G St	Boston	r 1865
BOS.13394		64 G St	Boston	r 1865
BOS.13395	Wilson, Harvey Double House	65 G St	Boston	r 1865
BOS.13396		66 G St	Boston	r 1865
BOS.13397		67 G St	Boston	r 1890
BOS.13398		68 G St	Boston	r 1865
BOS.13399		69 G St	Boston	r 1890
BOS.13400		70 G St	Boston	r 1865

Inv. No.	Property Name	Street	Town	Year
BOS.13401		72 G St	Boston	r 1865
BOS.13402		73 G St	Boston	r 1880
BOS.13403	Wallackas Meats	73A G St	Boston	r 1905
BOS.13404		74 G St	Boston	r 1865
BOS.13405	Copeland, Joseph House	75 G St	Boston	c 1860
BOS.13407		76 G St	Boston	r 1865
BOS.6989	Harding, Lemon P. House	80 G St	Boston	c 1868
BOS.6990	Harding, Lemon P. House	82 G St	Boston	c 1853
BOS.13408		84 G St	Boston	r 1880
BOS.6991	Connor, James Row House	88 G St	Boston	c 1865
BOS.6992	Connor, James Row House	90 G St	Boston	c 1865
BOS.6993	Connor, James Row House	92 G St	Boston	c 1865
BOS.6994	Connor, James Row House	94 G St	Boston	c 1874
BOS.6995	South Boston High School	95 G St	Boston	1901
BOS.13409		96 G St	Boston	r 1865
BOS.13410		98 G St	Boston	r 1880
BOS.13411		100 G St	Boston	r 1890
BOS.13412		102 G St	Boston	r 1890
BOS.13413		104 G St	Boston	r 1865
BOS.13414		106 G St	Boston	r 1865
BOS.13415		108 G St	Boston	r 1865
BOS.6996	Johnson, Samuel W. Two-Family House	111 G St	Boston	1911
BOS.13416	Johnson, J. L. and S. J. Three Decker	115 G St	Boston	r 1895
BOS.13417		116 G St	Boston	r 1865
BOS.13418		118 G St	Boston	r 1865
BOS.13419	Johnson, J. L. and S. J. Three Decker	119 G St	Boston	r 1895
BOS.13420		120 G St	Boston	r 1865
BOS.13421	James, Francis Double House	121 G St	Boston	r 1880
BOS.13422		122 G St	Boston	r 1880
BOS.13423	Wyman, Charles F. Double House	123 G St	Boston	r 1880
BOS.13424		124 G St	Boston	r 1880
BOS.13425	Reardon, John A. Double House	125 G St	Boston	r 1880
BOS.13426		126 G St	Boston	r 1880
BOS.13427	McGrath, Mary E. Double House	127 G St	Boston	r 1880
BOS.13428		128 G St	Boston	r 1880
BOS.13429		129 G St	Boston	r 1880
BOS.13430		130 G St	Boston	r 1880
BOS.13431		131 G St	Boston	r 1890

Inv. No.	Property Name	Street	Town	Year
BOS.13432		Gates St	Boston	r 1925
BOS.13433		4 Gates St	Boston	r 1865
BOS.13434	Gleason, Alpheus House	5 Gates St	Boston	r 1865
BOS.13435		6 Gates St	Boston	r 1865
BOS.13436		7 Gates St	Boston	r 1865
BOS.13437	Carlton - Dean Double House	8 Gates St	Boston	c 1852
BOS.13438	Webber, William C. Double House	9 Gates St	Boston	r 1865
BOS.13439	Whiton - Sears Double House	10 Gates St	Boston	c 1852
BOS.13440		11 Gates St	Boston	r 1865
BOS.13441		12 Gates St	Boston	r 1865
BOS.13442		13 Gates St	Boston	r 1865
BOS.13443		14 Gates St	Boston	r 1865
BOS.13444		15 Gates St	Boston	r 1865
BOS.13445		16 Gates St	Boston	r 1865
BOS.13446		17 Gates St	Boston	r 1865
BOS.13447		18 Gates St	Boston	r 1865
BOS.13448		19 Gates St	Boston	r 1865
BOS.13449		20 Gates St	Boston	r 1865
BOS.13450		21 Gates St	Boston	r 1880
BOS.6997	Smith, James House	22 Gates St	Boston	c 1875
BOS.13451		23 Gates St	Boston	r 1880
BOS.13452		26 Gates St	Boston	r 1865
BOS.15227	Saint Monica's Roman Catholic Church Rectory	70 Gen. Wm. Devine Way	Boston	1955
BOS.6998	Power, Jacob P. House	98 H St	Boston	r 1880
BOS.6999	Power, Jacob P. House	100 H St	Boston	r 1880
BOS.7000	Stetson, Alpheus M. Three Decker	174 H St	Boston	c 1885
BOS.7001	Souther, Henry Row House	1 H Street Pl	Boston	r 1880
BOS.7002	Souther, Henry Row House	2 H Street Pl	Boston	r 1880
BOS.7003	Souther, Henry Row House	3 H Street Pl	Boston	r 1880
BOS.12966	Boston Army Supply Base - Building 19	6 Harbor St	Boston	c 1940
BOS.7004		36 I St	Boston	1905
BOS.7005	Gray, Solomon S. Row House	86 I St	Boston	c 1874
BOS.7006	Gray, Solomon S. Row House	88 I St	Boston	c 1874
BOS.7007	Gray, Solomon S. Row House	90 I St	Boston	c 1874
BOS.7008	Stark, Hannah Row House	92 I St	Boston	c 1884
BOS.7009	Stark, Hannah Row House	94 I St	Boston	c 1884
BOS.7010	Stark, Hannah Row House	96 I St	Boston	c 1884
BOS.7011	Stark, Hannah Row House	98 I St	Boston	c 1884

Inv. No.	Property Name	Street	Town	Year
BOS.7012	Stark, Hannah Row House	100 I St	Boston	c 1884
BOS.7013	Stark, Hannah Row House	102 I St	Boston	c 1884
BOS.7014	Saint Agnes Convent - Gate of Heaven Church	127 I St	Boston	1879
BOS.7015	Griffin Brothers Row House	151 I St	Boston	c 1874
BOS.7016	Griffin Brothers Row House	153 I St	Boston	c 1874
BOS.7017	Griffin Brothers Row House	155 I St	Boston	c 1874
BOS.7018	Griffin Brothers Row House	157 I St	Boston	c 1874
BOS.13453		1 Jason Terr	Boston	r 1865
BOS.13454		2 Jason Terr	Boston	r 1865
BOS.13455		3 Jason Terr	Boston	r 1865
BOS.13456		4 Jason Terr	Boston	r 1865
BOS.7019		10-12 Jenkins St	Boston	c 1852
BOS.13002	Goller, Allen Shoe Factory	60 K St	Boston	r 1920
BOS.13003	Dimes, Richard Silversmith Company	72 K St	Boston	r 1920
BOS.13004	New England Annealing and Tool Company Building	80 K St	Boston	r 1920
BOS.7020	Hawes, The	278 K St	Boston	r 1895
BOS.7032	Beckler, Daniel W. Row House	283 K St	Boston	1870
BOS.7033	Beckler, Daniel W. Row House	285 K St	Boston	1870
BOS.7034	Beckler, Daniel W. Row House	287 K St	Boston	1870
BOS.7035	Beckler, Daniel W. Row House	289 K St	Boston	1870
BOS.7036	Beckler, Daniel W. Row House	291 K St	Boston	1870
BOS.7037	Beckler, Daniel W. Row House	293 K St	Boston	1870
BOS.7038	Beckler, Daniel W. Row House	295 K St	Boston	1870
BOS.7039	Beckler, Daniel W. Row House	297 K St	Boston	1870
BOS.7021	James, Benjamin - James, George B. Row House	298 K St	Boston	1872
BOS.7040	Beckler, Daniel W. Row House	299 K St	Boston	1870
BOS.7022	James, Benjamin - James, George B. Row House	300 K St	Boston	1872
BOS.7041	Beckler, Daniel W. Row House	301 K St	Boston	1870
BOS.7023	James, Benjamin - James, George B. Row House	302 K St	Boston	1872
BOS.7042	Beckler, Daniel W. Row House	303 K St	Boston	1870
BOS.7024	James, Benjamin - James, George B. Row House	304 K St	Boston	1872
BOS.7043	Beckler, Daniel W. Row House	305 K St	Boston	1870
BOS.7025	James, Benjamin - James, George B. Row House	306 K St	Boston	1872
BOS.7026	Beckler, Daniel W. Row House	308 K St	Boston	1872

Inv. No.	Property Name	Street	Town	Year
BOS.7027	Berry, David A. House	318 K St	Boston	c 1870
BOS.7028	Berry, David A. Row House	354 K St	Boston	c 1871
BOS.7029	Russell, Sheppard Row House	356 K St	Boston	c 1871
BOS.7030	Berry, David A. Row House	358 K St	Boston	c 1871
BOS.7031	Rodgers, Josephine W. Row House	360 K St	Boston	c 1871
BOS.7044	O'Brien, Thomas House	372 K St	Boston	1853
BOS.7045	Goodnow, Jane H. House	384 K St	Boston	c 1858
BOS.7046	Mullay, John House	390 K St	Boston	1859
BOS.7047	Johnson, Samuel W. Three Decker	415 K St	Boston	1911
BOS.7054	Reardon, John W. House	7 Knowlton St	Boston	1909
BOS.7048	Eaton, William T. Apartment Building	92-96 L St	Boston	1884
BOS.7050	Eaton, William T. Row House	98 L St	Boston	1884
BOS.7051	Eaton, William T. Row House	100 L St	Boston	1884
BOS.7052	Eaton, William T. Apartment Building	102-108 L St	Boston	1884
BOS.7055	Flint, H. G. Three Decker	206 L St	Boston	1902
BOS.7056	Flint, H. G. Three Decker	208 L St	Boston	1902
BOS.7057		2 Leeds St	Boston	c 1863
BOS.7058		4 Leeds St	Boston	c 1863
BOS.7059		6 Leeds St	Boston	c 1863
BOS.13457	Wright, Frederick S. Double House	1 Linden St	Boston	c 1860
BOS.13458	James, Elisha F. Double House	2 Linden St	Boston	c 1860
BOS.13459	Wright, Frederick S. Double House	3 Linden St	Boston	c 1860
BOS.13460	Pettingill Double House	4 Linden St	Boston	c 1860
BOS.13461	James, Benjamin Double House	5 Linden St	Boston	c 1860
BOS.13462	Bowen, Hosea B. Double House	6 Linden St	Boston	c 1860
BOS.13463	Neale, Mary A. Double House	7 Linden St	Boston	c 1860
BOS.13464	James, Edward P. Double House	8 Linden St	Boston	c 1860
BOS.13465	Shales, Daniel House	9 Linden St	Boston	1863
BOS.13466	Hasting, Zorilda House	10 Linden St	Boston	1863
BOS.13467	Covington, Leonard House	11 Linden St	Boston	1863
BOS.13468	Richardson, Mary A. House	12 Linden St	Boston	1863
BOS.13469	Davis, Mary D. House	13 Linden St	Boston	1863
BOS.13470	Jenkins, Isaac N. House	14 Linden St	Boston	1863
BOS.13471	Patch, Charles F. House	15 Linden St	Boston	1863
BOS.13472	James, Benjamin House	16 Linden St	Boston	1863
BOS.13473	Hoyt, Anna M. House	17 Linden St	Boston	1863
BOS.13474	Foster, Dara S. House	18 Linden St	Boston	1863
BOS.13475	Kemp House	19 Linden St	Boston	1863

Inv. No.	Property Name	Street	Town	Year
BOS.13476	Knapp, H. C. House	20 Linden St	Boston	1863
BOS.7060	Winchester, William W. House	21 Linden St	Boston	c 1863
BOS.13477		23 Linden St	Boston	1863
BOS.7061	Burrell, Adoniram Row House	47 M St	Boston	1872
BOS.7062	Burrell, Adoniram Row House	49 M St	Boston	1872
BOS.7063	Burrell, Adoniram Row House	51 M St	Boston	1872
BOS.7064	Burrell, Adoniram Row House	53 M St	Boston	1872
BOS.7065	Ford, Catherine House	99-101 M St	Boston	c 1862
BOS.7066	Carmody, Mary J. Three Decker	177 M St	Boston	1910
BOS.7067	Carmody, Mary J. Three Decker	179 M St	Boston	1910
BOS.7068	Carmody, Mary J. Three Decker	181 M St	Boston	1910
BOS.5576	Boston Wharf Company Wool Warehouse	10 Melcher St	Boston	c 1903
BOS.9511	Boston Wharf Company Roof Sign	10 Melcher St	Boston	
BOS.15349	Boston Wharf Company Offices	10 Melcher St	Boston	1905
BOS.15350	New England Confectionary Company	11-17 Melcher St	Boston	1902
BOS.15351	New England Confectionary Company	19-27 Melcher St	Boston	1902
BOS.15352	New England Confectionary Company	29-37 Melcher St	Boston	1902
BOS.5538	Boston Wharf Company Building	49 Melcher St	Boston	1910
BOS.5539	Boston Wharf Company Building	51-61 Melcher St	Boston	1916
BOS.5540	French, Shriner and Urner Shoe Manufacturing Co.	63 Melcher St	Boston	1909
BOS.5542	Boston Wharf Company Warehouse	18-22 Midway St	Boston	c 1912
BOS.5549	Boston Wharf Company Warehouse	76-82 Midway St	Boston	1905
BOS.7069	Hemmen, Herman Double House	46-48 N St	Boston	1896
BOS.7071	Beckler, Daniel W. Row House	58 N St	Boston	1887
BOS.7072	Beckler, Daniel W. Row House	60 N St	Boston	1887
BOS.7073	Beckler, Daniel W. Row House	62 N St	Boston	1887
BOS.6913	Saint Brigid Roman Catholic Church	96 N St	Boston	1933
BOS.15328	Saint Brigid Roman Catholic Church Convent	100 N St	Boston	1966
BOS.7074	Stratton, Henry B. House	110-112 N St	Boston	1882
BOS.13478	Hayes, E. House	2 National St	Boston	r 1880
BOS.13479	Leonard, N. House	4 National St	Boston	r 1865
BOS.13480	Tappan, F. House	6 National St	Boston	r 1880
BOS.13481	Romosky, Anna House	8 National St	Boston	r 1865
BOS.13482	Sturtevant, George W. House	10 National St	Boston	r 1865
BOS.13483	Tripp, Abner L. House	12 National St	Boston	r 1865
BOS.13484	Stratton, Henry B. House	14 National St	Boston	r 1865
BOS.13485	Stratton, Henry B. - Roche House	18 National St	Boston	r 1890

Inv. No.	Property Name	Street	Town	Year
BOS.5550	Boston Wharf Company Building	1 Necco Ct	Boston	1907
BOS.5551	Boston Wharf Company Building	3 Necco Ct	Boston	1907
BOS.15353	New England Confectionary Company	5 Necco Ct	Boston	1907
BOS.15354	New England Confectionary Company	6 Necco Ct	Boston	1907
BOS.15355	Necco Street Garage	10 Necco St	Boston	1992
BOS.9000	Northern Avenue Draw Bridge	Northern Ave	Boston	c 1907
BOS.12967	Boston Army Supply Base - Refrigeration Plant	Northern Ave	Boston	c 1980
BOS.12968	Boston Army Supply Base - Building 38	Northern Ave	Boston	c 1940
BOS.12971	Boston Army Supply Base - Building 18	Northern Ave	Boston	c 1940
BOS.15356	Northern Avenue Draw Bridge Tenders House	Northern Ave	Boston	1908
BOS.15229	Chapel of Our Lady of Good Voyage	65 Northern Ave	Boston	1952
BOS.9252	South Boston Fish Pier	212-234 Northern Ave	Boston	c 1910
BOS.16589	South Boston Fish Pier - East Building	212-234 Northern Ave	Boston	c 1910
BOS.16590	South Boston Fish Pier - West Building	212-234 Northern Ave	Boston	c 1910
BOS.16591	South Boston Fish Pier - Fish Exchange Building	212-234 Northern Ave	Boston	c 1910
BOS.12969	Boston Army Supply Base - Building 56	300 Northern Ave	Boston	c 1940
BOS.12970	Boston Army Supply Base - Building 53	306 Northern Ave	Boston	c 1940
BOS.7075	Judkins, Charles S. - Robinson, L. Double House	84-86 O St	Boston	r 1880
BOS.6799	Pope, Benjamin Primary School	114 O St	Boston	1883
BOS.7076	Johnson, Samuel W. Three Decker	124 O St	Boston	1912
BOS.7077	Johnson, Samuel W. Three Decker	126 O St	Boston	1912
BOS.7078	Johnson, Samuel W. Three Decker	128 O St	Boston	1912
BOS.7079	Johnson, Samuel W. Three Decker	130 O St	Boston	1912
BOS.9654	Old Harbor Parkway - Old Colony Avenue	Old Colony Ave	Boston	1898
BOS.9655	Old Harbor Parkway - Old Harbor Village Footbridge	Old Colony Ave	Boston	1941
BOS.15226	Saint Monica's Roman Catholic Church	333 Old Colony Ave	Boston	1955
BOS.9645	Old Harbor Reservation Parkways	Old Harbor Pkwy	Boston	1883
BOS.9646	Old Harbor Reservation Parkway - Gardner Way	Old Harbor Pkwy	Boston	1883
BOS.9484		Old Harbor St	Boston	
BOS.7080	Carney Hospital Outpatient Building	4 Old Harbor St	Boston	1901
BOS.13486	Hatch - Powell House	17 Old Harbor St	Boston	r 1865
BOS.13487	Hatch - Stickney Double House	19 Old Harbor St	Boston	r 1880
BOS.13488	Hersey - Mosely Double House	23 Old Harbor St	Boston	r 1880
BOS.13489	Hersey, Charles H. Double House	25 Old Harbor St	Boston	r 1880
BOS.13490	Nickerson - Stapleton Double House	27 Old Harbor St	Boston	r 1880
BOS.13491	Moore, Nicholas F. House	37 Old Harbor St	Boston	r 1865
BOS.13492	Adamson - Crosby House	39 Old Harbor St	Boston	r 1865

Inv. No.	Property Name	Street	Town	Year
BOS.7081	Carney Hospital Nurses Residence	40 Old Harbor St	Boston	1925
BOS.13493	Bassett - Moore House	41 Old Harbor St	Boston	r 1865
BOS.13494	Bassett - Kellum House	43 Old Harbor St	Boston	r 1865
BOS.13495	Bassett - Lucas House	45 Old Harbor St	Boston	r 1865
BOS.13496	Wilson - Stout Double House	47 Old Harbor St	Boston	r 1865
BOS.13497	Thompson, William Double House	49 Old Harbor St	Boston	r 1865
BOS.13498	Bassett - Lockwood House	51 Old Harbor St	Boston	r 1865
BOS.13499	Bedlington, S. M. Double House	53 Old Harbor St	Boston	r 1865
BOS.13500		61 Old Harbor St	Boston	r 1880
BOS.13501	Bond, G. H. Double House	63 Old Harbor St	Boston	r 1880
BOS.13502	Simonds, J. F. Double House	65 Old Harbor St	Boston	r 1890
BOS.13503	Arnold, Jonathan M. Double House	67 Old Harbor St	Boston	r 1865
BOS.13504	Payson, Mary Double House	69 Old Harbor St	Boston	r 1865
BOS.13505	Morston, Frances E. House	71 Old Harbor St	Boston	r 1865
BOS.13506	Gill, Charles H. Double House	73 Old Harbor St	Boston	r 1865
BOS.13507	Pond, George F. Double House	75 Old Harbor St	Boston	r 1865
BOS.13508	Pond - Molloy Double House	77 Old Harbor St	Boston	r 1880
BOS.13509	Berry - Carroll Double House	79 Old Harbor St	Boston	r 1865
BOS.13510	Stetson, Alpheus M. House	80 Old Harbor St	Boston	r 1880
BOS.13511	Barstow, M. H. House	81 Old Harbor St	Boston	r 1880
BOS.13512	Suck, G. Frederick House	82 Old Harbor St	Boston	r 1865
BOS.13513	Fuller, C. House	83 Old Harbor St	Boston	r 1895
BOS.13514	Howard, T. and H. Three Decker	85 Old Harbor St	Boston	r 1895
BOS.13515	Boyson, William House	86 Old Harbor St	Boston	c 1852
BOS.13516	Howard, T. and H. Three Decker	87 Old Harbor St	Boston	r 1895
BOS.13517	Smith, Delia Three Decker	89 Old Harbor St	Boston	r 1895
BOS.13518	Kelly, James H. Three Decker	91 Old Harbor St	Boston	r 1895
BOS.13519	Plett, Chris F. Three Decker	93 Old Harbor St	Boston	r 1895
BOS.13520	Megan - Bowen House	99 Old Harbor St	Boston	r 1865
BOS.13521		100 Old Harbor St	Boston	r 1880
BOS.13522		101 Old Harbor St	Boston	r 1890
BOS.13523		102 Old Harbor St	Boston	r 1880
BOS.13524		103 Old Harbor St	Boston	r 1890
BOS.13525		104 Old Harbor St	Boston	r 1880
BOS.13526		106 Old Harbor St	Boston	r 1880
BOS.15330	Saint Peter Roman Catholic Church Rectory	50 Orton Marotta Way	Boston	1913
BOS.7082	Collins, James Row House	50 P St	Boston	1868
BOS.7083	Collins, James Row House	52 P St	Boston	1868

Inv. No.	Property Name	Street	Town	Year
BOS.7084	Collins, James Row House	54 P St	Boston	1868
BOS.7085	Collins, James Row House	56 P St	Boston	1868
BOS.7086	Collins, James Row House	58 P St	Boston	1868
BOS.13527		1 Pacific St	Boston	r 1865
BOS.13528	Tuckerman, W. I. House	2 Pacific St	Boston	r 1865
BOS.13529		3 Pacific St	Boston	r 1865
BOS.13530	Brown, Maria House	4 Pacific St	Boston	r 1865
BOS.13531		5 Pacific St	Boston	r 1865
BOS.13532	Wilson, Henry W. House	6 Pacific St	Boston	r 1865
BOS.13533		7 Pacific St	Boston	r 1865
BOS.13534	Wilson, Henry W. House	8 Pacific St	Boston	r 1865
BOS.13535		9 Pacific St	Boston	r 1880
BOS.13536	Wilson, Henry W. House	10 Pacific St	Boston	r 1865
BOS.13537		11 Pacific St	Boston	r 1880
BOS.13538	Wilson, Henry W. House	12 Pacific St	Boston	r 1865
BOS.13539		13 Pacific St	Boston	r 1865
BOS.13540	Parsons, Joseph C. House	14 Pacific St	Boston	r 1865
BOS.13541	Wilson, Henry W. House	16 Pacific St	Boston	r 1865
BOS.9512	Moakley, Evelyn Bridge	Seaport Blvd	Boston	1996
BOS.7179	Commonwealth Pier Five	162 Seaport Blvd	Boston	1914
BOS.9237	Silver Street Bridge over Conrail	Silver St	Boston	1918
BOS.5561	Boston Wharf Company Building	15-21 Sleeper St	Boston	1911
BOS.5562	Boston Wharf Company Building	29-31 Sleeper St	Boston	1915
BOS.5564	United Shoe Machine Corporation	51 Sleeper St	Boston	1929
BOS.7091	Washington Village Substation	Southampton St	Boston	1914
BOS.9236	Southampton Street Bridge over MBTA	Southampton St	Boston	1902
BOS.5565	Boston Wharf Company Iron Warehouse	5-9 Stillings St	Boston	1907
BOS.5566	Boston Wharf Company Paint Warehouse	11-15 Stillings St	Boston	1907
BOS.15364	Stillings Street Garage	11-23 Stillings St	Boston	2001
BOS.5567	Boston Wharf Company Radiator Warehouse	17-27 Stillings St	Boston	1905
BOS.5568	Boston Wharf Company Warehouse	29 Stillings St	Boston	1926
BOS.5569	Boston Wharf Company Iron Warehouse	35-37 Stillings St	Boston	1913
BOS.5570	Boston Wharf Company Warehouse	38-40 Stillings St	Boston	1913
BOS.5572	Boston Wharf Company Iron and Oil Warehouse	43 Stillings St	Boston	1904
BOS.5571	Boston Wharf Company Wholesale Grocery Warehouse	44-48 Stillings St	Boston	1914
BOS.13542		2 Story St	Boston	r 1865
BOS.13543		4 Story St	Boston	r 1865

Inv. No.	Property Name	Street	Town	Year
BOS.13544		6 Story St	Boston	r 1865
BOS.13545		8 Story St	Boston	r 1865
BOS.13546		9 Story St	Boston	r 1880
BOS.13547		10-12 Story St	Boston	r 1880
BOS.13548		11 Story St	Boston	r 1890
BOS.13550		13 Story St	Boston	r 1890
BOS.13549		14-16 Story St	Boston	r 1890
BOS.13551		20 Story St	Boston	r 1890
BOS.13552		24 Story St	Boston	r 1890
BOS.7092	Dana, Otis D. Two-Family House	26-28 Story St	Boston	r 1885
BOS.13553		28 Story St	Boston	r 1890
BOS.13554		28 Story St	Boston	r 1890
BOS.13555		30 Story St	Boston	r 1890
BOS.9001	Summer Street Bridge over Fort Point Channel	Summer St	Boston	1899
BOS.9155	Summer Street Bridge over A Street	Summer St	Boston	c 1890
BOS.9233	Summer Street Bridge over B Street	Summer St	Boston	1900
BOS.9234	L Street Bridge	Summer St	Boston	1892
BOS.9235	Summer Street Bridge over C Street	Summer St	Boston	1900
BOS.9250	Summer Street Viaduct Bridge	Summer St	Boston	1901
BOS.5573	Boston Wharf Company Wool Warehouse	250-254 Summer St	Boston	1899
BOS.5574	New England Confectionary Company Factory	253 Summer St	Boston	1902
BOS.5575	Boston Wharf Company Wool Warehouse	256-260 Summer St	Boston	1899
BOS.5577	Boston Wharf Company Wool Warehouse	262-266 Summer St	Boston	1899
BOS.5578	Boston Wharf Company Wool Warehouse	268-272 Summer St	Boston	1898
BOS.5579	Boston Wharf Company Wool Warehouse	269-273 Summer St	Boston	1910
BOS.5580	Boston Wharf Company Wool Warehouse	274-278 Summer St	Boston	1898
BOS.5581	United States Rubber Company Warehouse	280-290 Summer St	Boston	1898
BOS.5582	Boston Wharf Company Wool Warehouse	281-283 Summer St	Boston	1904
BOS.5583	Boston Wharf Company Wool Warehouse	285-297 Summer St	Boston	1903
BOS.5584	Williams, J. and Company Wool Warehouse	292-302 Summer St	Boston	1898
BOS.5585	Dwinell-Wright Coffee Importing Company Warehouse	311-319 Summer St	Boston	1904
BOS.5586	Boston Wharf Company Wool Warehouse	312-320 Summer St	Boston	1904
BOS.5587	Howes Brothers Tanning Company	321-325 Summer St	Boston	1911
BOS.5588	Foster, F. A. Dry Goods - Puritan Drapery Fabrics	322-330 Summer St	Boston	1910
BOS.5589	Daylight Baking Supplies Factory	327-333 Summer St	Boston	1911
BOS.15357	Middleby, Joseph Jr. Warehouse	337-347 Summer St	Boston	1907
BOS.12985	Western Electric Co. Electrical Supplies Building	385 Summer St	Boston	1917

Inv. No.	Property Name	Street	Town	Year
BOS.12986		401 Summer St	Boston	1919
BOS.12987		415 Summer St	Boston	1917
BOS.12988	Union Wool Company Wool Warehouse	425 Summer St	Boston	1917
BOS.12989	Williams, Jeremiah Wool Warehouse	495 Summer St	Boston	1910
BOS.12943	Boston Edison L Street Power Station	776 Summer St	Boston	1898
BOS.13005	Clayton, S. C. Syrup - Diamond Drug Company	803 Summer St	Boston	1923
BOS.13006	Karpp Building Supply Company	825 Summer St	Boston	r 1920
BOS.7093	Delaporte, Andrew Gustave House	5 Telegraph St	Boston	c 1870
BOS.7094	Mullin, Thomas M. - Willis, John E. Double House	19-21 Telegraph St	Boston	c 1875
BOS.13556	Molloy, Valentine Double House	52 Telegraph St	Boston	
BOS.13557	Giblin, Daniel C. Double House	54 Telegraph St	Boston	
BOS.13558	Staniford, Lydia E. House	56 Telegraph St	Boston	
BOS.13559		58 Telegraph St	Boston	
BOS.13560	O'Connor, Patrick House	60 Telegraph St	Boston	r 1865
BOS.13561		61 Telegraph St	Boston	r 1865
BOS.13562	Henchy, John House	62 Telegraph St	Boston	r 1865
BOS.13563		63 Telegraph St	Boston	r 1865
BOS.13564		64 Telegraph St	Boston	r 1880
BOS.13565		65 Telegraph St	Boston	r 1865
BOS.13566	Wade, Shadrach Double House	66 Telegraph St	Boston	r 1865
BOS.13567		67 Telegraph St	Boston	r 1865
BOS.13568	Shattuck, Ferdinand Double House	68 Telegraph St	Boston	r 1865
BOS.13569		69 Telegraph St	Boston	r 1865
BOS.9260	Dorchester Heights Monument	Thomas Park	Boston	1901
BOS.9261	Dorchester Heights - Knox, Henry Monument	Thomas Park	Boston	1927
BOS.9262	Dorchester Heights - 1876 Centennial Monument	Thomas Park	Boston	1877
BOS.9263	Dorchester Heights - Perimeter Fence	Thomas Park	Boston	1901
BOS.9485	South Boston Veteran's Memorial	Thomas Park	Boston	1982
BOS.9486	Thomas Park	Thomas Pk	Boston	c 1850
BOS.9795	Dorchester Heights Concrete Path System	Thomas Pk	Boston	c 1870
BOS.13570	Gray - Wadsworth House	5 Thomas Pk	Boston	r 1865
BOS.13571	Elms, Joseph D. Double House	7 Thomas Pk	Boston	r 1865
BOS.13572	James, Charles Double House	9 Thomas Pk	Boston	r 1865
BOS.13573	James, Benjamin House	11 Thomas Pk	Boston	r 1865
BOS.13574	James, Benjamin Stable	12 Thomas Pk	Boston	r 1865
BOS.7095	Whitman, Edward W. - Rogers, William Double House	13-14 Thomas Pk	Boston	c 1871

Inv. No.	Property Name	Street	Town	Year
BOS.13575	Lee - Holbrook Double House	15 Thomas Pk	Boston	r 1880
BOS.13576	Beard - Connors Double House	16 Thomas Pk	Boston	r 1880
BOS.13577	Bray, Susan House	17 Thomas Pk	Boston	r 1880
BOS.13578	Lothrop House	18 Thomas Pk	Boston	r 1880
BOS.7096	Bassett, Joseph Row House	19 Thomas Pk	Boston	1874
BOS.13579	James, Benjamin Double House	21 Thomas Pk	Boston	r 1865
BOS.13580	Earl - Moulton Double House	22 Thomas Pk	Boston	r 1865
BOS.13581		23 Thomas Pk	Boston	r 1865
BOS.13582		24 Thomas Pk	Boston	r 1865
BOS.7097	Callahan, Cornelius H. Double House	25-26 Thomas Pk	Boston	1871
BOS.13583		36 Thomas Pk	Boston	r 1890
BOS.13584	Stratton, Henry J. Double House	39 Thomas Pk	Boston	1884
BOS.13585	Stratton - Kelly Double House	40 Thomas Pk	Boston	r 1880
BOS.13586	Stratton - Kelly Double House	41 Thomas Pk	Boston	r 1880
BOS.13587	Stratton - Kelly Double House	42 Thomas Pk	Boston	r 1880
BOS.13588	Goodwin - Kenney House	43 Thomas Pk	Boston	r 1880
BOS.13589	Stetson - Ormsby House	44 Thomas Pk	Boston	r 1880
BOS.13590	Stetson - Kelly House	45 Thomas Pk	Boston	r 1880
BOS.7098	Hutchins, Clement House	46 Thomas Pk	Boston	c 1875
BOS.13591	Wenners, Elizabeth Double House	47 Thomas Pk	Boston	r 1890
BOS.13592	Goodman, Walter G. Double House	48 Thomas Pk	Boston	r 1890
BOS.13593	Goodman, Walter G. Double House	49 Thomas Pk	Boston	r 1890
BOS.13594	Greene, Maria J. Double House	50 Thomas Pk	Boston	r 1890
BOS.13595	Martin, George House	51 Thomas Pk	Boston	1886
BOS.13596	Martin, George House	52 Thomas Pk	Boston	1886
BOS.13597	Hotel Marie	53 Thomas Pk	Boston	r 1890
BOS.7099	Walbridge, Frederick House	56 Thomas Pk	Boston	1876
BOS.13598	Reardon, Mary C. House	57 Thomas Pk	Boston	r 1890
BOS.13599	Curtis, Thomas C. House	58 Thomas Pk	Boston	r 1890
BOS.7100	Stetson, John A. Double House	59-60 Thomas Pk	Boston	1887
BOS.7101	Gogin, Thomas House	61 Thomas Pk	Boston	c 1873
BOS.13600		63 Thomas Pk	Boston	1927
BOS.13601		65 Thomas Pk	Boston	1927
BOS.13602		67 Thomas Pk	Boston	1927
BOS.13603		68 Thomas Pk	Boston	1927
BOS.7102	Manning, Thomas - Johnson, Samuel W. House	69 Thomas Pk	Boston	c 1867
BOS.5552	Boston Wharf Company Building	12-18 Thomson Pl	Boston	1907
BOS.5553	Boston Wharf Company Paint and Varnish	19-23 Thomson Pl	Boston	1907

Inv. No.	Property Name	Street	Town	Year
	Warehouse			
BOS.15358	Thomson Financial Offices	22-24 Thomson Pl	Boston	1992
BOS.5554	Boston Wharf Company Warehouse	25-27 Thomson Pl	Boston	1909
BOS.5555	Boston Wharf Company Building	26-28 Thomson Pl	Boston	1908
BOS.15359	Boston Wharf Company Building	29-33 Thomson Pl	Boston	1912
BOS.5556	Boston Wharf Company Building	30-34 Thomson Pl	Boston	1916
BOS.15360	Boston Wharf Company Building	35-37 Thomson Pl	Boston	1913
BOS.5557	Boston Wharf Company Building	36-40 Thomson Pl	Boston	1900
BOS.5558	Boston Wharf Company Warehouse	41-45 Thomson Pl	Boston	1924
BOS.5559	Pittsburgh Plate Glass Company Warehouse	42-56 Thomson Pl	Boston	1909
BOS.5560	Boston Wharf Company Warehouse	47-55 Thomson Pl	Boston	1924
BOS.5563	Boston Wharf Company Building	35-37 Thomson St	Boston	1911
BOS.12972	Boston Army Supply Base - Building 54	7 Tide St	Boston	c 1940
BOS.7103		5 Vinton St	Boston	c 1919
BOS.7113	Saints Peter and Paul Roman Catholic Church	45 West Broadway	Boston	1844
BOS.7104	Cardinal Cushing Central High School for Girls	50-72 West Broadway	Boston	c 1868
BOS.7114	Saints Peter and Paul Roman Catholic Rectory	55-59 West Broadway	Boston	c 1868
BOS.15331	Devine Block	72 West Broadway	Boston	c 1890
BOS.7105	Casey, Thomas Building	82 West Broadway	Boston	1896
BOS.7106	Collins, James Liquor Import and Wholesale Dealers	262-270 West Broadway	Boston	r 1860
BOS.9251	Street Clock	342 West Broadway	Boston	c 1870
BOS.7107	Monks and Company Flour and Grain Building	366 West Broadway	Boston	1873
BOS.7108	South Boston Savings Bank	368-372 West Broadway	Boston	r 1870
BOS.7118	Greene, Gardiner Row House	369 West Broadway	Boston	c 1824
BOS.7117	Greene, Gardiner Row House	371 West Broadway	Boston	c 1824
BOS.7120	Nickerson Apartment Building	397-401 West Broadway	Boston	r 1895
BOS.7121	Bethesda Hall - Baker Building	403-415 West Broadway	Boston	1890
BOS.7090		409 West Broadway	Boston	c 1900
BOS.7109	Saint Matthew's Episcopal Church	410 West Broadway	Boston	1860
BOS.7110	U. S. Post Office - South Boston Branch	424-426 West Broadway	Boston	1919
BOS.7111	South Boston Savings Bank	460-462 West Broadway	Boston	1948
BOS.7112	South Boston Market	468-470 West Broadway	Boston	1935
BOS.7173	King, Augustus Double House	197-199 West Eighth St	Boston	c 1874
BOS.9239	West Fifth Street Bridge over Conrail	West Fifth St	Boston	1918
BOS.7160	Minot, William Row House	261 West Fifth St	Boston	c 1868
BOS.7161	Minot, William Row House	263 West Fifth St	Boston	c 1868
BOS.7162	Minot, William Row House	265 West Fifth St	Boston	c 1868

Inv. No.	Property Name	Street	Town	Year
BOS.7163	Burrage, J. Row House	267 West Fifth St	Boston	c 1868
BOS.7164	Frothingham, Nathaniel D. Row House	269 West Fifth St	Boston	c 1868
BOS.7165	Connor, James Row House	271 West Fifth St	Boston	c 1868
BOS.7166	Minot, William Row House	273 West Fifth St	Boston	c 1868
BOS.7167	Minot, William Row House	275 West Fifth St	Boston	c 1868
BOS.7168	Minot, William Row House	277 West Fifth St	Boston	c 1868
BOS.7169	Connor, James Row House	279 West Fifth St	Boston	c 1868
BOS.7170	Minot, William Row House	281 West Fifth St	Boston	c 1868
BOS.7171	Minot, William Row House	283 West Fifth St	Boston	c 1868
BOS.12990	Estabrook's, Rufus Sons Building	202 West First St	Boston	c 1890
BOS.9007	West Fourth Street Bridge - Dover Street Bridge	West Fourth St	Boston	1893
BOS.9245	West Fourth Street Bridge over MBTA	West Fourth St	Boston	1917
BOS.7146	York House - South Boston Hotel	99-101 West Fourth St	Boston	c 1830
BOS.7147	Wood, William W. Double House	123-125 West Fourth St	Boston	c 1845
BOS.7139	Hausman, Harry and Joseph Building	142 West Fourth St	Boston	c 1919
BOS.7140	Hausman, Harry and Joseph Building	150-154 West Fourth St	Boston	1904
BOS.7141	Bigelow School	350 West Fourth St	Boston	1901
BOS.7148	Homer, Henry House	361 West Fourth St	Boston	c 1843
BOS.7149	Thing, Joseph House	375 West Fourth St	Boston	c 1852
BOS.7150	Conley, Charles C. - Safford, Daniel House	377 West Fourth St	Boston	c 1844
BOS.7142	Nickerson, Capt. Jonathan S. House	380 West Fourth St	Boston	c 1870
BOS.7143	Murphy, Mary E. House	388 West Fourth St	Boston	c 1852
BOS.7151	Smith, Horace - Driscoll, J. Double House	389-391 West Fourth St	Boston	c 1852
BOS.7144	Winch, Mary - Lovett, George L. Double House	392-394 West Fourth St	Boston	c 1868
BOS.7152	Miles - Smith, James F. Double House	397-399 West Fourth St	Boston	c 1852
BOS.7153	Hughes, Joshua House	401 West Fourth St	Boston	c 1852
BOS.7154	Atwood, Charles House	411 West Fourth St	Boston	c 1852
BOS.7155	James, Benjamin Row House	417 West Fourth St	Boston	r 1860
BOS.7156	Smith, Freeman Row House	419 West Fourth St	Boston	r 1860
BOS.7157	Brown, Solon F. Row House	421 West Fourth St	Boston	r 1860
BOS.7158	Howard, Samuel Row House	423 West Fourth St	Boston	r 1860
BOS.7159	James, Francis Row House	425 West Fourth St	Boston	r 1860
BOS.6874	South Boston Community Health Center	453 West Fourth St	Boston	1926
BOS.7145	Boston Hook and Ladder Fire House #5	456 West Fourth St	Boston	r 1870
BOS.7122	Ipswich Hosiery Mill	154 West Second St	Boston	1912
BOS.7124	Lawrence, William R. Row House	161 West Second St	Boston	c 1852
BOS.7125	Lawrence, William R. Row House	163 West Second St	Boston	c 1852
BOS.7126	Lawrence, William R. Row House	165 West Second St	Boston	c 1852

Inv. No.	Property Name	Street	Town	Year
BOS.7127	Lawrence, William R. Row House	167 West Second St	Boston	c 1852
BOS.6848	Boston Beer Company	249 West Second St	Boston	c 1882
BOS.7123	Hersey Brothers Machinery Manufacturing Company	314-330 West Second St	Boston	c 1899
BOS.7172	Cunningham, Mary - Furber, Benjamin Double House	190-192 West Seventh St	Boston	c 1868
BOS.9232	West Sixth Street Bridge over Conrail	West Sixth St	Boston	1918
BOS.9238	West Third Street Bridge over Conrail	West Third St	Boston	1918
BOS.7137	Foley, John House	117 West Third St	Boston	c 1868
BOS.7128	Saint Vincent de Paul Roman Catholic Church	212 West Third St	Boston	1872
BOS.7129	Weston, Alden B. House	236 West Third St	Boston	c 1874
BOS.7130	Connors, Ann Double Three Decker	242-244 West Third St	Boston	r 1895
BOS.7131	Lanergan, Richard House	256 West Third St	Boston	c 1852
BOS.7138	Williams, Rev. J. J. House	267 West Third St	Boston	r 1880
BOS.7132	McCarthy, Ellen House	310 West Third St	Boston	c 1852
BOS.7133	Souther, Henry P. Row House	346 West Third St	Boston	c 1868
BOS.7134	Souther, Henry P. Row House	348 West Third St	Boston	c 1868
BOS.7135	Souther, Henry P. Row House	350 West Third St	Boston	c 1868
BOS.7136	Souther, Henry P. Row House	352 West Third St	Boston	c 1868
BOS.7175	Columbus Park Building	William J. Day Blvd	Boston	
BOS.7176	Columbus Park Building	William J. Day Blvd	Boston	
BOS.7177	Carson Beach Bath and Field House	William J. Day Blvd	Boston	c 1922
BOS.7178	Carson Beach Concession Stand	William J. Day Blvd	Boston	
BOS.9253	Columbus Park	William J. Day Blvd	Boston	c 1897
BOS.9254	Carson Beach	William J. Day Blvd	Boston	c 1897
BOS.9255	Strandway, The	William J. Day Blvd	Boston	c 1897
BOS.9579	South Boston Boat Clubs Granite Retaining Wall	William J. Day Blvd	Boston	r 1920
BOS.9580	South Boston Boat Clubs Iron Fence	William J. Day Blvd	Boston	r 1920
BOS.6851	L Street Bath House	1663-1685 William J. Day Blvd	Boston	1931
BOS.7174	Richmond, Augustus C. House	52-54 Woodward St	Boston	c 1874
BOS.15361	Factory Buildings Trust Industrial Building #2	21 Wormwood St	Boston	c 1896
BOS.15365	Factory Buildings Trust Industrial Building #3	23-27 Wormwood St	Boston	c 1896
BOS.15362	Factory Buildings Trust Industrial Building #4	33-37 Wormwood St	Boston	c 1897
BOS.9515	Factory Buildings Trust Chimney Stack	41-45 Wormwood St	Boston	c 1896
BOS.15363	Factory Buildings Trust Industrial Building #5	41-45 Wormwood St	Boston	c 1896