



HARBOR HISTORY MUSEUM

July 27, 2016

Mr. Panjini Balaraju  
Toxics Cleanup Program  
Southwest Regional Office  
Department of Ecology

Dear Mr. Balaraju,

As you are aware, the Harbor History Museum have a desire to obtain a No Further Action (NFA) letter from the Department of Ecology in regards to the property located at 4121 Harborview Dr Gig Harbor, WA 98335. Our objective under the Voluntary Cleanup Program (VCP) is to obtain groundwater monitoring data for four consecutive quarters showing no detectable amounts of chemicals of concern. Listed below are the laboratory results from the latest sampling and analysis.

2016 QTR 3 Data analysis- sample

Two groundwater monitoring wells (MW-05 and MW-07) were sampled on 7/08/2016 using the proper low flow sampling techniques with the samples being sent to Spectra Laboratories in Tacoma Washington for Volatile Organic Analysis (VOA). The results from reported for these samples showed non-detects for all chemicals of concern from well MW7 and well MW5, except at MW-5 there was a hit for vinyl Chloride at 0.32 ppb.

Included in this letter are:

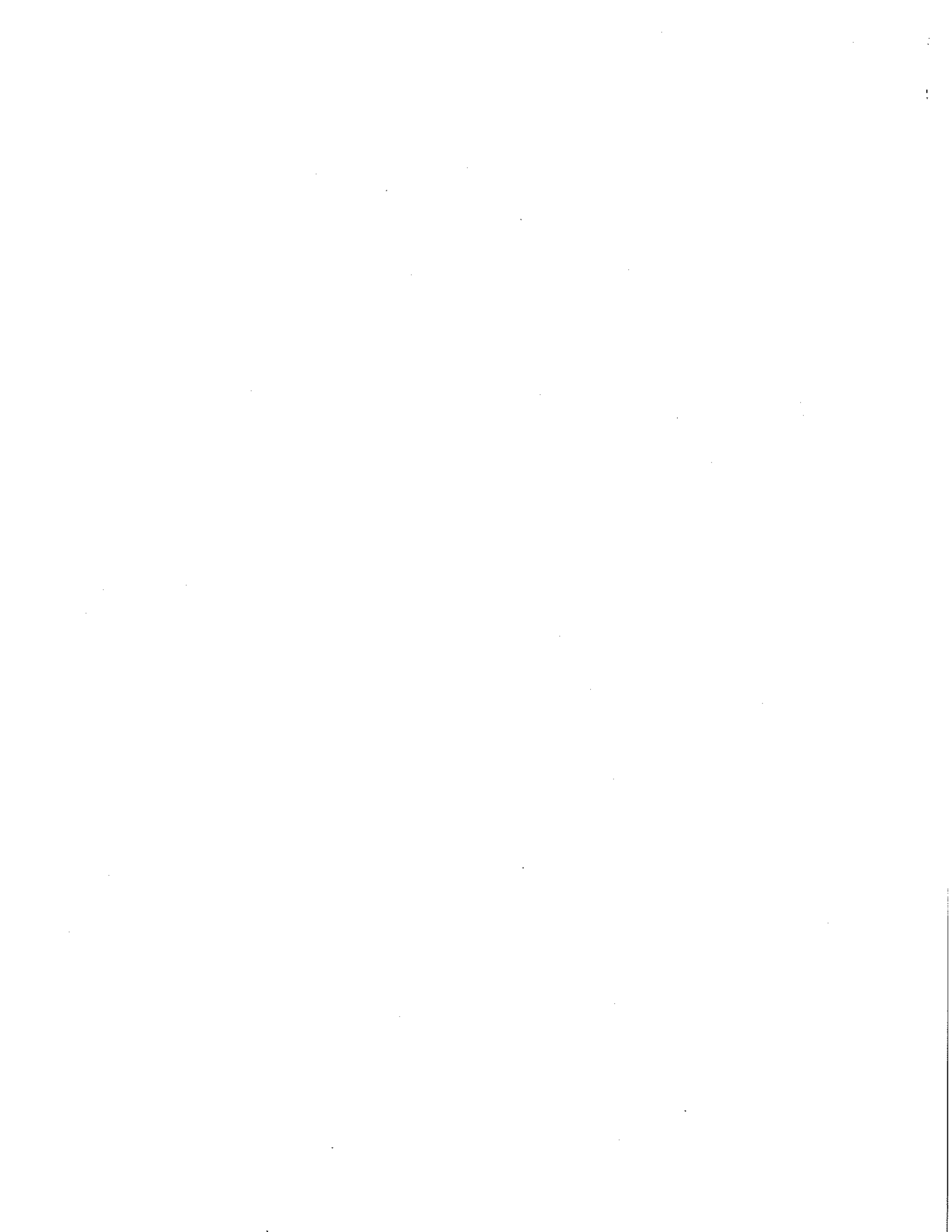
- Copy of the raw laboratory data and associated QA/QC.
- The field data showing the typical field reporting results.
- Copy of the chain of custody.

Field Data

Well number	MW-5	MW-7
Date	7/8/16	7/8/16
Time	1130 hrs	1200 hrs
Depth to top of water	4'7"	6'4"
Depth to bottom of well	15'5"	15'4"
Water depth	10'11"	10'0"
Purge volume	5 gallons	5 gallons
Beginning Conductivity	140	425
Beginning pH	7.0	7.0
Ending Conductivity	140	425
Ending pH	7.0	7.0

*Mirna Fritz*

Mirna Fritz  
Harbor History Museum  
Email: mirnaf@harborhistorymuseum.org





# SPECTRA Laboratories

...Where experience matters

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07/20/2016

Harbor History Museum  
4121 Harborview Dr.  
Gig Harbor, WA 98332

P.O.#: \*  
Project: Q-3  
Client ID: Trip Blank  
Sample Matrix: Water  
Date Sampled: 07/08/2016  
Date Received: 07/13/2016  
Spectra Project: 2016070224  
Spectra Number:1

Analyte	Result	Units	Method	Analyte	Result	Units	Method
1,1,1,2-Tetrachloroethane	<1.0	µg/L	SW846 8260C	2-Butanone (MEK)	<10	µg/L	SW846 8260C
1,1,1-Trichloroethane	<1.0	µg/L	SW846 8260C	2-Chloroethylvinyl Ether	<10	µg/L	SW846 8260C
1,1,2,2-Tetrachloroethane	<1.0	µg/L	SW846 8260C	2-Chlorotoluene	<1.0	µg/L	SW846 8260C
1,1,2-Trichloroethane	<1.0	µg/L	SW846 8260C	2-Hexanone (MBK)	<10	µg/L	SW846 8260C
1,1-Dichloroethane	<1.0	µg/L	SW846 8260C	4-Chlorotoluene	<1.0	µg/L	SW846 8260C
1,1-Dichloroethene	<1.0	µg/L	SW846 8260C	4-Isopropyltoluene	<1.0	µg/L	SW846 8260C
1,1-Dichloropropene	<1.0	µg/L	SW846 8260C	4-methyl-2-pentanone	<10	µg/L	SW846 8260C
1,2,3-Trichlorobenzene	<1.0	µg/L	SW846 8260C	Acetone	<10	µg/L	SW846 8260C
1,2,3-Trichloropropane	<1.0	µg/L	SW846 8260C	Acetonitrile	<10	µg/L	SW846 8260C
1,2,4-Trichlorobenzene	<1.0	µg/L	SW846 8260C	Acrolein	<10	µg/L	SW846 8260C
1,2,4-Trimethylbenzene	<1.0	µg/L	SW846 8260C	Acrylonitrile	<10	µg/L	SW846 8260C
1,2-Dibromo3Chloropropane	<10	µg/L	SW846 8260C	Benzene	<1.0	µg/L	SW846 8260C
1,2-Dibromoethane (EDB)	<1.0	µg/L	SW846 8260C	Bromobenzene	<1.0	µg/L	SW846 8260C
1,2-Dichlorobenzene	<1.0	µg/L	SW846 8260C	Bromochloromethane	<1.0	µg/L	SW846 8260C
1,2-Dichloroethane	<1.0	µg/L	SW846 8260C	Bromodichloromethane	<1.0	µg/L	SW846 8260C
1,2-Dichloropropane	<1.0	µg/L	SW846 8260C	Bromoform	<1.0	µg/L	SW846 8260C
1,3,5-Trimethylbenzene	<1.0	µg/L	SW846 8260C	Bromomethane	<1.0	µg/L	SW846 8260C
1,3-Dichlorobenzene	<1.0	µg/L	SW846 8260C	Carbon Disulfide	<10	µg/L	SW846 8260C
1,3-Dichloropropane	<1.0	µg/L	SW846 8260C	Carbon Tetrachloride	<1.0	µg/L	SW846 8260C
1,4-Dichlorobenzene	<1.0	µg/L	SW846 8260C	Chlorobenzene	<1.0	µg/L	SW846 8260C
2,2-Dichloropropane	<1.0	µg/L	SW846 8260C	Chlorodibromomethane	<1.0	µg/L	SW846 8260C

Vinyl Chloride analysis performed using a 25ml sparge for a reporting limit of 0.20 ug/L.

Surrogate	Recovery	Method
Dibromofluoromethane	116	SW846 8260C
1,2-Dichloroethane-d4	111	SW846 8260C
Toluene-d8	95	SW846 8260C
4-Bromofluorobenzene	99	SW846 8260C

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager

a14/sgh



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07/20/2016

Harbor History Museum  
4121 Harborview Dr.  
Gig Harbor, WA 98332

P.O.#: \*  
Project: Q-3  
Client ID: Trip Blank  
Sample Matrix: Water  
Date Sampled: 07/08/2016  
Date Received: 07/13/2016  
Spectra Project: 2016070224  
Spectra Number: 1

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Chloroethane	<1.0	µg/L	SW846 8260C	cis-1,3-Dichloropropene	<1.0	µg/L	SW846 8260C
Chloroform	<1.0	µg/L	SW846 8260C	n-Butylbenzene	<1.0	µg/L	SW846 8260C
Chloromethane	<1.0	µg/L	SW846 8260C	n-Propylbenzene	<1.0	µg/L	SW846 8260C
Dibromomethane	<1.0	µg/L	SW846 8260C	sec-Butylbenzene	<1.0	µg/L	SW846 8260C
Dichlorodifluoromethane	<1.0	µg/L	SW846 8260C	tert-Butylbenzene	<1.0	µg/L	SW846 8260C
Ethylbenzene	<1.0	µg/L	SW846 8260C	trans-1,2-Dichloroethene	<1.0	µg/L	SW846 8260C
Hexachlorobutadiene	<1.0	µg/L	SW846 8260C	trans-1,3-Dichloropropene	<1.0	µg/L	SW846 8260C
Iodomethane	<10	µg/L	SW846 8260C				
Isopropylbenzene	<1.0	µg/L	SW846 8260C				
Methyl-tert-Butyl Ether	<1.0	µg/L	SW846 8260C				
Methylene chloride	<1.0	µg/L	SW846 8260C				
Naphthalene	<1.0	µg/L	SW846 8260C				
Styrene	<1.0	µg/L	SW846 8260C				
Tetrachloroethene	<1.0	µg/L	SW846 8260C				
Toluene	<1.0	µg/L	SW846 8260C				
Total Xylenes	<2.0	µg/L	SW846 8260C				
Trichloroethene	<1.0	µg/L	SW846 8260C				
Trichlorofluoromethane	<1.0	µg/L	SW846 8260C				
Vinyl Acetate	<10	µg/L	SW846 8260C				
Vinyl chloride	<0.20	µg/L	SW846 8260C				
cis-1,2-Dichloroethene	<1.0	µg/L	SW846 8260C				

Vinyl Chloride analysis performed using a 25ml sparge for a reporting limit of 0.20 ug/L.

Surrogate	Recovery	Method
Dibromofluoromethane	116	SW846 8260C
1,2-Dichloroethane-d4	111	SW846 8260C
Toluene-d8	95	SW846 8260C
4-Bromofluorobenzene	99	SW846 8260C

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Steve Hibbs, Laboratory Manager  
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07/20/2016

Harbor History Museum  
4121 Harborview Dr.  
Gig Harbor, WA 98332


P.O.#: \*  
Project: Q-3  
Client ID: MW5  
Sample Matrix: Water  
Date Sampled: 07/08/2016  
Date Received: 07/13/2016  
Spectra Project: 2016070224  
Spectra Number:2

Analyte	Result	Units	Method	Analyte	Result	Units	Method
1,1,1,2-Tetrachloroethane	<1.0	µg/L	SW846 8260C	2-Butanone (MEK)	<10	µg/L	SW846 8260C
1,1,1-Trichloroethane	<1.0	µg/L	SW846 8260C	2-Chloroethylvinyl Ether	<10	µg/L	SW846 8260C
1,1,2,2-Tetrachloroethane	<1.0	µg/L	SW846 8260C	2-Chlorotoluene	<1.0	µg/L	SW846 8260C
1,1,2-Trichloroethane	<1.0	µg/L	SW846 8260C	2-Hexanone (MBK)	<10	µg/L	SW846 8260C
1,1-Dichloroethane	<1.0	µg/L	SW846 8260C	4-Chlorotoluene	<1.0	µg/L	SW846 8260C
1,1-Dichloroethene	<1.0	µg/L	SW846 8260C	4-Isopropyltoluene	<1.0	µg/L	SW846 8260C
1,1-Dichloropropene	<1.0	µg/L	SW846 8260C	4-methyl-2-pentanone	<10	µg/L	SW846 8260C
1,2,3-Trichlorobenzene	<1.0	µg/L	SW846 8260C	Acetone	<10	µg/L	SW846 8260C
1,2,3-Trichloropropane	<1.0	µg/L	SW846 8260C	Acetonitrile	<10	µg/L	SW846 8260C
1,2,4-Trichlorobenzene	<1.0	µg/L	SW846 8260C	Acrolein	<10	µg/L	SW846 8260C
1,2,4-Trimethylbenzene	<1.0	µg/L	SW846 8260C	Acrylonitrile	<10	µg/L	SW846 8260C
1,2-Dibromo3Chloropropane	<10	µg/L	SW846 8260C	Benzene	<1.0	µg/L	SW846 8260C
1,2-Dibromoethane (EDB)	<1.0	µg/L	SW846 8260C	Bromobenzene	<1.0	µg/L	SW846 8260C
1,2-Dichlorobenzene	<1.0	µg/L	SW846 8260C	Bromochloromethane	<1.0	µg/L	SW846 8260C
1,2-Dichloroethane	<1.0	µg/L	SW846 8260C	Bromodichloromethane	<1.0	µg/L	SW846 8260C
1,2-Dichloropropane	<1.0	µg/L	SW846 8260C	Bromoform	<1.0	µg/L	SW846 8260C
1,3,5-Trimethylbenzene	<1.0	µg/L	SW846 8260C	Bromomethane	<1.0	µg/L	SW846 8260C
1,3-Dichlorobenzene	<1.0	µg/L	SW846 8260C	Carbon Disulfide	<10	µg/L	SW846 8260C
1,3-Dichloropropane	<1.0	µg/L	SW846 8260C	Carbon Tetrachloride	<1.0	µg/L	SW846 8260C
1,4-Dichlorobenzene	<1.0	µg/L	SW846 8260C	Chlorobenzene	<1.0	µg/L	SW846 8260C
2,2-Dichloropropane	<1.0	µg/L	SW846 8260C	Chlorodibromomethane	<1.0	µg/L	SW846 8260C

Vinyl Chloride analysis performed using a 25ml sparge for a reporting limit of 0.20 ug/L.

Surrogate	Recovery	Method
Dibromofluoromethane	118	SW846 8260C
1,2-Dichloroethane-d4	116	SW846 8260C
Toluene-d8	97	SW846 8260C
4-Bromofluorobenzene	107	SW846 8260C

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Steve Hibbs, Laboratory Manager

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Page 3 of 6



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07/20/2016

Harbor History Museum  
4121 Harborview Dr.  
Gig Harbor, WA 98332

P.O.#: \*  
Project: Q-3  
Client ID: MW5  
Sample Matrix: Water  
Date Sampled: 07/08/2016  
Date Received: 07/13/2016  
Spectra Project: 2016070224  
Spectra Number:2

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Chloroethane	<1.0	µg/L	SW846 8260C	cis-1,3-Dichloropropene	<1.0	µg/L	SW846 8260C
Chloroform	<1.0	µg/L	SW846 8260C	n-Butylbenzene	<1.0	µg/L	SW846 8260C
Chloromethane	<1.0	µg/L	SW846 8260C	n-Propylbenzene	<1.0	µg/L	SW846 8260C
Dibromomethane	<1.0	µg/L	SW846 8260C	sec-Butylbenzene	<1.0	µg/L	SW846 8260C
Dichlorodifluoromethane	<1.0	µg/L	SW846 8260C	tert-Butylbenzene	<1.0	µg/L	SW846 8260C
Ethylbenzene	<1.0	µg/L	SW846 8260C	trans-1,2-Dichloroethene	<1.0	µg/L	SW846 8260C
Hexachlorobutadiene	<1.0	µg/L	SW846 8260C	trans-1,3-Dichloropropene	<1.0	µg/L	SW846 8260C
Iodomethane	<10	µg/L	SW846 8260C				
Isopropylbenzene	<1.0	µg/L	SW846 8260C				
Methyl-tert-Butyl Ether	<1.0	µg/L	SW846 8260C				
Methylene chloride	<1.0	µg/L	SW846 8260C				
Naphthalene	<1.0	µg/L	SW846 8260C				
Styrene	<1.0	µg/L	SW846 8260C				
Tetrachloroethene	<1.0	µg/L	SW846 8260C				
Toluene	<1.0	µg/L	SW846 8260C				
Total Xylenes	<2.0	µg/L	SW846 8260C				
Trichloroethene	<1.0	µg/L	SW846 8260C				
Trichlorofluoromethane	<1.0	µg/L	SW846 8260C				
Vinyl Acetate	<10	µg/L	SW846 8260C				
Vinyl chloride	0.32	µg/L	SW846 8260C				
cis-1,2-Dichloroethene	<1.0	µg/L	SW846 8260C				

Vinyl Chloride analysis performed using a 25ml sparge for a reporting limit of 0.20 ug/L.

Surrogate	Recovery	Method
Dibromofluoromethane	118	SW846 8260C
1,2-Dichloroethane-d4	116	SW846 8260C
Toluene-d8	97	SW846 8260C
4-Bromofluorobenzene	107	SW846 8260C

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Steve Hibbs, Laboratory Manager

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07/20/2016

Harbor History Museum  
4121 Harborview Dr.  
Gig Harbor, WA 98332

P.O.#: \*  
Project: Q-3  
Client ID: MW7  
Sample Matrix: Water  
Date Sampled: 07/08/2016  
Date Received: 07/13/2016  
Spectra Project: 2016070224  
Spectra Number:3

Analyte	Result	Units	Method	Analyte	Result	Units	Method
1,1,1,2-Tetrachloroethane	<1.0	µg/L	SW846 8260C	2-Butanone (MEK)	<10	µg/L	SW846 8260C
1,1,1-Trichloroethane	<1.0	µg/L	SW846 8260C	2-Chloroethylvinyl Ether	<10	µg/L	SW846 8260C
1,1,2,2-Tetrachloroethane	<1.0	µg/L	SW846 8260C	2-Chlorotoluene	<1.0	µg/L	SW846 8260C
1,1,2-Trichloroethane	<1.0	µg/L	SW846 8260C	2-Hexanone (MBK)	<10	µg/L	SW846 8260C
1,1-Dichloroethane	<1.0	µg/L	SW846 8260C	4-Chlorotoluene	<1.0	µg/L	SW846 8260C
1,1-Dichloroethene	<1.0	µg/L	SW846 8260C	4-Isopropyltoluene	<1.0	µg/L	SW846 8260C
1,1-Dichloropropene	<1.0	µg/L	SW846 8260C	4-methyl-2-pentanone	<1.0	µg/L	SW846 8260C
1,2,3-Trichlorobenzene	<1.0	µg/L	SW846 8260C	Acetone	<10	µg/L	SW846 8260C
1,2,3-Trichloropropane	<1.0	µg/L	SW846 8260C	Acetonitrile	<10	µg/L	SW846 8260C
1,2,4-Trichlorobenzene	<1.0	µg/L	SW846 8260C	Acrolein	<10	µg/L	SW846 8260C
1,2,4-Trimethylbenzene	<1.0	µg/L	SW846 8260C	Acrylonitrile	<10	µg/L	SW846 8260C
1,2-Dibromo3Chloropropane	<10	µg/L	SW846 8260C	Benzene	<1.0	µg/L	SW846 8260C
1,2-Dibromoethane (EDB)	<1.0	µg/L	SW846 8260C	Bromobenzene	<1.0	µg/L	SW846 8260C
1,2-Dichlorobenzene	<1.0	µg/L	SW846 8260C	Bromochloromethane	<1.0	µg/L	SW846 8260C
1,2-Dichloroethane	<1.0	µg/L	SW846 8260C	Bromodichloromethane	<1.0	µg/L	SW846 8260C
1,2-Dichloropropane	<1.0	µg/L	SW846 8260C	Bromoform	<1.0	µg/L	SW846 8260C
1,3,5-Trimethylbenzene	<1.0	µg/L	SW846 8260C	Bromomethane	<1.0	µg/L	SW846 8260C
1,3-Dichlorobenzene	<1.0	µg/L	SW846 8260C	Carbon Disulfide	<10	µg/L	SW846 8260C
1,3-Dichloropropane	<1.0	µg/L	SW846 8260C	Carbon Tetrachloride	<1.0	µg/L	SW846 8260C
1,4-Dichlorobenzene	<1.0	µg/L	SW846 8260C	Chlorobenzene	<1.0	µg/L	SW846 8260C
2,2-Dichloropropane	<1.0	µg/L	SW846 8260C	Chlorodibromomethane	<1.0	µg/L	SW846 8260C

Vinyl Chloride analysis performed using a 25ml sparge for a reporting limit of 0.20 ug/L.

Surrogate	Recovery	Method
Dibromofluoromethane	119	SW846 8260C
1,2-Dichloroethane-d4	120	SW846 8260C
Toluene-d8	96	SW846 8260C
4-Bromofluorobenzene	106	SW846 8260C

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07/20/2016

Harbor History Museum  
4121 Harborview Dr.  
Gig Harbor, WA 98332

P.O.#: \*  
Project: Q-3  
Client ID: MW7  
Sample Matrix: Water  
Date Sampled: 07/08/2016  
Date Received: 07/13/2016  
Spectra Project: 2016070224  
Spectra Number:3

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Chloroethane	<1.0	µg/L	SW846 8260C	cis-1,3-Dichloropropene	<1.0	µg/L	SW846 8260C
Chloroform	<1.0	µg/L	SW846 8260C	n-Butylbenzene	<1.0	µg/L	SW846 8260C
Chloromethane	<1.0	µg/L	SW846 8260C	n-Propylbenzene	<1.0	µg/L	SW846 8260C
Dibromomethane	<1.0	µg/L	SW846 8260C	sec-Butylbenzene	<1.0	µg/L	SW846 8260C
Dichlorodifluoromethane	<1.0	µg/L	SW846 8260C	tert-Butylbenzene	<1.0	µg/L	SW846 8260C
Ethylbenzene	<1.0	µg/L	SW846 8260C	trans-1,2-Dichloroethene	<1.0	µg/L	SW846 8260C
Hexachlorobutadiene	<1.0	µg/L	SW846 8260C	trans-1,3-Dichloropropene	<1.0	µg/L	SW846 8260C
Iodomethane	<10	µg/L	SW846 8260C				
Isopropylbenzene	<1.0	µg/L	SW846 8260C				
Methyl-tert-Butyl Ether	<1.0	µg/L	SW846 8260C				
Methylene chloride	<1.0	µg/L	SW846 8260C				
Naphthalene	<1.0	µg/L	SW846 8260C				
Styrene	<1.0	µg/L	SW846 8260C				
Tetrachloroethene	<1.0	µg/L	SW846 8260C				
Toluene	<1.0	µg/L	SW846 8260C				
Total Xylenes	<2.0	µg/L	SW846 8260C				
Trichloroethene	<1.0	µg/L	SW846 8260C				
Trichlorofluoromethane	<1.0	µg/L	SW846 8260C				
Vinyl Acetate	<10	µg/L	SW846 8260C				
Vinyl chloride	<0.20	µg/L	SW846 8260C				
cis-1,2-Dichloroethene	<1.0	µg/L	SW846 8260C				

Vinyl Chloride analysis performed using a 25ml sparge for a reporting limit of 0.20 ug/L.

Surrogate	Recovery	Method
Dibromofluoromethane	119	SW846 8260C
1,2-Dichloroethane-d4	120	SW846 8260C
Toluene-d8	96	SW846 8260C
4-Bromofluorobenzene	106	SW846 8260C

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager  
a14/sgh

## **Balaraju, Panjini (ECY)**

---

**From:** Mirna Fritz <mirnaf@harborhistorymuseum.org>  
**Sent:** Wednesday, July 27, 2016 9:14 AM  
**To:** Balaraju, Panjini (ECY)  
**Cc:** Katharine Hensler  
**Subject:** Q. 3 Sampling results for Harbor History Museum  
**Attachments:** Response letter Q3 Dept. of Ecology.pdf; 2016070224 - Q-3.pdf

Dear Mr. Panjini,

Hope to find you well. Please find attached the results of our third quarter testing at Harbor History Museum.

Thank you for your time and effort.

**Mirna Fritz | Office Manager & Accountant**



**HARBOR HISTORY MUSEUM**  
[mirnaf@harborhistorymuseum.org](mailto:mirnaf@harborhistorymuseum.org)  
4121 Harborview Drive  
Gig Harbor, WA 98335  
253-858-6722 ext. 4





July 20, 2016

Harbor History Museum  
4121 Harborview Drive  
Gig Harbor, WA 98335  
Attn: Rick Fuller

Case Narrative  
Client Project: Q-3  
Spectra Project: 2016070224

Three water samples--two from monitoring wells and an accompanying trip blank-- were received at the laboratory on July 08, 2016 for Volatile Organic Compounds (VOC's) analysis by EPA method SW 846-8260. The sample assigned spectra lab #1 was identified on the chain of custody as the trip blank. Spectra lab #2 had a client ID of MW-5. Spectra sample #3 had a client ID of MW-7.

With the exception of vinyl chloride, the VOC quantitation was performed using a traditional 5ml sparge. As site history indicates a potential presence of vinyl chloride, an additional analysis was performed specifically for vinyl chloride employing a 25ml sparge. The purge of a 25ml sample aliquot provides a quantitation limit of 0.2 ug/L, which is the published MTCA level for vinyl chloride in groundwater.

The samples MW-7 and the Trip Blank were each found to be non-detect for Vinyl Chloride. However, the sample MW-5 (Spectra sample #2) showed a small but measurable amount of vinyl chloride at 0.32 ug/L. In the sample sequence, this sample ran between the trip blank and sample #3 (MW-7), both of which were found to be non-detect. Although below the reporting limit of 1.0 ug/L when run using the traditional 5ml sparge, the vinyl chloride was detectable in the 5ml sparge at an estimated concentration of 0.35 ug/L, providing confirmation of the reported result from the 25ml sparge.

As a donation to the Harbor History Museum, Spectra Laboratories will continue to offer the future VOC testing of these quarterly samples at no charge.

Please feel free to call with any questions regarding these samples.

Sincerely

Steven G. Hibbs  
Laboratory Manager



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July 19, 2016

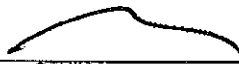
Harbor History Museum  
4121 Harborview Dr.  
Glg Harbor, WA 98332

Sample Matrix: Water  
EPA Method: 624/8260C  
Spectra Project: 2016070224  
Date Analyzed: 7/13/2016  
Units: ug/L  
Applies to Spectra #'s: 1-3  
Spiked Sample 2016070091-1

### GCMS VOLATILE ORGANIC ANALYSIS Matrix Spike/ Matrix Spike Duplicate Results

COMPOUND	SAMPLE RESULT	SPIKE AMOUNT	MS RESULT	MS %REC	MSD RESULT	MSD %REC	RPD
1,1-Dichloroethene	<1	10.0	7.38	74	8.10	81	9.3
Benzene	<1	10.0	7.86	79	7.83	78	0.4
Trichloroethene	<1	10.0	7.74	77	8.67	86	10.2
Toluene	<1	10.0	9.00	90	9.17	92	1.9
Chlorobenzene (Results after dilution)	<1	10.0	9.18	92	9.73	97	5.8

Surrogates	MS	MSD
Dibromofluoromethane	116	115
1,2-Dichloroethane-d4	116	115
Toluene-d8	97	98
4-Bromofluorobenzene	102	101

  
Steven G. Hibbs  
Laboratory Manager



# SPECTRA Laboratories

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July 19, 2016

Harbor History Museum  
4121 Harborview Dr.  
Gig Harbor, WA 98332

Sample matrix: Water

Spectra Project:  
Spectra #  
Applies to Sample #1-3

Date Received: 7/8/2016  
Date Analyzed: 7/13/2016  
Dilution: 1  
< = less than  
2016070088  
Method Blank

## VOLATILE ORGANIC ANALYSIS

## METHOD 624/8260

Compound	ug/l.	Compound	ug/l.
Acetone	< 10.00	1,2-Dichloropropane	< 1.00
Acrolein	< 10.00	1,3-Dichloropropane	< 1.00
Acrylonitrile	< 10.00	cis-1,3-Dichloropropene	< 1.00
Benzene	< 1.00	trans-1,3-Dichloropropene	< 1.00
Bromobenzene	< 1.00	2,2-Dichloropropane	< 1.00
Bromochloromethane	< 1.00	1,1-Dichloropropene	< 1.00
Bromodichloromethane	< 1.00	Ethylbenzene	< 1.00
Bromoform	< 1.00	2-Hexanone (MBK)	< 10.00
Bromomethane	< 1.00	Hexachlorobutadiene	< 1.00
2-Butanone (MEK)	< 10.00	Iodomethane	< 10.00
n-Butylbenzene	< 1.00	Isopropylbenzene	< 1.00
sec-Butylbenzene	< 1.00	p-Isopropyltoluene	< 1.00
tert-Butylbenzene	< 1.00	Methylene chloride	< 1.00
Carbon Disulfide	< 10.00	4-Methyl-2-pentanone (MIBK)	< 10.00
Carbon tetrachloride	< 1.00	MTBE	< 1.00
Chlorobenzene	< 1.00	Naphthalene	< 1.00
Chlorodibromomethane	< 1.00	n-Propylbenzene	< 1.00
Chloroethane	< 1.00	Styrene	< 1.00
2-Chloroethyl Vinyl ether	< 10.00	1,1,1,2-Tetrachloroethane	< 1.00
Chloroform	< 1.00	1,1,2-Tetrachloroethane	< 1.00
Chloromethane	< 1.00	Tetrachloroethene	< 1.00
2-Chlorotoluene	< 1.00	Toluene	< 1.00
4-Chlorotoluene	< 1.00	Total Xylenes	< 2.00
1,2-Dibromo-3-Chloropropane (DBCP)	< 10.00	1,2,3-Trichlorobenzene	< 1.00
1,2-Dibromoethane (EDB)	< 1.00	1,2,4-Trichlorobenzene	< 1.00
Dibromomethane	< 1.00	1,1,1-Trichloroethane	< 1.00
1,2-Dichlorobenzene	< 1.00	1,1,2-Trichloroethane	< 1.00
1,3-Dichlorobenzene	< 1.00	Trichloroethene	< 1.00
1,4-Dichlorobenzene	< 1.00	Trichlorofluoromethane	< 1.00
Dichlorodifluoromethane	< 1.00	1,2,3-Trichloropropane	< 1.00
1,1-Dichloroethane	< 1.00	1,2,4-Trimethylbenzene	< 1.00
1,2-Dichloroethane	< 1.00	1,3,5-Trimethylbenzene	< 1.00
1,1-Dichloroethene	< 1.00	Vinyl Acetate	< 10.00
cis-1,2-Dichloroethene	< 1.00	Vinyl chloride	< 0.20
trans-1,2-Dichloroethene	< 1.00		

(Vinyl Chloride result from 25ml sparge for 0.2ug/l. RL, performed on 07/20/16)

## SURROGATE RECOVERIES

Dibromofluoromethane	112	%
1,2-Dichloroethane-d4	116	%
Toluene-d8	96	%
4-Bromofluorobenzene	113	%

Steven G. Hibbs  
Laboratory Manager

# Communications Record

(Internal Document)

Client:

HHM

Client Contact:

Rick Fuller

Date:

7/20/2016

Time:

0905

Spectra Contact:

Steve Abbe

Project:

2016070224

Please identify project as "Q-3"

SBF



