Sterling Environmental Engineering, P.C.

February 17, 2016

Mr. Daniel Lanners
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7014

Subject: Former M. Argueso and Company, Inc.
441 & 442 Waverly Avenue, Mamaroneck, NY
Site #C360108
Second Biannual 2015 Groundwater Monitoring Results
STERLING File #28012 (Task 995)

Dear Mr. Lanners,

The second 2015 biannual groundwater sampling event for the above-referenced site was conducted by Sterling Environmental Engineering, P.C. (STERLING) on December 16 and 17, 2015. This sampling was conducted in accordance with the approved Site Management Plan (SMP) dated October 2013, and the modifications approved by the New York State Department of Environmental Conservation (NYSDEC) dated March 7, 2014 and April 29, 2015.

Background

In June 2013, Hydrogen Release Compound (HRC) was injected into the subsurface surrounding wells GZ-22D and GZ-23D. Quarterly monitoring was conducted for one year after the injections were completed. Biannual monitoring was approved by the NYSDEC starting in 2015.

This report presents the second biannual groundwater monitoring results for 2015.

Groundwater Monitoring

Four (4) onsite and two (2) offsite monitoring wells were sampled via peristaltic pump and analyzed for Part 375 Volatile Organic Compounds (VOCs). A figure showing the well locations is attached. The Daily Field Reports and Sampling Data Sheets are also attached.

Results of the laboratory analyses are contained in Table 1, attached. Laboratory results and the Data Usability Summary Reports (DUSR) are also attached. The results are compared to Part 703.5 Groundwater Standards and NYSDEC TOGS 1.1.1 Water Quality Standards and Guidance Values. Figure 1 shows the monitoring well locations.

Since the injections, levels of Tetrachloroethylene (PCE) and Trichloroethylene (TCE) have decreased in monitoring wells B6-OWD, GZ-21D, GZ-22D, GZ-23D, and OSMW-4.

The following discussion details the trends in each well:

B6-OWD

Initially, levels of several VOCs increased in this well. During the three most recent events, levels of all VOCs in this well have decreased to below standards.

GZ-21D

Initially, levels of several VOCs increased in this well. During the most recent event, levels of all VOCs in this well have decreased to below standards with the exception of 1,2-Dichloroethane. Benzene was detected at the regulatory standard, but did not exceed.

GZ-22D

PCE and TCE levels in this well have decreased to below standards for the two most recent events. All other VOCs have decreased to levels below standard with the exception of 1,2-Dichloroethane, Benzene, Vinyl Chloride, trans-1,2-Dichloroethene, Methyl tert butyl ether, and cis-1,2-Dichloroethene.

GZ-23D

Both PCE and TCE concentrations decreased significantly through 2014. TCE concentrations have increased since the end of 2014 and PCE concentrations have decreased. Vinyl chloride, a daughter compound of PCE and TCE, increased following the injections and has decreased below standards during the most recent event. Both cis-1,2-dichloroethene and trans-1,2-dichloroethene increased following the injections, and remain above standards.

OSMW-3

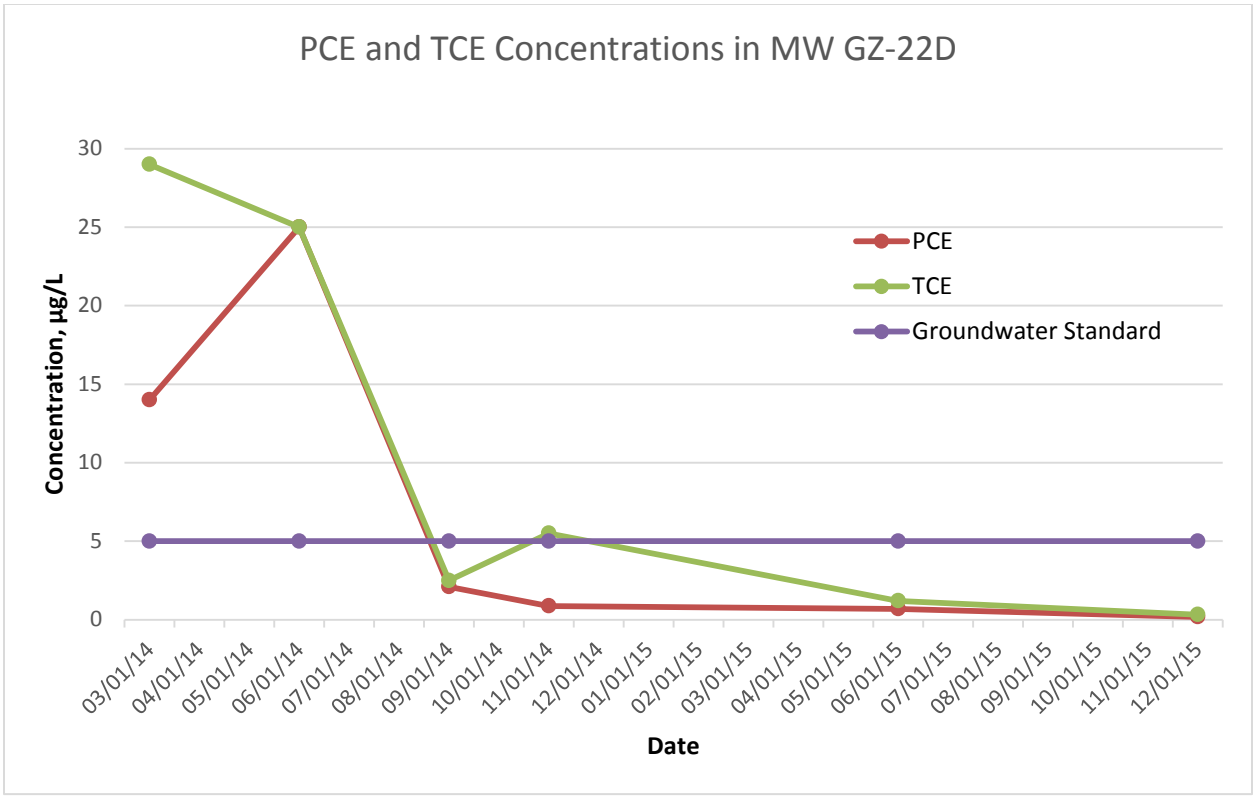
Both PCE and TCE levels increased following the injections but both compounds decreased for the two most recent events. However, the levels of PCE and TCE remain elevated. Cis-1,2-dichloroethene also increased, and remains above standards for this event.

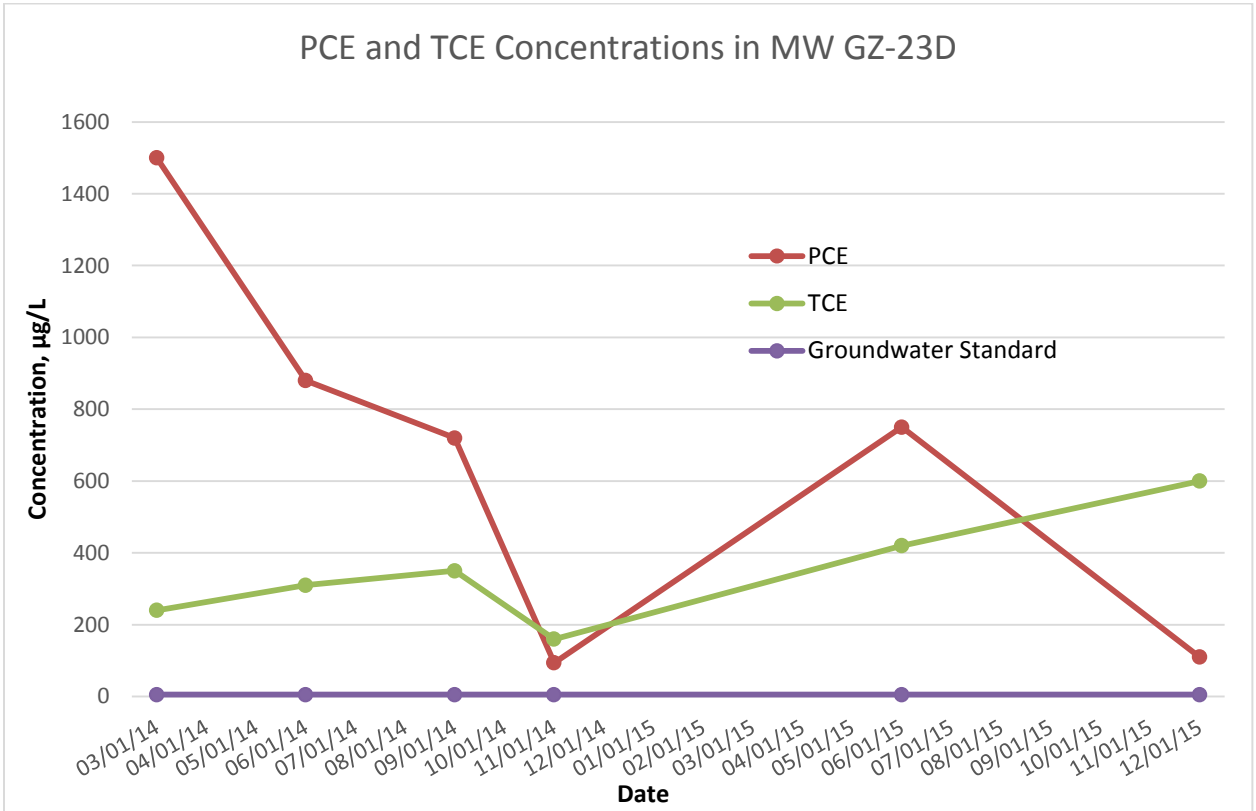
OSMW-4

All VOCs have been below standards for both events in 2015.

The charts below depict the decreasing levels of PCE and TCE in wells GZ-22D and GZ-23D over time.

Initially, wells GZ-22D and GZ-23D contained the highest concentrations of PCE and TCE of the onsite wells and were therefore chosen for treatment.


PCE and TCE Concentrations in MW GZ-22D
Concentration, µg/L
30
25
20
15
10
5
0
PCE
TCE
Groundwater Standard
03/01/14
04/01/14
05/01/14
06/01/14
07/01/14
08/01/14
09/01/14
10/01/14
11/01/14
12/01/14
01/01/15
02/01/15
03/01/15
04/01/15
05/01/15
06/01/15
07/01/15
08/01/15
09/01/15
10/01/15
11/01/15
12/01/15
Date


PCE and TCE Concentrations in MW GZ-23D
Concentration, µg/L
1600
1400
1200
1000
800
600
400
200
0
PCE
TCE
Groundwater Standard
03/01/14
04/01/14
05/01/14
06/01/14
07/01/14
08/01/14
09/01/14
10/01/14
11/01/14
12/01/14
01/01/15
02/01/15
03/01/15
04/01/15
05/01/15
06/01/15
07/01/15
08/01/15
09/01/15
10/01/15
11/01/15
12/01/15
Date

Inspections

In accordance with the SMP, a comprehensive annual site-wide inspection and asphalt and soil cover system inspection were conducted on December 17, 2015. Details of the annual inspection will be included in the Periodic Review Report (PRR) for 2015, which will be submitted under separate cover.

Conclusions and Recommendations

A review of the groundwater monitoring data since the injections occurred shows an overall decrease in the level of VOCs in all wells except OSMW-3. Therefore, the remedy continues to achieve remedial goals at this site. STERLING recommends groundwater monitoring continue on a biannual schedule and will conduct the next biannual sampling event in April 2016.

Please contact me should you have any questions.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.

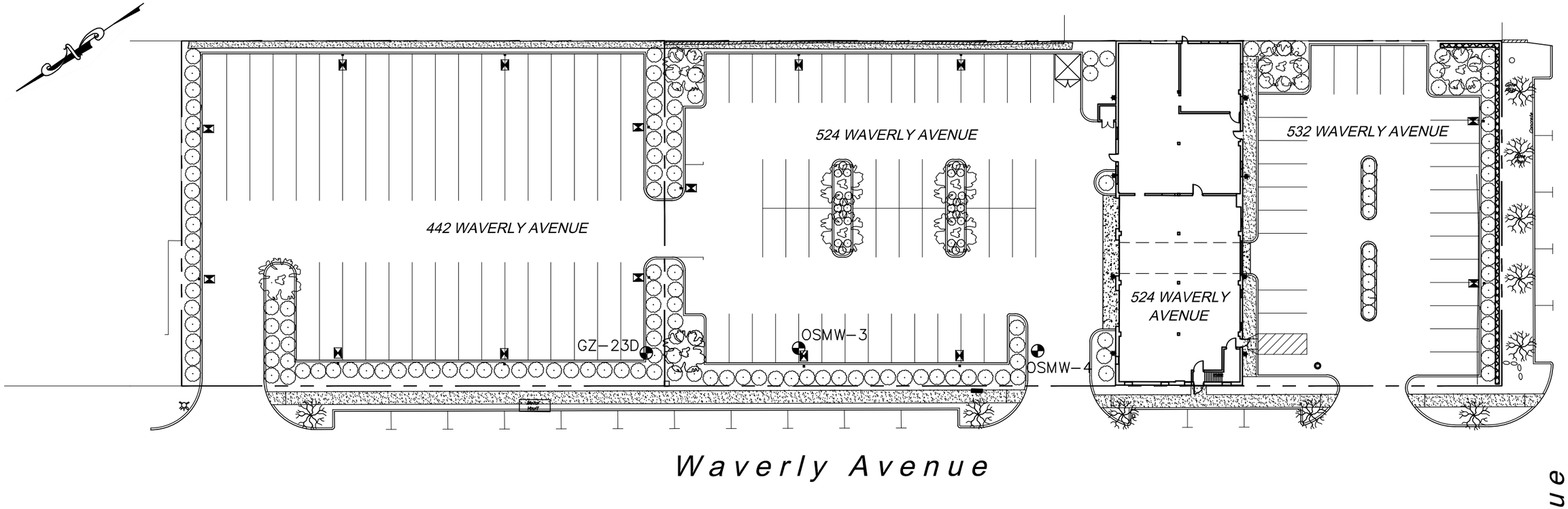
Mark P. Millspaugh, P.E.
President
mark.millspaugh@sterlingenvironmental.com

MPM/bc
Email/First Class Mail
Attachments

cc: T.J. Milo, New Waverly Avenue Associates, LLC
Kevin Young, Young Sommer, LLC
Amen Omorogbe, P.E., NYSDEC

S:\Sterling\Projects\2008 Projects\Waverly Avenue (441 & 442) - 28012\Reports\GWM Reports\2015 December GWM\NYSDEC_2ndBiannual2015GWresults_ltr.docx

FIGURE



TOTAL VOCs (µg/L)		
WELL ID	HIGHEST CONCENTRATION PRIOR TO 2013	DEC. 2015
B6-OWD	615.70	4.88
G2-21D	585.60	63.30
G2-22D	284.00	66.50
G2-23D	10,192.00	1,747.00
OSMW-3	900.10	1,800.00
OSMW-4	1,106.00	0.94

LEGEND:

- LIGHT POLE
- MONITORING WELL
- CONCRETE SIDEWALK
- PROPERTY BOUNDARY
- FENCE

0 20' 40' 80

1 inch = 40' ft.

BASE MAP PROVIDED BY SITE DESIGN CONSULTANTS, DATED FEBRUARY 22, 2010.

FIGURE 1

S:\Drawings\28012 - 441 & 442 Waverly Avenue\28012094_F-1 - QuarterlyMonitoring with Table.dwg SWEETT 2/2/2016 11:55 AM

STERLING
Sterling Environmental Engineering, P.C.
24 Wade Road ♦ Latham, New York 12110

QUARTERLY GROUNDWATER MONITORING WELL LOCATIONS
SITE# C360108
NEW WAVERLY AVENUE ASSOCIATES, LLC
V/T OF MAMARONECK WESTCHESTER CO., N.Y.

PROJ. No.:	28012	DATE:	01/28/2016	SCALE:	1" = 40'	DWG. NO.	28012094	FIGURE	1

TABLES

Table 1
Summary of Groundwater Analytical Data Results to Title 6 Part 703.5 Groundwater Standards and NYSDEC TOGS 1.1.1 Guidance Values
441 and 442 Waverly Avenue
Volatile Organic Compounds
Site #C360108

Location			**441 Waverly Avenue**																		
Sample ID		**Water Quality Standard***	**B6-OWD**									**DUP-1 [8]**	**GZ-21D**								**DUP-1 [4]**
Unit		**µg/L**	**µg/L**									**µg/L**	**µg/L**								**µg/L**
Sample Date			**08/21/09**	**01/11/12**	**10/15/13**	**03/24/14**	**06/18/14**	**09/24/14**	**11/05/14**	**06/23/15**	**12/16/15**	**12/16/15**	**08/20/09**	**01/11/12**	**10/15/13**	**03/24/14**	**06/18/14**	**09/24/14**	**11/05/14**	**06/23/15**	**12/16/15**	**06/18/14**
Parameter																					
Volatile Organic Compounds:	CAS#																				
1,1-Dichloroethane	75-34-3	5	<5.0	<5.0	<5.0	<1.0	<4.0	<4.0	<3.0	<0.70	<0.70	<0.70	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<0.38	<0.70	<0.70	<4.0
1,1-Dichloroethene	75-35-4	5	<5.0	<5.0	<5.0	<1.0	<4.0	<4.0	<2.3	<0.14	<0.14	<0.14	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<0.29	<0.14	<0.14	<4.0
1,2,3-Trichlorobenzene	87-61-6	5	NA	NA	NA	NA	NA	NA	NA	<0.70	<0.70	<0.70	<5.0	NA	NA	NA	NA	NA	NA	<0.70	<0.70	NA
1,2,4-Trichlorobenzene	120-82-1	5	NA	NA	NA	NA	NA	NA	NA	<0.70	<0.70	<0.70	<5.0	NA	NA	NA	NA	NA	NA	<0.70	<0.70	NA
1,2-Dichloroethane	107-06-2	0.6	**9.7**	<5.0	**1.9** J	**2.8**	**8.0**	**9.1**	<1.7	0.36 J	<0.13	<0.13	**170** D	**5.3**	<5.0	**190** D	**190**	**4.1**	0.4 J	**54**	**55**	**190**
cis-1,2-Dichloroethene	156-59-2	5	**390** D	1.5 J	**76**	**180** D	**330**	**430** D	<6.5	1.3 J	1.1 J	1.2 J	**270** D	**10**	**7.6**	**310** D	**290**	**5.6**	<0.81	**100**	<0.70	**350**
trans-1,2-Dichloroethene	156-60-5	5	**150**	<5.0	**6.8**	**7.2**	**8.4**	**14**	<7.2	<0.70	<0.70	<0.70	**6.6**	<5.0	<5.0	3.8	<5.0	<1.0	<0.9	0.99 J	0.86 J	<4.0
2-Butanone (MEK)	78-93-3	50 GV	<5.0	<5.0	<5.0	<10	<40	<40	<11	<1.9	<1.9	<1.9	<5.0	<5.0	<5.0	<10	<50	<10	<1.3	2.5 J	<1.9	<40
Acetone	67-64-1	50 GV	<50.0	<5.0	<5.0	<10	<40	<40	<24	<1.5	<1.5	<1.5	<50.0	<5.0	<5.0	<10	<50	<10	<3.0	20	4.4 J	<40
Benzene	71-43-2	1	<5.0	0.51 J	<5.0	<1.0	<4.0	<4.0	<3.3	0.38 J	0.28 J	0.29 J	**61**	<5.0	<5.0	**8.2**	<5.0	<1.0	<0.41	**1.2**	1.0	<4.0
n-Butylbenzene	104-51-8	5	<5.0	<5.0	<5.0	<1.0	<4.0	<4.0	<5.1	NA	NA	NA	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<0.64	NA	NA	<4.0
sec-Butylbenzene	135-98-8	5	<5.0	<5.0	<5.0	<1.0	<4.0	<4.0	<6.0	NA	NA	NA	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<0.75	NA	NA	<4.0
tert-Butylbenzene	98-06-6	5	<5.0	<5.0	<5.0	<1.0	<4.0	<4.0	<6.5	NA	NA	NA	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<0.81	NA	NA	<4.0
Carbon disulfide	75-15-0	---	NA	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	<5.0	NA	NA	NA	NA	NA	NA	4.2 J	2.0 J	NA
Ethylbenzene	100-41-4	5	<5.0	<5.0	<5.0	<1.0	<4.0	<4.0	<5.9	<0.70	<0.70	<0.70	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<0.74	<0.70	<0.70	<4.0
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5	NA	NA	NA	NA	NA	NA	NA	<0.70	<0.70	<0.70	<5.0	NA	NA	NA	NA	NA	NA	<0.70	<0.70	NA
Methyl tert-butyl ether (MTBE)	1634-04-4	10 GV	<5.0	<5.0	<5.0	<1.0	<4.0	<4.0	<1.3	<0.70	<0.70	<0.70	<5.0	<5.0	<5.0	0.27 J	<5.0	<1.0	<0.16	<0.70	<0.70	<4.0
n-Propylbenzene	103-65-1	5	<5.0	<5.0	<5.0	<1.0	<4.0	<4.0	<5.5	NA	NA	NA	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<0.64	NA	NA	<4.0
Tetrachloroethene	127-18-4	5	**23**	**6.2**	**18**	**59**	**47**	**110**	<2.9	2.4	2.1	2.2	**41**	1.7 J	<5.0	**9.8**	3.4 J	0.89 J	1.0	0.18 J	<0.18	2.9 J
Trichloroethene	79-01-6	5	**43**	2.1 J	**41**	**170** D	**180**	**330**	<3.7	1.3	1.4	1.4	**33**	0.58 J	<5.0	**7.8**	**15**	0.82 J	2.3	<0.18	<0.18	**13**
Toluene	108-88-3	5	<5.0	<5.0	<5.0	<1.0	<4.0	<4.0	<4.1	<0.70	<0.70	<0.70	<5.0	<5.0	<5.0	<1.0	<5.0	<1.0	<0.51	<0.70	<0.70	<4.0
Vinyl chloride	75-01-4	2	<5.0	<5.0	<5.0	<1.0	<4.0	<4.0	<7.2	<0.07	<0.07	<0.07	**4.0** J	<5.0	<5.0	**4.3**	<5.0	<1.0	<0.90	1.7	<0.07	<4.0

Notes:

BOLD Indicates exceedance of groundwater standard
* Groundwater Standards are obtained from Title 6 Part 703.5, and Guidance Values are obtained from NYSDEC TOGS (1.1.1) "Ambient Water Quality Standards and Guidance Values".
< Indicates the parameter was not detected at the laboratory detection limit shown.
NA Not Analyzed.
--- No standard or not applicable.

[1], [2] DUP-1 samples collected from monitoring well location GZ-22D.
[3] DUP-1 samples collected from offsite monitoring well location OSMW-4.
[4] DUP-1 samples collected from monitoring well location GZ-21D.
[5] DUP-1 samples collected from monitoring well location OSMW-4.
[6] DUP-1 samples collected from monitoring well location OSMW-3
[7] DUP-1 samples collected from monitoring well location OSMW-4.
[8] DUP-1 samples collected from monitoring well location B6-OWD

Laboratory Qualifiers:

D Indicates the undiluted analysis exceeded the equipment calibration range. The concentration shown is obtained from a diluted analysis.
J Indicates the concentration shown is an estimated value because the compound was detected below the reporting limit.
j Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method.

Table 1
Summary of Groundwater Analytical Data Results to Title 6 Part 703.5 Groundwater Standards and NYSDEC TOGS 1.1.1 Guidance Values
441 and 442 Waverly Avenue
Volatile Organic Compounds
Site #C360108

Location			**441 Waverly Avenue**											**442 Waverly Avenue**								
Sample ID		**Water Quality Standard***	**GZ-22D**									**DUP-1 [1]**	**DUP-1 [2]**	**GZ-23D**								
Unit		**µg/L**	**µg/L**									**µg/L**	**ug/L**	**µg/L**								
Sample Date			**08/19/09**	**01/11/12**	**10/15/13**	**03/24/14**	**06/18/14**	**09/24/14**	**11/05/14**	**06/23/15**	**12/16/15**	**10/15/13**	**03/24/14**	**08/20/09**	**01/11/12**	**10/15/13**	**03/25/14**	**06/19/14**	**09/25/14**	**11/05/14**	**06/24/15**	**12/17/15**
Parameter																						
Volatile Organic Compounds:	CAS#																					
1,1-Dichloroethane	75-34-3	5	<5.0	<5.0	<5.0	<25	<25	<1.0	<0.38	<0.70	<0.70	<0.5	<25	<5.0	<5.0	<100	<1.0	<20	<20	<7.6	<7.0	<14
1,1-Dichloroethene	75-35-4	5	<5.0	<5.0	<5.0	<25	<25	<1.0	<0.29	<0.14	<0.14	<0.5	<25	**5.5**	1.6 J	<100	1.7	<20	<20	<5.8	1.9 J	<2.8
1,2,3-Trichlorobenzene	87-61-6	5	<5.0	NA	NA	NA	NA	NA	NA	<0.70	<0.70	NA	NA	<5.0	NA	NA	NA	NA	NA	NA	<7.0	<14
1,2,4-Trichlorobenzene	120-82-1	5	<5.0	NA	NA	NA	NA	NA	NA	<0.70	<0.70	NA	NA	<5.0	NA	NA	NA	NA	NA	NA	<7.0	<14
1,2-Dichloroethane	107-06-2	0.6	**22**	**17**	**16**	**24** J	<25	**1.3**	**0.64** J	**5.4**	**14**	**16**	**22** J	**13**	**9**	<100	**7.8**	**6.6** J	**7.6** J	<4.2	**3.6** J	<2.6
cis-1,2-Dichloroethene	156-59-2	5	**8.4**	**6.5**	**12**	**110**	<25	1.9	1.7	4.5	**6.8**	**12**	**100**	**10**	**780** D	**380**	**2200** D	**930**	**1100**	**1100**	**780**	**1000** j
trans-1,2-Dichloroethene	156-60-5	5	<5.0	1.3 J	4.2 J	<25	<25	**5.8**	**5.5**	**9.4**	**21**	4.4 J	<25	<5.0	**9.1**	<100	**41**	<20	<20	**18** J	**22** J	**37** J j
2-Butanone (MEK)	78-93-3	50 GV	<5.0	<5.0	<5.0	<250	**1400**	**190**	12	<1.9	<1.9	<5.0	<250	<5.0	<5.0	**260**	46	**190** J	**770**	37 J	20 J	<39
Acetone	67-64-1	50 GV	<50.0	<5.0	<5.0	<250	**370** J	**270**	**51**	2.4 J	2.0 J	<5.0	<250	<50.0	**200**	<100	9.8 J	**81** J	**480**	<60	19 J	<29
Benzene	71-43-2	1	**2.6** J	**1.3** J	**1.2** J	<25	<25	**1.6**	**1.7**	**2.2**	**1.9**	**1.2** J	<25	**11**	**4** J	<100	**2.7**	<20	<20	<8.2	**3.2** J	<3.2
n-Butylbenzene	104-51-8	5	<5.0	<5.0	<5.0	<25	<25	<1.0	<0.64	NA	NA	<5.0	<25	<5.0	<5.0	<100	<1.0	<20	<20	<13	NA	NA
sec-Butylbenzene	135-98-8	5	1.2 J	<5.0	<5.0	<25	<25	<1.0	<0.75	NA	NA	<5.0	<25	<5.0	<5.0	<100	<1.0	<20	<20	<15	NA	NA
tert-Butylbenzene	98-06-6	5	<5.0	<5.0	<5.0	<25	<25	<1.0	<0.81	NA	NA	<5.0	<25	<5.0	<5.0	<100	<1.0	<20	<20	<16	NA	NA
Carbon disulfide	75-15-0	---	<5.0	NA	NA	<25	NA	NA	NA	<1.0	<1.0	NA	NA	<5.0	NA	NA	NA	NA	NA	NA	<10	<20
Ethylbenzene	100-41-4	5	<5.0	<5.0	<5.0	<25	<25	<1.0	<0.74	<0.70	<0.70	<5.0	<25	<5.0	<5.0	<100	<1.0	<20	<20	<15	<7.0	<14
Hexachlorobutadiene	87-68-3	0.5	<5.0	NA	NA	<25	NA	NA	NA	NA	NA	NA	NA	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5	1.5 J	NA	NA	<25	NA	NA	NA	<0.70	<0.70	NA	NA	<5.0	NA	NA	NA	NA	NA	NA	<7.0	<14
Methyl tert-butyl ether (MTBE)	1634-04-4	10 GV	**14**	**31**	**42**	**34**	**25**	**33**	**25**	**16**	**14**	**43**	**36**	2.1 J	1.6 J	<100	<1.0	<20	<20	<3.2	<7.0	<14
n-Propylbenzene	103-65-1	5	4.4 J	<5.0	<5.0	<25	<25	<1.0	<0.69	NA	NA	<5.0	<25	<5.0	<5.0	<100	<1.0	<20	<20	<14	NA	NA
Tetrachloroethene	127-18-4	5	**120**	**97**	**62**	**14** J	<25	2.1	0.88 J	0.69	<0.18	**60**	**21** J	**9700** D	**4300** D	**3100**	**1500** D	**880**	**720**	**94**	**750**	**110** j
Trichloroethene	79-01-6	5	**110**	**92**	**89**	**29**	<25	2.5	**5.5**	1.2	0.33 J	**88**	**34**	**450** DJ	**1600** D	**1000**	**240** D	**310**	**350**	**160**	**420**	**600** j
Toluene	108-88-3	5	<5.0	<5.0	<5.0	<25	<25	<1.0	<0.51	<0.70	<0.70	<5.0	<25	<5.0	<5.0	<100	<1.0	<20	<20	<10	<7.0	<14
Vinyl chloride	75-01-4	2	<5.0	<5.0	<5.0	<25	<25	<1.0	<0.9	1.8	**6.5**	<5.0	<25	<5.0	1.2 J	**28** J	**200** D	**250**	**390**	**320**	**230** j	<1.4

Notes:

BOLD Indicates exceedance of groundwater standard
* Groundwater Standards are obtained from Title 6 Part 703.5, and Guidance Values are obtained from NYSDEC TOGS (1.1.1) "Ambient Water Quality Standards and Guidance Values".
< Indicates the parameter was not detected at the laboratory detection limit shown.
NA Not Analyzed.
--- No standard or not applicable.

[1], [2] DUP-1 samples collected from monitoring well location GZ-22D.
[3] DUP-1 samples collected from offsite monitoring well location OSMW-4.
[4] DUP-1 samples collected from monitoring well location GZ-21D.
[5] DUP-1 samples collected from monitoring well location OSMW-4.
[6] DUP-1 samples collected from monitoring well location OSMW-3
[7] DUP-1 samples collected from monitoring well location OSMW-4.
[8] DUP-1 samples collected from monitoring well location B6-OWD

Laboratory Qualifiers:

D Indicates the undiluted analysis exceeded the equipment calibration range. The concentration shown is obtained from a diluted analysis.
J Indicates the concentration shown is an estimated value because the compound was detected below the reporting limit.
j Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method.

Table 1
Summary of Groundwater Analytical Data Results to Title 6 Part 703.5 Groundwater Standards and NYSDEC TOGS 1.1.1 Guidance Values
441 and 442 Waverly Avenue
Volatile Organic Compounds
Site #C360108

Location			**Offsite Monitoring Wells**																			
Well ID		**Water Quality Standard***	**OSMW-3**								**DUP-1 [6]**	**OSMW-4**								**DUP-1 [7]**	**DUP-1 [3]**	**DUP-1 [5]**
Unit		**µg/L**	**µg/L**								**µg/L**	**µg/L**								**µg/L**	**µg/L**	**µg/L**
Sample Date			**01/10/12**	**10/16/13**	**03/24/14**	**06/19/14**	**09/24/14**	**11/05/14**	**06/24/15**	**12/17/15**	**11/05/14**	**01/10/12**	**10/16/13**	**03/25/14**	**06/18/14**	**09/24/14**	**11/05/14**	**06/24/15**	**12/17/15**	**06/24/15**	**01/10/12**	**09/24/14**
Parameter																						
Volatile Organic Compounds	CAS#																					
1,1-Dichloroethane	75-34-3	5	<5.0	<80	<1.0	<20	<20	<19	<14	<28	<0.38	<5.0	<5.0	<25	<25	<1.0	<0.38	<0.70	<0.70	<0.70	<5.0	<1.0
1,1-Dichloroethene	75-35-4	5	<5.0	<80	<1.0	<20	<20	<15	<2.8	<5.7	1.4	<5.0	<5.0	<25	<25	<1.0	<0.29	<0.14	<0.14	<0.14	<5.0	<1.0
1,2,3-Trichlorobenzene	87-61-6	5	NA	NA	NA	NA	NA	NA	<14	<28	NA	NA	NA	NA	NA	NA	NA	<0.70	<0.70	<0.70	NA	NA
1,2,4-Trichlorobenzene	120-82-1	5	NA	NA	NA	NA	NA	NA	<14	<28	NA	NA	NA	NA	NA	NA	NA	<0.70	<0.70	<0.70	NA	NA
1,2-Dichloroethane	107-06-2	0.6	**4.4** J	<80	**4.7**	<20	<20	<11	<2.6	<5.3	**3.5**	**1.1** J	<5.0	<25	<25	<1.0	<0.21	<0.13	<0.13	<0.13	**1.1** J	<1.0
cis-1,2-Dichloroethene	156-59-2	5	**14**	**31** J	**46**	**100**	**220**	**210**	**180**	**120** j	**210** D	**29**	3.8 J	<25	<25	**6.2**	**6.0**	1.2 J	<0.70	1.2 J	**29**	**5.2**
trans-1,2-Dichloroethene	156-60-5	5	1.7 J	<80	3.7	<20	**28**	<45	**25** J	<28	**26**	**6.9**	1.0 J	<25	<25	<1.0	<0.9	<0.70	<0.70	<0.70	**7.2**	<1.0
2-Butanone (MEK)	78-93-3	50 GV	<5.0	<5.0	<10	<200	<200	<66	46 J	<78	<1.3	<5.0	<5.0	<250	<250	<1.0	<1.3	<1.9	<1.9	<1.9	<5.0	<10
Acetone	67-64-1	50 GV	<5.0	<80	<10	<200	<200	<150	39 J	<58	<3.0	<5.0	<5.0	<250	<250	3.2 J	<3.0	<1.5	<1.5	<1.5	<5.0	3.0 J
Benzene	71-43-2	1	<5.0	<80	1	<20	<20	<21	<3.2	<6.4	**1.6**	**45**	<5.0	<25	<25	**2.8**	0.86 J	<0.16	0.38 J j	<0.16	**47**	**2.9**
n-Butylbenzene	104-51-8	5	<5.0	<80	<1.0	<20	<20	<32	NA	NA	<0.64	<5.0	<5.0	<25	<25	<1.0	<0.64	NA	NA	NA	<5.0	<1.0
sec-Butylbenzene	135-98-8	5	<5.0	<80	<1.0	<20	<20	<38	NA	NA	<0.75	1.5 J	<5.0	<25	<25	<1.0	<0.75	NA	NA	NA	1.5 J	<1.0
tert-Butylbenzene	98-06-6	5	<5.0	<80	<1.0	<20	<20	<41	NA	NA	<0.81	<5.0	<5.0	<25	<25	<1.0	<0.81	NA	NA	NA	<5.0	<1.0
Carbon disulfide	75-15-0	---	NA	NA	NA	NA	NA	NA	<20	<40	NA	NA	NA	NA	NA	NA	NA	<1.0	<1.0	<1.0	NA	NA
Ethylbenzene	100-41-4	5	<5.0	<80	<1.0	<20	<20	<37	<14	<28	<0.74	<5.0	<5.0	<25	<25	<1.0	<0.74	<0.70	<0.70	<0.70	<5.0	<1.0
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5	NA	NA	NA	NA	NA	NA	<14	<28	<14	NA	NA	NA	NA	NA	NA	<0.70	<0.70	<0.70	NA	NA
Methyl tert-butyl ether (MTBE)	1634-04-4	10 GV	<5.0	<80	0.4 J	<20	<20	<8.0	<14	<28	0.48 J	0.78 J	<5.0	<25	<25	0.57 J	0.59 J	<0.70	<0.70	<0.70	<5.0	0.63 J
n-Propylbenzene	103-65-1	5	<5.0	<80	<1.0	<20	<20	<35	NA	NA	<0.69	1.6 J	<5.0	<25	<25	<1.0	<0.69	NA	NA	NA	1.7 J	<1.0
Tetrachloroethene	127-18-4	5	**760** D	**1900**	**2400** D	**1300**	**2600** D	**3400**	**1500**	**1200** j	**2900** D	**790** D	**11**	<25	<25	3.4	3.2	0.44 J	<0.18	0.48 J	**730** D	3.4
Trichloroethene	79-01-6	5	**120**	**280**	**330** D	**440**	**1000**	**1000**	**610**	**480** j	**900** D	**230** D	**15**	<25	<25	**6.0**	4.5	1.0	0.56	1.1 j	**220** D	**5.5**
Toluene	108-88-3	5	<5.0	<80	<1.0	<20	<20	<26	<14	<28	<0.51	<5.0	<5.0	<25	<25	<1.0	<0.51	<0.70	<0.70	<0.70	0.67 J	<1.0
Vinyl chloride	75-01-4	2	<5.0	<80	<1.0	<20	<20	<45	<1.4 j	<2.8	<0.9	<5.0	<5.0	<25	<25	<1.0	<0.9	<0.07 j	<0.07	<0.07 j	<5.0	<1.0

Notes:

BOLD Indicates exceedance of groundwater standard
* Groundwater Standards are obtained from Title 6 Part 703.5, and Guidance Values are obtained from NYSDEC TOGS (1.1.1) "Ambient Water Quality Standards and Guidance Values".
< Indicates the parameter was not detected at the laboratory detection limit shown.
NA Not Analyzed.
--- No standard or not applicable.

[1], [2] DUP-1 samples collected from monitoring well location GZ-22D.
[3] DUP-1 samples collected from offsite monitoring well location OSMW-4.
[4] DUP-1 samples collected from monitoring well location GZ-21D.
[5] DUP-1 samples collected from monitoring well location OSMW-4.
[6] DUP-1 samples collected from monitoring well location OSMW-3
[7] DUP-1 samples collected from monitoring well location OSMW-4.

Laboratory Qualifiers:

D Indicates the undiluted analysis exceeded the equipment calibration range. The concentration shown is obtained from a diluted analysis.
J Indicates the concentration shown is an estimated value because the compound was detected below the reporting limit.
j Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method.

DAILY FIELD REPORTS

STERLING
Sterling Environmental Engineering, P.C.

DAILY FIELD REPORT

Project Name:	441/442 Waverly Avenue	**Project No.:**	28012
Client Name:	New Waverly Avenue Associates, LLC	**Date:**	December 16, 2015
Location:	441/442 Waverly Avenue, Mamaroneck, NY	**Weather:**	50°F, Clear
Inspector:	Cody Sargood (CS); Sterling Environmental Engineering, P.C.		

Work Description, Comments, Discussion, Problems, Instructions:

Conduct groundwater sampling of offsite monitoring wells OSMW-3 and OSMW-4 and four (4) existing onsite deep monitoring wells GZ-21D, GZ-22D, GZ-23D and B6-OWD.

11:15 AM: CS arrives onsite. CS calibrates and sets up equipment at B6-OWD.

12:05 AM: CS begins low flow sampling procedure at B6-OWD. Water is very clear with no odor observed.

12:25 PM: CS samples B6-OWD using a peristaltic pump. CS collects the December 2015 duplicate at B6-OWD.

12:58 PM: CS begins low flow sampling procedure at GZ-22D. Water is very clear with no odor observed.

1:15 PM: CS samples GZ-22D using a peristaltic pump.

1:53 PM: CS begins low flow sampling procedure at GZ-21D. Water is clear with a strong sulfur odor observed.

2:25 PM: CS samples GZ-21D using a peristaltic pump.

2:30 PM CS recalibrates and packs up equipment.

3:00 PM: CS finishes work for the day and departs site.

5:00 PM: Alpha Analytical Courier picks up samples for delivery to laboratory

Visitors (Name, Affiliation): _____

Signature: _____

STERLING
Sterling Environmental Engineering, P.C.

DAILY FIELD REPORT

Project Name:	441/442 Waverly Avenue	**Project No.:**	28012
Client Name:	New Waverly Avenue Associates, LLC	**Date:**	December 17, 2015
Location:	441/442 Waverly Avenue, Mamaroneck, NY	**Weather:**	50°F, Overcast
Inspector:	Cody Sargood (CS); Sterling Environmental Engineering, P.C.		

Work Description, Comments, Discussion, Problems, Instructions:

Conduct groundwater sampling of offsite monitoring wells OSMW-3 and OSMW-4 and four (4) existing onsite deep monitoring wells GZ-21D, GZ-22D, GZ-23D and B6-OWD.

7:45 AM: CS arrives onsite. CS calibrates and sets up equipment at OSMW-4.

8:45 AM: CS begins low flow sampling procedure at OSMW-4. Water is very clear with a slight petroleum/solvent odor.

9:00 AM: CS samples OSMW-4 using a peristaltic pump. CS also collects the MS/MSD QA/QC samples from OSMW-4.

9:45 AM: CS begins low flow sampling procedure at OSMW-3. Water is very clear with no odor observed.

10:00 AM: CS samples OSMW-3 using a peristaltic pump.

10:25 AM: CS begins low flow sampling procedure at GZ-23D. Water is cloudy with and a slight petroleum/solvent odor.

10:35 AM: CS samples GZ-23D using a peristaltic pump.

11:30 AM: CS recalibrates equipment and prepares samples for drop-off at the Albany Alpha Analytical distribution center.

11:40 AM: CS departs site.

Visitors (Name, Affiliation): _____

Signature: _____

PURGING/SAMPLING DATA SHEETS

Purging / Sampling Data Sheet

Project: 28012 Site: 441 Waverly Avenue, Mamaroneck, NY
Well No.: GZ-21D Date: December 16, 2015

Well Depth: 44.21 feet Screen Length: 40-50 feet below grade surface
Well Diameter: 2 inch Casing Type: PVC

Sampling Device: Peristaltic Pump Tubing Type: LDPE
Static Water Level: 8.92 feet Measuring Point: Top of PVC

Sampling Personnel: Cody Sargood, Sterling Environmental Engineering, P.C.

Time	Pump Rate (L/min.)	Depth to Water (ft.)	Drawdown (< 0.33ft)	pH (± 0.1)	Temp. (ºC) (± 3%)	SC (mS/cm^c) (± 3%)	ORP (mV) (± 10)	DO (mg/L) (± 10%)	Turbidity (nTu)(± 10%)
13:53	0.150	8.92	0.00	7.66	15.17	0.282	-145.8	1.27	8.98
13:56	0.150	8.93	0.01	7.45	15.16	0.281	-156.1	1.16	10.15
13:59	0.125	8.92	+0.01	7.23	15.20	0.281	-161.2	0.98	5.04
14:02	0.150	8.92	0.00	7.25	15.28	0.361	-172.8	0.78	6.15
14:05	0.150	8.97	0.05	7.28	15.30	0.852	-255.8	0.73	12.32
14:08	0.150	8.95	+0.02	7.30	15.35	1.125	-283.3	0.79	8.01
14:11	0.150	8.96	0.01	7.33	15.39	1.359	-303.4	0.83	6.24
14:14	0.150	8.96	0.00	7.36	15.45	1.348	-308.3	0.80	4.05
14:17	0.150	8.96	0.00	7.37	15.47	1.354	-309.2	0.79	7.19
		Total:	0.04						

Sample obtained at 14:25 pm; clear, strong sulfur odor observed.

Purging / Sampling Data Sheet

Project:	28012	Site:	442 Waverly Avenue, Mamaroneck, NY
Well No.:	GZ-22D	Date:	December 16, 2015
Well Depth:	45.35 feet	Screen Length:	40-45 feet below grade surface
Well Diameter:	2 inch	Casing Type:	PVC
Sampling Device:	Peristaltic Pump	Tubing Type:	LDPE
Static Water Level:	9.93 feet	Measuring Point:	Top of PVC

Sampling Personnel: Cody Sargood, Sterling Environmental Engineering, P.C.

Time	Pump Rate (L/min.)	Depth to Water (ft.)	Drawdown (< 0.33ft)	pH (± 0.1)	Temp. (°C) (± 3%)	SC (mS/cm^c) (± 3%)	ORP (mV) (± 10)	DO (mg/L) (± 10%)	Turbidity (nTu)(± 10%)
12:58	0.125	9.93	0.00	7.43	14.71	0.859	-154.0	4.70	4.70
13:01	0.125	9.94	0.01	7.45	14.90	0.844	-155.6	1.09	3.25
13:04	0.140	9.94	0.00	7.52	14.99	0.841	-160.3	0.77	5.01
13:07	0.140	9.94	0.00	7.52	15.01	0.837	-162.9	0.75	4.33
13:10	0.125	9.94	0.00	7.53	15.03	0.837	-162.2	0.68	2.53
		Total:	0.01						

Sample obtained at 13:15 pm; Very clear, no odor observed.

Purging / Sampling Data Sheet

Project:	28012	Site:	441 Waverly Avenue, Mamaroneck, NY
Well No.:	B6-OWD	Date:	December 16, 2015
Well Depth:	35.3 feet	Screen Length:	N/A
Well Diameter:	2 inch	Casing Type:	PVC
Sampling Device:	Peristaltic Pump	Tubing Type:	LDPE
Static Water Level:	9.81 feet	Measuring Point:	Top of PVC

Sampling Personnel: Cody Sargood, Sterling Environmental Engineering, P.C.

Time	Pump Rate (L/min.)	Depth to Water (ft.)	Drawdown (< 0.33ft)	pH (± 0.1)	Temp. (°C) (± 3%)	SC (mS/cm^{c}) (± 3%)	ORP (mV) (± 10)	DO (mg/L) (± 10%)	Turbidity (nTu)(± 10%)
12:05	0.150	9.81	0.00	6.82	15.83	1.515	227.5	4.74	1.50
12:08	0.150	9.81	0.00	6.85	15.94	1.513	225.9	1.48	3.81
12:12	0.150	9.82	0.01	6.82	16.02	1.512	218.3	1.86	0.83
12:15	0.150	9.81	+0.01	6.85	16.04	1.511	214.2	1.92	1.02
12:18	0.150	9.81	0.00	6.84	16.06	1.511	210.0	1.89	0.52
12:21	0.150	9.81	0.00	6.83	16.07	1.511	210.9	1.98	0.98
		Total:	0.00						

Sample obtained at 12:25 pm; Very clear, no odor observed. December 2015 Duplicate sample was collected at this location.

Purging / Sampling Data Sheet

Project: 28012
Site: 442 Waverly Avenue, Mamaroneck, NY
Well No.: GZ-23D
Date: December 17, 2015

Well Depth: 46.95 feet
Screen Length: 40-45 feet below grade surface
Well Diameter: 2 inches
Casing Type: PVC

Sampling Device: Peristaltic Pump
Tubing Type: LDPE
Static Water Level: 10.78 feet
Measuring Point: Top of PVC

Sampling Personnel: Cody Sargood, Sterling Environmental Engineering, P.C.

Time	Pump Rate (L/min.)	*Depth to Water (ft.)	Drawdown (< 0.33ft)	pH (± 0.1)	Temp. (°C) (± 3%)	SC (mS/cm^c) (± 3%)	ORP (mV) (± 10)	DO (mg/L) (± 10%)	Turbidity (nTu)(± 10%)
10:25	0.100	10.78	0.00	7.38	15.04	2.799	-183.1	5.23	45.7
10:28	0.100	10.75	+0.03	7.40	15.09	2.802	-177.5	1.43	40.5
10:31	0.100	10.75	0.00	7.39	15.10	2.802	-176.5	1.41	38.9
10:34	0.100	10.75	0.00	7.41	15.11	2.801	-178.2	1.42	35.8
		Total:	+0.03						

*Well is slanted. True depth to water is not known at this monitoring well.

Sample obtained at 10:35 am; Cloudy, slight petroleum/solvent odor observed.

Purging / Sampling Data Sheet

Project: 28012
Site: 442 Waverly Avenue, Mamaroneck, NY
Well No.: OSMW-3
Date: December 17, 2015

Well Depth: 39.4 feet
Screen Length: 29 – 39 feet below grade surface
Well Diameter: 1 inch
Casing Type: PVC

Sampling Device: Perestaltic Pump
Tubing Type: LDPE
Static Water Level: 9.80 feet
Measuring Point: Top of PVC

Sampling Personnel: Cody Sargood, Sterling Environmental Engineering, P.C.

Time	Pump Rate (L/min.)	Depth to Water (ft.)	Drawdown (< 0.33ft)	pH (± 0.1)	Temp. (°C) (± 3%)	SC (mS/cm[c]) (± 3%)	ORP (mV) (± 10)	DO (mg/L) (± 10%)	Turbidity (nTu)(± 10%)
9:40	0.175	9.80	0.00	7.53	15.87	0.782	-46.9	5.25	1.50
9:43	0.150	9.81	0.01	7.43	15.83	0.826	-65.9	2.23	4.55
9:46	0.150	9.80	+0.01	7.41	15.79	0.850	-78.2	1.75	2.72
9:49	0.150	9.80	0.00	7.40	15.76	0.864	-81.7	1.55	2.09
9:52	0.150	9.81	0.01	7.42	15.74	0.870	-81.5	1.47	0.98
9:55	0.150	9.81	0.00	7.42	15.69	0.874	-81.8	1.45	3.25
		Total:	0.01						

Sample obtained at 10:00 am; Very clear, no odor observed.

Purging / Sampling Data Sheet

Project: 28012 Site: 442 Waverly Avenue, Mamaroneck, NY
Well No.: OSMW-4 Date: December 17, 2015

Well Depth: 35.62 feet Screen Length: 25-35 feet below grade surface
Well Diameter: 1 inch Casing Type: PVC

Sampling Device: Peristaltic Pump Tubing Type: LDPE
Static Water Level: 10.02 feet Measuring Point: Top of PVC

Sampling Personnel: Cody Sargood, Sterling Environmental Engineering, P.C.

Time	Pump Rate (L/min.)	Depth to Water (ft.)	Drawdown (< 0.33ft)	pH (± 0.1)	Temp. (^oC) (± 3%)	SC (mS/cm^c) (± 3%)	ORP (mV) (± 10)	DO (mg/L) (± 10%)	Turbidity (nTu)(± 10%)
8:45	0.160	10.02	0.00	7.52	15.31	1.296	-109.1	4.25	4.91
8:48	0.150	10.03	0.01	7.23	15.38	1.278	-93.5	1.92	6.05
8:51	0.150	10.03	0.00	7.23	15.48	1.274	-85.6	1.85	5.56
8:54	0.150	10.03	0.00	7.22	15.55	1.273	-80.9	1.85	3.59
8:57	0.150	10.04	0.01	7.25	15.58	1.273	-79.0	1.83	5.11

Total: 0.02

Sample obtained at 9:00 am; Very clear, slight petroleum/solvent odor observed. The MS/MSD QA/QC samples were collected at this location.

DATA USABILITY SUMMARY REPORTS
(DUSR)

ALPHA GEOSCIENCE

Geology
Hydrology
Remediation
Water Supply

Data Usability Summary Report
for Alpha Analytical Labs
Lab Number: L1533339

3 Ground Water Samples and 1 Field Duplicate
Collected December 16, 2015

Prepared by: Donald Anné
January 5, 2016

The data package contained the documentation as required by NYSDEC ASP. The proper chain of custody procedures were followed by the samplers. All information appeared legible and complete. The data pack contained the results volatile analyses for 3 ground water samples and 1 field duplicate.

The overall performances of the analyses are acceptable. Alpha Analytical Labs did fulfill the requirements of the analytical method.

The data are mostly acceptable with some minor issues that are identified in the accompanying data validation reviews. The following data were no flagged as either estimated (J) or unusable (R); therefore, all data are considered usable. Detailed information on data quality is included in the data validation reviews.

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www.alphageoscience.com

ALPHA GEOSCIENCE

Geology
Hydrology
Remediation
Water Supply

QA/QC Review of Method 8260B Volatiles
Data for Alpha Analytical Labs
Lab Number: L1533339

3 Ground Water Samples and 1 Field Duplicate
Collected December 16, 2015

Prepared by: Donald Anné
January 5, 2016

Holding Times: Samples were analyzed within USEPA SW-846 holding times.

GC/MS Tuning and Mass Calibration: The BFB tuning criteria were within control limits.

Initial Calibration: The SPCCs and CCCs were within method 8260B criteria.

The average RRFs for target compounds were above the allowable minimum (0.0005 for 1,4-dioxane, 0.010 for all other compounds) and the %RSDs were below the allowable maximum (30%), as required.

Continuing Calibration: The SPCCs and CCCs were within method 8260B criteria.

The RRFs for target compounds were above the allowable minimum (0.0005 for 1,4-dioxane, 0.010 for all other compounds), as required.

The %Ds for 1,4-dioxane, 4-methyl-2-pentanone, and 2-hexanone were above the allowable maximum (25%) on 12-24-15 (1224A02.D). Positive results for these compounds should be considered estimated (J) in associated samples.

Blanks: The analysis of method the blank reported target compounds as not detected.

Internal Standard Area Summary: The internal standard areas and retention times were within control limits.

Surrogate Recovery: The surrogate recoveries were within control limits for the ground water samples.

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Method 8260B Volatiles Data
Lab Number: L1533339

Matrix Spike/Matrix Spike Duplicate: The relative percent differences for target compounds were below the allowable maximum and the percent recoveries were within QC limits for aqueous MS/MSD sample OS-MW4. (This data is from lab number L1533556.)

Laboratory Control Sample: The percent recoveries for target compounds were within QC limits, but the relative percent difference for chloromethane was above the allowable maximum for aqueous samples WG853044-1LCS and WG853044-2LCSD. Positive results for chloromethane should be considered estimated (J) in associated aqueous samples.

Field Duplicates: The relative percent differences for tetrachloroethene and trichloroethene were below the allowable maximum (20%) for aqueous field duplicate pair B6-OWD/DUPLICATE (attached table), as required.

Compound ID: Checked compounds were within GC/MS quantitation limits. The mass spectra for detected compounds contained the primary and secondary ions, as outlined in the method.

Data Validation Qualifiers Used in the QA/QC Reviews for USEPA Region II

U	=	Not detected. The associated number indicates the approximate sample concentration necessary to be detected significantly greater than the level of the highest associated blank.
R	=	Unreliable result; data is rejected or unusable. Analyte may or may not be present in the sample. Supporting data or information is necessary to confirm the result.
N	=	Tentative identification. Analyte is considered present. Special methods may be needed to confirm its presence or absence during future sampling efforts.
J	=	Analyte is present. Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method.
UJ	=	Not detected, quantitation limit may be inaccurate or imprecise.

Note: These qualifiers are used for data validation purposes. The data validation qualifiers may differ from the qualifiers that the laboratory assigns to the data. Refer to the laboratory analytical report for the definitions of the laboratory qualifiers.

Data Validation Acronyms

AA	Atomic absorption, flame technique
BHC	Hexachlorocyclohexane
BFB	Bromofluorobenzene
CCB	Continuing calibration blank
CCC	Calibration check compound
CCV	Continuing calibration verification
CN	Cyanide
CRDL	Contract required detection limit
CRQL	Contract required quantitation limit
CVAA	Atomic adsorption, cold vapor technique
DCAA	2,4-Dichlophenylacetic acid
DCB	Decachlorobiphenyl
DFTPP	Decafluorotriphenyl phosphine
ECD	Electron capture detector
FAA	Atomic absorption, furnace technique
FID	Flame ionization detector
FNP	1-Fluoronaphthalene
GC	Gas chromatography
GC/MS	Gas chromatography/mass spectrometry
GPC	Gel permeation chromatography
ICB	Initial calibration blank
ICP	Inductively coupled plasma-atomic emission spectrometer
ICV	Initial calibration verification
IDL	Instrument detection limit
IS	Internal standard
LCS	Laboratory control sample
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate
MSA	Method of standard additions
MS/MSD	Matrix spike/matrix spike duplicate
PID	Photo ionization detector
PCB	Polychlorinated biphenyl
PCDD	Polychlorinated dibenzodioxins
PCDF	Polychlorinated dibenzofurans
QA	Quality assurance
QC	Quality control
RF	Response factor
RPD	Relative percent difference
RRF	Relative response factor
RRF(number)	Relative response factor at concentration of the number following
RT	Retention time
RRT	Relative retention time
SDG	Sample delivery group
SPCC	System performance check compound
TCX	Tetrachloro-m-xylene
%D	Percent difference
%R	Percent recovery
%RSD	Percent relative standard deviation

Volatiles

Calculations for Field Duplicate Relative Percent Difference (RPD)
SDG No. L1533339

S1= B6-OWD **S2=** DUPLICATE

Analyte	S1	S2	RPD (%)
tetrachloroethene	2.1	2.2	5%
benzene	**0.28**	**0.29**	NC
trichloroethene	1.4	1.4	0%
cis-1,2-dichloroethene	**1.1**	**1.2**	NC

* RPD is above the allowable maximum (20%)

All results are in ug/L

Bold numbers were values that below the CRQL or above the high standard.
ND - Not detected.
NC - Not calculated, both results must be within the linear range for valid RPDs to be calculated.

3A

LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY

WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs

SDG No.: L1533339 Matrix: Water

Lab Control Sample: WG853044-1LCS Injected: 12/24/15 13:45 Lab File ID: 1224A02.D

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC	QC. LIMITS REC.
Methylene chloride	10	NA	10.	101	70-130
1,1-Dichloroethane	10	NA	9.7	97	70-130
Chloroform	10	NA	10.	100	70-130
2-Chloroethylvinyl ether	10	NA	5.3	53*	70-130
Carbontetrachloride	10	NA	11.	108	63-132
1,2-Dichloropropane	10	NA	8.8	88	70-130
Chlorodibromomethane	10	NA	9.9	99	63-130
1,1,2-Trichloroethane	10	NA	10.	102	70-130
Tetrachloroethene	10	NA	10.	101	70-130
Chlorobenzene	10	NA	9.9	99	75-130
Trichlorofluoromethane	10	NA	12.	120	62-150
1,2-Dichloroethane	10	NA	10.	103	70-130
1,1,1-Trichloroethane	10	NA	10.	103	67-130
Bromodichloromethane	10	NA	9.9	99	67-130
trans-1,3-Dichloropropen	10	NA	8.9	89	70-130
cis-1,3-Dichloropropene	10	NA	8.5	85	70-130
1,1-Dichloropropene	10	NA	9.5	95	70-130
Bromoform	10	NA	9.9	99	54-136
1,1,2,2,-Tetrachloroetha	10	NA	9.5	95	67-130
Benzene	10	NA	9.4	94	70-130
Toluene	10	NA	9.7	97	70-130
Ethyl benzene	10	NA	10.	100	70-130
Chloromethane	10	NA	9.3	93	64-130
Bromomethane	10	NA	9.9	99	39-139
Vinyl chloride	10	NA	10.	102	55-140
Chloroethane	10	NA	11.	112	55-138
1,1,-Dichloroethene	10	NA	9.8	98	61-145
trans-1,2-Dichloroethene	10	NA	9.3	93	70-130
Trichloroethene	10	NA	10.	102	70-130
1,2-Dichlorobenzene	10	NA	9.7	97	70-130
1,3-Dichlorobenzene	10	NA	9.8	98	70-130
1,4-Dichlorobenzene	10	NA	9.8	98	70-130
Methyl tert butyl ether	10	NA	9.2	92	63-130
p/m xylene	20	NA	21.	107	70-130
o Xylene	20	NA	21.	104	70-130
cis-1,2-Dichloroethene	10	NA	9.2	92	70-130
Dibromomethane	10	NA	9.6	96	70-130
1,2,3-Trichloropropane	10	NA	10.	102	64-130
Acrylonitrile	10	NA	9.8	98	70-130
Diisopropyl Ether	10	NA	8.6	87	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

3A
LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY
WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs
SDG No.: L1533339 Matrix: Water
Lab Control Sample: WG853044-1LCS Injected: 12/24/15 13:45 Lab File ID: 1224A02.D

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC	QC. LIMITS REC.
tert-Butyl Alcohol	50	NA	55.	110	70-130
Styrene	20	NA	21.	107	70-130
Dichlorodifluoromethane	10	NA	10.	102	36-147
Acetone	10	NA	10.	105	58-148
Carbon disulfide	10	NA	9.7	97	51-130
2-Butanone	10	NA	10.	102	63-138
Vinyl acetate	10	NA	9.6	96	70-130
4-Methyl-2-pentanone	10	NA	7.7	77	59-130
2-Hexanone	10	NA	6.4	64	57-130
Acrolein	10	NA	7.8	78	40-160
Bromochloromethane	10	NA	10.	105	70-130
2,2-Dichloropropane	10	NA	10.	105	63-133
1,2-Dibromoethane	10	NA	9.8	98	70-130
1,3-Dichloropropane	10	NA	9.6	96	70-130
1,1,1,2-Tetrachloroethan	10	NA	10.	104	64-130
Bromobenzene	10	NA	9.6	96	70-130
n-Butylbenzene	10	NA	9.7	97	53-136
sec-Butylbenzene	10	NA	9.2	92	70-130
tert-Butylbenzene	10	NA	9.0	90	70-130
2-Chlorotoluene	10	NA	9.5	95	70-130
4-Chorotoluene	10	NA	9.4	94	70-130
1,2-Dibromo-3-chloroprop	10	NA	9.6	96	41-144
Hexachlorobutadiene	10	NA	10.	103	63-130
Isopropylbenzene	10	NA	8.7	87	70-130
p-Isopropyltoluene	10	NA	9.2	92	70-130
Naphthalene	10	NA	7.4	74	70-130
n-Propylbenzene	10	NA	9.4	94	69-130
1,2,3-Trichlorobenzene	10	NA	11.	107	70-130
1,2,4-Trichlorobenzene	10	NA	8.8	88	70-130
1,3,5-Trimethybenzene	10	NA	9.9	99	64-130
1,2,4-Trimethylbenzene	10	NA	9.4	94	70-130
Methyl Acetate	10	NA	9.6	97	70-130
Ethyl Acetate	10	NA	8.8	88	70-130
Cyclohexane	10	NA	9.0	90	70-130
Ethyl-Tert-Butyl-Ether	10	NA	9.1	91	70-130
Tertiary-Amyl Methyl Eth	10	NA	8.1	81	66-130
1,4-Dioxane	500	NA	660	132	56-162
Freon-113	10	NA	10.	105	70-130
p-Diethylbenzene	10	NA	9.0	90	70-130
4-Ethyltoluene	10	NA	9.7	97	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

3A

LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY

WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs

SDG No.: L1533339 Matrix: Water

Lab Control Sample: WG853044-1LCS Injected: 12/24/15 13:45 Lab File ID: 1224A02.D

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC	QC. LIMITS REC.
1,2,4,5-Tetramethylbenze	10	NA	8.2	82	70-130
Ethyl ether	10	NA	10.	105	59-134
trans-1,4-Dichloro-2-but	10	NA	8.9	89	70-130
Iodomethane	10	NA	6.1	NA 61*	70-130
Methyl cyclohexane	10	NA	9.5	95	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

3A

LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY

WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs
SDG No.: L1533339
Lab Control Sample: WG853044-1LCS
Lab Control Dup : WG853044-2LCSD

Matrix: Water
Injected: 12/24/15 13:45 Lab File ID: 1224A02.D
Injected: 12/24/15 14:09 Lab File ID: 1224A03.D

COMPOUND	SPIKE ADDED (ug/l)	LCSD CONCENTRATION (ug/l)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC.
Methylene chloride	10	10.	100	1	20	70-130
1,1-Dichloroethane	10	9.8	98	1	20	70-130
Chloroform	10	10.	100	0	20	70-130
2-Chloroethylvinyl ether	10	6.1	61 *	14	20	70-130
Carbontetrachloride	10	11.	107	1	20	63-132
1,2-Dichloropropane	10	9.1	91	3	20	70-130
Chlorodibromomethane	10	10.	104	5	20	63-130
1,1,2-Trichloroethane	10	11.	107	5	20	70-130
Tetrachloroethene	10	10.	104	3	20	70-130
Chlorobenzene	10	10.	101	2	20	75-130
Trichlorofluoromethane	10	12.	118	2	20	62-150
1,2-Dichloroethane	10	10.	104	1	20	70-130
1,1,1-Trichloroethane	10	10.	104	1	20	67-130
Bromodichloromethane	10	9.9	99	0	20	67-130
trans-1,3-Dichloropropen	10	9.4	94	5	20	70-130
cis-1,3-Dichloropropene	10	8.8	88	3	20	70-130
1,1-Dichloropropene	10	9.8	98	3	20	70-130
Bromoform	10	10.	106	7	20	54-136
1,1,2,2,-Tetrachloroetha	10	10.	102	7	20	67-130
Benzene	10	9.6	96	2	20	70-130
Toluene	10	9.9	99	2	20	70-130
Ethyl benzene	10	10.	102	2	20	70-130
Chloromethane	10	7.2	72	25 *	20	64-130
Bromomethane	10	10.	102	3	20	39-139
Vinyl chloride	10	10.	102	0	20	55-140
Chloroethane	10	10.	103	8	20	55-138
1,1,-Dichloroethene	10	10.	101	3	20	61-145
trans-1,2-Dichloroethene	10	9.6	96	3	20	70-130
Trichloroethene	10	10.	102	0	20	70-130
1,2-Dichlorobenzene	10	10.	101	4	20	70-130
1,3-Dichlorobenzene	10	10.	100	2	20	70-130
1,4-Dichlorobenzene	10	10.	100	2	20	70-130
Methyl tert butyl ether	10	10.	100	8	20	63-130
p/m xylene	20	22.	108	1	20	70-130
o Xylene	20	21.	106	2	20	70-130
cis-1,2-Dichloroethene	10	9.5	95	3	20	70-130
Dibromomethane	10	10.	102	6	20	70-130
1,2,3-Trichloropropane	10	11.	110	8	20	64-130
Acrylonitrile	10	11.	106	8	20	70-130
Diisopropyl Ether	10	9.1	91	4	20	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

3A

LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY

WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs

SDG No.: L1533339 Matrix: Water

Lab Control Sample: WG853044-1LCS Injected: 12/24/15 13:45 Lab File ID: 1224A02.D

Lab Control Dup : WG853044-2LCSD Injected: 12/24/15 14:09 Lab File ID: 1224A03.D

COMPOUND	SPIKE ADDED (ug/l)	LCSD CONCENTRATION (ug/l)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC.
tert-Butyl Alcohol	50	60.	120	9	20	70-130
Styrene	20	22.	109	2	20	70-130
Dichlorodifluoromethane	10	10.	103	1	20	36-147
Acetone	10	12.	115	9	20	58-148
Carbon disulfide	10	9.8	98	1	20	51-130
2-Butanone	10	11.	111	8	20	63-138
Vinyl acetate	10	10.	102	6	20	70-130
4-Methyl-2-pentanone	10	8.5	85	10	20	59-130
2-Hexanone	10	7.1	71	10	20	57-130
Acrolein	10	8.9	89	13	20	40-160
Bromochloromethane	10	11.	107	2	20	70-130
2,2-Dichloropropane	10	11.	107	2	20	63-133
1,2-Dibromoethane	10	10.	105	7	20	70-130
1,3-Dichloropropane	10	10.	101	5	20	70-130
1,1,1,2-Tetrachloroethan	10	11.	106	2	20	64-130
Bromobenzene	10	9.9	99	3	20	70-130
n-Butylbenzene	10	9.9	99	2	20	53-136
sec-Butylbenzene	10	9.4	94	2	20	70-130
tert-Butylbenzene	10	9.3	93	3	20	70-130
2-Chlorotoluene	10	9.7	97	2	20	70-130
4-Chorotoluene	10	9.7	97	3	20	70-130
1,2-Dibromo-3-chloroprop	10	10.	101	5	20	41-144
Hexachlorobutadiene	10	10.	103	0	20	63-130
Isopropylbenzene	10	9.1	91	4	20	70-130
p-Isopropyltoluene	10	9.4	94	2	20	70-130
Naphthalene	10	8.4	84	13	20	70-130
n-Propylbenzene	10	9.6	97	3	20	69-130
1,2,3-Trichlorobenzene	10	12.	117	9	20	70-130
1,2,4-Trichlorobenzene	10	9.2	93	6	20	70-130
1,3,5-Trimethybenzene	10	10.	102	3	20	64-130
1,2,4-Trimethylbenzene	10	9.5	96	2	20	70-130
Methyl Acetate	10	10.	105	8	20	70-130
Ethyl Acetate	10	9.8	98	11	20	70-130
Cyclohexane	10	9.2	92	2	20	70-130
Ethyl-Tert-Butyl-Ether	10	9.7	97	6	20	70-130
Tertiary-Amyl Methyl Eth	10	8.7	87	7	20	66-130
1,4-Dioxane	500	700	140	6	20	56-162
Freon-113	10	11.	107	2	20	70-130
p-Diethylbenzene	10	9.1	91	1	20	70-130
4-Ethyltoluene	10	9.9	99	2	20	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

3A
LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY
WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs
SDG No.: L1533339 Matrix: Water
Lab Control Sample: WG853044-1LCS Injected: 12/24/15 13:45 Lab File ID: 1224A02.D
Lab Control Dup : WG853044-2LCSD Injected: 12/24/15 14:09 Lab File ID: 1224A03.D

COMPOUND	SPIKE ADDED (ug/l)	LCSD CONCENTRATION (ug/l)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC.
1,2,4,5-Tetramethylbenze	10	8.4	84	2	20	70-130
Ethyl ether	10	11.	108	3	20	59-134
trans-1,4-Dichloro-2-but	10	9.5	95	7	20	70-130
Iodomethane	10	6.8	68 *	11	20	70-130
Methyl cyclohexane	10	9.6	96	1	20	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

Alpha Analytical Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: Voa105.i Injection Date: 24-DEC-2015 13:45
Lab File ID: 1224A02.D Init. Cal. Date(s): 13-DEC-2015 14-DEC-2015
Analysis Type: WATER Init. Cal. Times: 21:40 00:22
Lab Sample ID: Quant Type: ISTD
Method: \\Orgserv2\ff\chem\GCMSVOA\Voa105.i\151224.b\liq8260B.m

COMPOUND	RRF / AMOUNT	RF100	CCAL RRF100	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 dichlorodifluoromethane	0.21993	0.22361	0.22361	0.050	1.67353	20.00000	Averaged	
2 chloromethane	0.24243	0.22547	0.22547	0.050	-6.99373	20.00000	Averaged	
3 vinyl chloride	0.23556	0.23927	0.23927	0.050	1.57433	20.00000	Averaged	
4 bromomethane	0.11162	0.11101	0.11101	0.050	-0.54097	20.00000	Averaged	
5 chloroethane	0.11839	0.13254	0.13254	0.050	11.94755	20.00000	Averaged	
6 trichlorofluoromethane	0.32463	0.38856	0.38856	0.050	19.69208	20.00000	Averaged	
7 ethyl ether	0.08945	0.09401	0.09401	0.050	5.09528	20.00000	Averaged	
8 1,1,-dichloroethene	0.18818	0.18510	0.18510	0.050	-1.63722	20.00000	Averaged	
9 carbon disulfide	0.57003	0.55132	0.55132	0.050	-3.28191	20.00000	Averaged	
10 freon-113	0.19868	0.20809	0.20809	0.050	4.74101	20.00000	Averaged	
186 iodomethane	100	61.33653	0.11606	0.050	NA 38.66347	20.00000	Wt Linear	<-
12 acrolein	0.02212	0.01731	0.01731	0.050	NA 21.76784	20.00000	Averaged	<-
11 methylene chloride	0.19761	0.19901	0.19901	0.050	0.70485	20.00000	Averaged	
13 acetone	0.02483	0.02618	0.02618	0.050	5.44921	20.00000	Averaged	<-
14 trans-1,2-dichloroethene	0.19747	0.18370	0.18370	0.050	-6.97540	20.00000	Averaged	
15 Methyl Acetate	0.07597	0.07338	0.07338	0.050	-3.40948	20.00000	Averaged	
16 methyl tert butyl ether	0.34768	0.32066	0.32066	0.050	-7.77205	20.00000	Averaged	
17 Tert-Butyl Alcohol	500	551	0.00644	0.050	10.22695	20.00000	Wt Linear	<-
18 Diisopropyl Ether	0.61289	0.53068	0.53068	0.050	-13.41277	20.00000	Averaged	
19 1,1-dichloroethane	0.39335	0.38081	0.38081	0.050	-3.18771	20.00000	Averaged	
20 halothane	0.14656	0.14890	0.14890	0.050	1.60304	20.00000	Averaged	
21 acrylonitrile	0.04201	0.04100	0.04100	0.050	-2.39990	20.00000	Averaged	<-
22 Ethyl-Tert-Butyl-Ether	0.47849	0.43423	0.43423	0.050	-9.24979	20.00000	Averaged	
23 vinyl acetate	0.33429	0.32131	0.32131	0.050	-3.88184	20.00000	Averaged	
24 cis-1,2-dichloroethene	0.21031	0.19336	0.19336	0.050	-8.05734	20.00000	Averaged	
25 2,2-dichloropropane	0.28224	0.29698	0.29698	0.050	5.22585	20.00000	Averaged	
26 Cyclohexane	0.40796	0.36736	0.36736	0.050	-9.95211	20.00000	Averaged	
27 bromochloromethane	0.09421	0.09929	0.09929	0.050	5.38831	20.00000	Averaged	
28 chloroform	0.37181	0.37315	0.37315	0.050	0.36115	20.00000	Averaged	
29 Ethyl Acetate	0.10309	0.09127	0.09127	0.050	-11.46187	20.00000	Averaged	
30 carbontetrachloride	0.30285	0.32784	0.32784	0.050	8.25237	20.00000	Averaged	
$ 32 dibromofluoromethane	0.27630	0.29100	0.29100	0.050	5.32183	20.00000	Averaged	
31 tetrahydrofuran	0.03086	0.02767	0.02767	0.050	-10.33426	20.00000	Averaged	<-
33 1,1,1-trichloroethane	0.33947	0.35059	0.35059	0.050	3.27813	20.00000	Averaged	
34 2-butanone	0.04106	0.04169	0.04169	0.050	1.51202	20.00000	Averaged	<-
35 1,1-dichloropropene	0.26454	0.25103	0.25103	0.050	-5.10682	20.00000	Averaged	
36 benzene	0.78632	0.74302	0.74302	0.050	-5.50741	20.00000	Averaged	
37 Tertiary-Amyl Methyl Ether	100	80.98639	0.30811	0.050	-19.01361	20.00000	Wt Linear	
$ 38 1,2-dichloroethane-d4	0.27855	0.30939	0.30939	0.050	11.07175	20.00000	Averaged	
39 1,2-dichloroethane	0.24861	0.25590	0.25590	0.050	2.93228	20.00000	Averaged	
42 methyl cyclohexane	0.33892	0.32168	0.32168	0.050	-5.08681	20.00000	Averaged	
43 trichloroethene	0.22394	0.22866	0.22866	0.050	2.10563	20.00000	Averaged	

Alpha Analytical Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: Voa105.i
Lab File ID: 1224A02.D
Analysis Type: WATER
Lab Sample ID:
Method: \\Orgserv2\ff\chem\GCMSVOA\Voa105.i\151224.b\liq8260B.m

Injection Date: 24-DEC-2015 13:45
Init. Cal. Date(s): 13-DEC-2015 14-DEC-2015
Init. Cal. Times: 21:40 00:22
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF100	CCAL RRF100	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
45 dibromomethane	0.09845	0.09491	0.09491	0.050	-3.60187	20.00000	Averaged
46 1,2-dichloropropane	0.20296	0.17951	0.17951	0.050	-11.55265	20.00000	Averaged
47 bromodichloromethane	0.25528	0.25197	0.25197	0.050	-1.29983	20.00000	Averaged
49 1,4-Dioxane	0.00055	0.00073	0.00073	0.050	32.07873	20.00000	Averaged <-
51 2-Chloroethylvinyl ether	100	52.69556	0.04079	0.050	-47.30444	20.00000	Wt Linear <-
52 cis-1,3-dichloropropene	100	84.97884	0.25084	0.050	-15.02116	20.00000	Wt Linear
$ 53 toluene-d8	1.29049	1.29108	1.29108	0.050	0.04548	20.00000	Averaged
54 toluene	0.67154	0.65424	0.65424	0.050	-2.57677	20.00000	Averaged
56 4-methyl-2-pentanone	100	76.67089	0.02494	0.050	-23.32911	20.00000	Wt Linear <-
55 tetrachloroethene	0.29523	0.29791	0.29791	0.050	0.90780	20.00000	Averaged
57 trans-1,3-dichloropropene	100	88.85794	0.27897	0.050	-11.14206	20.00000	Wt Linear
59 ethyl-methacrylate	100	71.30790	0.14942	0.050	-28.69210	20.00000	Wt Linear <-
60 1,1,2-trichloroethane	0.14914	0.15168	0.15168	0.050	1.70454	20.00000	Averaged
61 chlorodibromomethane	0.22152	0.22026	0.22026	0.050	-0.56642	20.00000	Averaged
62 1,3-dichloropropane	0.30766	0.29520	0.29520	0.050	-4.04951	20.00000	Averaged
64 1,2-dibromoethane	0.16698	0.16290	0.16290	0.050	-2.44729	20.00000	Averaged
65 2-hexanone	100	63.65054	0.04670	0.050	-36.34946	20.00000	Wt Linear <-
67 chlorobenzene	0.76157	0.75633	0.75633	0.050	-0.68754	20.00000	Averaged
68 ethyl benzene	1.26537	1.26157	1.26157	0.050	-0.30031	20.00000	Averaged
69 1,1,1,2-tetrachloroethane	0.25615	0.26769	0.26769	0.050	4.50465	20.00000	Averaged
70 p/m xylene	0.46660	0.49978	0.49978	0.050	7.11162	20.00000	Averaged
71 o xylene	200	209	0.44058	0.050	4.45185	20.00000	Wt Linear
72 styrene	200	214	0.73440	0.050	7.21654	20.00000	Wt Linear
73 bromoform	0.21927	0.21718	0.21718	0.050	-0.95112	20.00000	Averaged
74 isopropylbenzene	100	87.45514	2.10349	0.050	-12.54486	20.00000	Wt Linear
$ 75 4-bromofluorobenzene	0.94518	0.85123	0.85123	0.050	-9.93973	20.00000	Averaged
76 bromobenzene	0.55653	0.53603	0.53603	0.050	-3.68486	20.00000	Averaged
77 n-propylbenzene	2.76000	2.60323	2.60323	0.050	-5.68039	20.00000	Averaged
78 1,4-dichloro-2-butane	0.60722	0.56356	0.56356	0.050	-7.19018	20.00000	Averaged
79 1,1,2,2,-tetrachloroethane	0.34740	0.33079	0.33079	0.050	-4.78013	20.00000	Averaged
80 4-ethyltoluene	2.24656	2.17936	2.17936	0.050	-2.99147	20.00000	Averaged
82 2-chlorotoluene	1.74469	1.65491	1.65491	0.050	-5.14575	20.00000	Averaged
83 1,3,5-trimethybenzene	1.92399	1.91259	1.91259	0.050	-0.59270	20.00000	Averaged
84 1,2,3-trichloropropane	0.28266	0.28800	0.28800	0.050	1.88773	20.00000	Averaged
85 trans-1,4-dichloro-2-butene	0.08805	0.07837	0.07837	0.050	-10.98853	20.00000	Averaged
87 4-chorotoluene	1.71611	1.62228	1.62228	0.050	-5.46768	20.00000	Averaged
88 tert-butylbenzene	100	90.38281	1.54705	0.050	-9.61719	20.00000	Wt Linear
89 1,2,4-trimethylbenzene	100	93.97941	1.86167	0.050	-6.02059	20.00000	Wt Linear
90 sec-butylbenzene	100	92.28795	2.24000	0.050	-7.71205	20.00000	Wt Linear
91 p-isopropyltoluene	100	92.35410	1.90323	0.050	-7.64590	20.00000	Wt Linear
92 1,3-dichlorobenzene	1.10070	1.07662	1.07662	0.050	-2.18802	20.00000	Averaged
94 1,4-dichlorobenzene	1.11506	1.08855	1.08855	0.050	-2.37744	20.00000	Averaged
95 p-Diethylbenzene	1.11493	1.00116	1.00116	0.050	-10.20405	20.00000	Averaged

Alpha Analytical Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: Voa105.i Injection Date: 24-DEC-2015 13:45
Lab File ID: 1224A02.D Init. Cal. Date(s): 13-DEC-2015 14-DEC-2015
Analysis Type: WATER Init. Cal. Times: 21:40 00:22
Lab Sample ID: Quant Type: ISTD
Method: \\Orgserv2\ff\chem\GCMSVOA\Voa105.i\151224.b\liq8260B.m

COMPOUND	RRF / AMOUNT	RF100	CCAL RRF100	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
96 n-butylbenzene	1.68512	1.63822	1.63822	0.050	-2.78308	20.00000	Averaged	
97 1,2-dichlorobenzene	0.93322	0.90569	0.90569	0.050	-2.94935	20.00000	Averaged	
98 1,2,4,5-tetramethylbenzene	100	81.86947	1.35219	0.050	-18.13053	20.00000	Wt Linear	
99 1,2-dibromo-3-chloropropane	0.14227	0.13638	0.13638	0.050	-4.14132	20.00000	Averaged	
100 1,3,5-trichlorobenzene	0.61381	0.63059	0.63059	0.050	2.73307	20.00000	Averaged	
101 hexachlorobutadiene	0.21130	0.21752	0.21752	0.050	2.94114	20.00000	Averaged	
102 1,2,4-trichlorobenzene	100	87.94686	0.44379	0.050	-12.05314	20.00000	Wt Linear	
103 naphthalene	100	73.82577	0.54462	0.050	-26.17423	20.00000	Wt Linear	<-
104 1,2,3-trichlorobenzene	0.31042	0.33318	0.33318	0.050	7.33273	20.00000	Averaged	

Average %D / Drift Results.

Calculated Average %D/Drift = 7.97492
Maximun Average %D/Drift = 20.00000
* Passed Average %D/Drift Test.

ALPHA GEOSCIENCE

Geology
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Water Supply

Data Usability Summary Report
for Alpha Analytical Labs
Lab Number: L1533556

3 Ground Water Samples and 1 Trip Blank
Collected December 17, 2015

Prepared by: Donald Anné
January 5, 2016

The data package contained the documentation as required by NYSDEC ASP. The proper chain of custody procedures were followed by the samplers. All information appeared legible and complete. The data pack contained the results volatile analyses for 3 ground water samples and 1 trip blank.

The overall performances of the analyses are acceptable. Alpha Analytical Labs did fulfill the requirements of the analytical method.

The data are mostly acceptable with some minor issues that are identified in the accompanying data validation reviews. The following data were flagged:

- Positive volatile results for tetrachloroethene, trichloroethene, and cis-1,2-dichloroethene were flagged as estimated (J) in sample OS-MW3 because the relative percent differences (RPDs) for these compounds were above the allowable maximum in the associated aqueous LCS/LCSD.

- Positive volatile results for benzene, trichloroethene, cyclohexane, and methyl cyclohexane were flagged as estimated (J) in sample OS-MW4 because the RPDs for these compounds were above the allowable maximum in the associated aqueous LCS/LCSD.

- Positive volatile results for tetrachloroethene, trichloroethene, trans-1,2-dichloroethene, and cis-1,2-dichloroethene were flagged as estimated (J) in sample GZ-23D because the RPDs for these compounds were above the allowable maximum in the associated aqueous LCS/LCSD.

- The positive volatile result for acetone was flagged as estimated (J) in the trip blank because the RPD for acetone was above the allowable maximum in the associated aqueous LCS/LCSD.

All data are considered usable, with estimated (J) data associated with a higher level of quantitative uncertainty. Detailed information on data quality is included in the data validation reviews.

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ALPHA GEOSCIENCE

Geology
Hydrology
Remediation
Water Supply

QA/QC Review of Method 8260B Volatiles
Data for Alpha Analytical Labs
Lab Number: L1533556

3 Ground Water Samples and 1 Trip Blank
Collected December 17, 2015

Prepared by: Donald Anné
January 5, 2016

Holding Times: Samples were analyzed within USEPA SW-846 holding times.

GC/MS Tuning and Mass Calibration: The BFB tuning criteria were within control limits.

Initial Calibration: The SPCCs and CCCs were within method 8260B criteria.

The average RRFs for target compounds were above the allowable minimum (0.0005 for 1,4-dioxane, 0.010 for all other compounds) and the %RSDs were below the allowable maximum (30%), as required.

Continuing Calibration: The SPCCs and CCCs were within method 8260B criteria.

The RRFs for target compounds were above the allowable minimum (0.0005 for 1,4-dioxane, 0.010 for all other compounds), as required.

The %Ds for bromomethane, 1,4-dioxane, 2-hexanone, m/p-xylene, o-xylene, and styrene were above the allowable maximum (25%) on 12-29-15 (1229A01.D). Positive results for these compounds should be considered estimated (J) in associated samples.

Blanks: The analysis of method the blank reported target compounds as not detected. The trip blank contained a trace of acetone (2.3 ug/L). Positive results for acetone that are less than 10 times the highest blank level should be reported as not detected (U) in associated samples.

Internal Standard Area Summary: The internal standard areas and retention times were within control limits.

Surrogate Recovery: The surrogate recoveries were within control limits for the ground water samples.

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www.alphageoscience.com

Matrix Spike/Matrix Spike Duplicate: The relative percent differences for target compounds were below the allowable maximum and the percent recoveries were within QC limits for aqueous MS/MSD sample OS-MW4.

Laboratory Control Sample: The percent recoveries for target compounds were within QC limits, but the relative percent differences for 46 target compounds (circled on the attached form 3A) were above the allowable maximum for aqueous samples WG853711-1LCS and WG853711-2LCSD. Positive results for these compounds should be considered estimated (J) in associated aqueous samples.

Compound ID: Checked compounds were within GC/MS quantitation limits. The mass spectra for detected compounds contained the primary and secondary ions, as outlined in the method.

Data Validation Qualifiers Used in the QA/QC Reviews for USEPA Region II

U	=	Not detected. The associated number indicates the approximate sample concentration necessary to be detected significantly greater than the level of the highest associated blank.
R	=	Unreliable result; data is rejected or unusable. Analyte may or may not be present in the sample. Supporting data or information is necessary to confirm the result.
N	=	Tentative identification. Analyte is considered present. Special methods may be needed to confirm its presence or absence during future sampling efforts.
J	=	Analyte is present. Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method.
UJ	=	Not detected, quantitation limit may be inaccurate or imprecise.

Note: These qualifiers are used for data validation purposes. The data validation qualifiers may differ from the qualifiers that the laboratory assigns to the data. Refer to the laboratory analytical report for the definitions of the laboratory qualifiers.

Data Validation Acronyms

AA	Atomic absorption, flame technique
BHC	Hexachlorocyclohexane
BFB	Bromofluorobenzene
CCB	Continuing calibration blank
CCC	Calibration check compound
CCV	Continuing calibration verification
CN	Cyanide
CRDL	Contract required detection limit
CRQL	Contract required quantitation limit
CVAA	Atomic adsorption, cold vapor technique
DCAA	2,4-Dichlophenylacetic acid
DCB	Decachlorobiphenyl
DFTPP	Decafluorotriphenyl phosphine
ECD	Electron capture detector
FAA	Atomic absorption, furnace technique
FID	Flame ionization detector
FNP	1-Fluoronaphthalene
GC	Gas chromatography
GC/MS	Gas chromatography/mass spectrometry
GPC	Gel permeation chromatography
ICB	Initial calibration blank
ICP	Inductively coupled plasma-atomic emission spectrometer
ICV	Initial calibration verification
IDL	Instrument detection limit
IS	Internal standard
LCS	Laboratory control sample
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate
MSA	Method of standard additions
MS/MSD	Matrix spike/matrix spike duplicate
PID	Photo ionization detector
PCB	Polychlorinated biphenyl
PCDD	Polychlorinated dibenzodioxins
PCDF	Polychlorinated dibenzofurans
QA	Quality assurance
QC	Quality control
RF	Response factor
RPD	Relative percent difference
RRF	Relative response factor
RRF(number)	Relative response factor at concentration of the number following
RT	Retention time
RRT	Relative retention time
SDG	Sample delivery group
SPCC	System performance check compound
TCX	Tetrachloro-m-xylene
%D	Percent difference
%R	Percent recovery
%RSD	Percent relative standard deviation

3A

LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY
WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs
SDG No.: L1533556 Matrix: Water
Lab Control Sample: WG853711-1LCS Injected: 12/29/15 06:04 Lab File ID: 1229A01.D

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC	QC. LIMITS REC.
Methylene chloride	10	NA	11.	106	70-130
1,1-Dichloroethane	10	NA	10.	105	70-130
Chloroform	10	NA	10.	104	70-130
2-Chloroethylvinyl ether	10	NA	7.7	77	70-130
Carbontetrachloride	10	NA	10.	105	63-132
1,2-Dichloropropane	10	NA	10.	102	70-130
Chlorodibromomethane	10	NA	10.	105	63-130
1,1,2-Trichloroethane	10	NA	10.	105	70-130
Tetrachloroethene	10	NA	12.	117	70-130
Chlorobenzene	10	NA	11.	113	75-130
Trichlorofluoromethane	10	NA	10.	100	62-150
1,2-Dichloroethane	10	NA	9.6	96	70-130
1,1,1-Trichloroethane	10	NA	11.	106	67-130
Bromodichloromethane	10	NA	10.	102	67-130
trans-1,3-Dichloropropen	10	NA	9.8	98	70-130
cis-1,3-Dichloropropene	10	NA	9.8	98	70-130
1,1-Dichloropropene	10	NA	11.	108	70-130
Bromoform	10	NA	10.	106	54-136
1,1,2,2,-Tetrachloroetha	10	NA	10.	100	67-130
Benzene	10	NA	11.	109	70-130
Toluene	10	NA	11.	114	70-130
Ethyl benzene	10	NA	12.	116	70-130
Chloromethane	10	NA	10.	103	64-130
Bromomethane	10	NA	12.	124	39-139
Vinyl chloride	10	NA	10.	106	55-140
Chloroethane	10	NA	12.	116	55-138
1,1,-Dichloroethene	10	NA	10.	104	61-145
trans-1,2-Dichloroethene	10	NA	11.	110	70-130
Trichloroethene	10	NA	11.	107	70-130
1,2-Dichlorobenzene	10	NA	11.	113	70-130
1,3-Dichlorobenzene	10	NA	12.	117	70-130
1,4-Dichlorobenzene	10	NA	11.	114	70-130
Methyl tert butyl ether	10	NA	9.8	98	63-130
p/m xylene	20	NA	25.	123	70-130
o Xylene	20	NA	24.	122	70-130
cis-1,2-Dichloroethene	10	NA	11.	109	70-130
Dibromomethane	10	NA	9.7	97	70-130
1,2,3-Trichloropropane	10	NA	10.	103	64-130
Acrylonitrile	10	NA	9.6	96	70-130
Diisopropyl Ether	10	NA	10.	100	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

3A

LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY
WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs
SDG No.: L1533556 Matrix: Water
Lab Control Sample: WG853711-1LCS Injected: 12/29/15 06:04 Lab File ID: 1229A01.D

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC	QC. LIMITS REC.
tert-Butyl Alcohol	50	NA	47.	95	70-130
Styrene	20	NA	24.	121	70-130
Dichlorodifluoromethane	10	NA	9.1	91	36-147
Acetone	10	NA	10.	101	58-148
Carbon disulfide	10	NA	10.	104	51-130
2-Butanone	10	NA	9.2	92	63-138
Vinyl acetate	10	NA	9.6	97	70-130
4-Methyl-2-pentanone	10	NA	8.2	82	59-130
2-Hexanone	10	NA	6.7	67	57-130
Acrolein	10	NA	8.7	87	40-160
Bromochloromethane	10	NA	11.	106	70-130
2,2-Dichloropropane	10	NA	11.	112	63-133
1,2-Dibromoethane	10	NA	10.	104	70-130
1,3-Dichloropropane	10	NA	10.	104	70-130
1,1,1,2-Tetrachloroethan	10	NA	11.	112	64-130
Bromobenzene	10	NA	12.	115	70-130
n-Butylbenzene	10	NA	12.	122	53-136
sec-Butylbenzene	10	NA	12.	116	70-130
tert-Butylbenzene	10	NA	12.	116	70-130
2-Chlorotoluene	10	NA	12.	122	70-130
4-Chorotoluene	10	NA	12.	119	70-130
1,2-Dibromo-3-chloroprop	10	NA	10.	104	41-144
Hexachlorobutadiene	10	NA	13.	130	63-130
Isopropylbenzene	10	NA	12.	115	70-130
p-Isopropyltoluene	10	NA	12.	118	70-130
Naphthalene	10	NA	7.6	76	70-130
n-Propylbenzene	10	NA	12.	121	69-130
1,2,3-Trichlorobenzene	10	NA	9.8	98	70-130
1,2,4-Trichlorobenzene	10	NA	9.9	99	70-130
1,3,5-Trimethybenzene	10	NA	12.	124	64-130
1,2,4-Trimethylbenzene	10	NA	12.	116	70-130
Methyl Acetate	10	NA	8.9	89	70-130
Ethyl Acetate	10	NA	8.7	87	70-130
Cyclohexane	10	NA	9.6	96	70-130
Ethyl-Tert-Butyl-Ether	10	NA	10.	100	70-130
Tertiary-Amyl Methyl Eth	10	NA	8.9	89	66-130
1,4-Dioxane	500	NA	730	146	56-162
Freon-113	10	NA	9.8	98	70-130
p-Diethylbenzene	10	NA	12.	117	70-130
4-Ethyltoluene	10	NA	12.	124	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

3A

LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY

WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs

SDG No.: L1533556 Matrix: Water

Lab Control Sample: WG853711-1LCS Injected: 12/29/15 06:04 Lab File ID: 1229A01.D

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC	QC. LIMITS REC.
1,2,4,5-Tetramethylbenze	10	NA	11.	106	70-130
Ethyl ether	10	NA	10.	100	59-134
trans-1,4-Dichloro-2-but	10	NA	9.1	91	70-130
Iodomethane	10	NA	3.4	34*	70-130
Methyl cyclohexane	10	NA	10.	104	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

3A

LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY

WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs

SDG No.: L1533556 Matrix: Water

Lab Control Sample: WG853711-1LCS Injected: 12/29/15 06:04 Lab File ID: 1229A01.D

Lab Control Dup : WG853711-2LCSD Injected: 12/29/15 06:27 Lab File ID: 1229A02.D

COMPOUND	SPIKE ADDED (ug/l)	LCSD CONCENTRATION (ug/l)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC.
Methylene chloride	10	8.6	86	21 *	20	70-130
1,1-Dichloroethane	10	8.3	83	23 *	20	70-130
Chloroform	10	8.4	84	21 *	20	70-130
2-Chloroethylvinyl ether	10	5.0	50 *	43 *	20	70-130
Carbontetrachloride	10	8.2	82	25 *	20	63-132
1,2-Dichloropropane	10	8.3	83	21 *	20	70-130
Chlorodibromomethane	10	8.5	85	21 *	20	63-130
1,1,2-Trichloroethane	10	8.7	87	19	20	70-130
Tetrachloroethene	10	9.2	92	24 *	20	70-130
Chlorobenzene	10	9.1	91	22 *	20	75-130
Trichlorofluoromethane	10	7.9	79	23 *	20	62-150
1,2-Dichloroethane	10	7.8	78	21 *	20	70-130
1,1,1-Trichloroethane	10	8.3	83	24 *	20	67-130
Bromodichloromethane	10	8.2	82	22 *	20	67-130
trans-1,3-Dichloropropen	10	7.9	79	21 *	20	70-130
cis-1,3-Dichloropropene	10	7.8	78	23 *	20	70-130
1,1-Dichloropropene	10	8.5	85	24 *	20	70-130
Bromoform	10	8.5	85	22 *	20	54-136
1,1,2,2,-Tetrachloroetha	10	8.2	82	20	20	67-130
Benzene	10	8.7	87	22 *	20	70-130
Toluene	10	9.1	91	22 *	20	70-130
Ethyl benzene	10	9.2	92	23 *	20	70-130
Chloromethane	10	7.6	76	30 *	20	64-130
Bromomethane	10	9.1	92	30 *	20	39-139
Vinyl chloride	10	8.2	82	26 *	20	55-140
Chloroethane	10	8.8	88	27 *	20	55-138
1,1,-Dichloroethene	10	8.3	83	22 *	20	61-145
trans-1,2-Dichloroethene	10	8.6	86	24 *	20	70-130
Trichloroethene	10	8.5	85	23 *	20	70-130
1,2-Dichlorobenzene	10	9.0	91	22 *	20	70-130
1,3-Dichlorobenzene	10	9.3	93	23 *	20	70-130
1,4-Dichlorobenzene	10	9.1	91	22 *	20	70-130
Methyl tert butyl ether	10	7.9	79	21 *	20	63-130
p/m xylene	20	20.	98	23 *	20	70-130
o Xylene	20	19.	97	23 *	20	70-130
cis-1,2-Dichloroethene	10	8.7	87	22 *	20	70-130
Dibromomethane	10	7.9	79	20	20	70-130
1,2,3-Trichloropropane	10	8.7	87	17	20	64-130
Acrylonitrile	10	7.7	77	22 *	20	70-130
Diisopropyl Ether	10	8.0	80	22 *	20	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

3A

LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY

WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs

SDG No.: L1533556 Matrix: Water

Lab Control Sample: WG853711-1LCS Injected: 12/29/15 06:04 Lab File ID: 1229A01.D

Lab Control Dup : WG853711-2LCSD Injected: 12/29/15 06:27 Lab File ID: 1229A02.D

COMPOUND	SPIKE ADDED (ug/l)	LCSD CONCENTRATION (ug/l)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC.
tert-Butyl Alcohol	50	43.	87	9	20	70-130
Styrene	20	19.	97	22 *	20	70-130
Dichlorodifluoromethane	10	7.3	73	22 *	20	36-147
Acetone	10	8.2	82	21 *	20	58-148
Carbon disulfide	10	8.2	82	24 *	20	51-130
2-Butanone	10	7.6	76	19	20	63-138
Vinyl acetate	10	7.7	77	23 *	20	70-130
4-Methyl-2-pentanone	10	6.8	68	19	20	59-130
2-Hexanone	10	5.7	57	16	20	57-130
Acrolein	10	7.1	71	20	20	40-160
Bromochloromethane	10	8.5	85	22 *	20	70-130
2,2-Dichloropropane	10	8.8	88	24 *	20	63-133
1,2-Dibromoethane	10	8.6	86	19	20	70-130
1,3-Dichloropropane	10	8.5	85	20	20	70-130
1,1,1,2-Tetrachloroethan	10	9.0	90	22 *	20	64-130
Bromobenzene	10	9.2	92	22 *	20	70-130
n-Butylbenzene	10	9.3	93	27 *	20	53-136
sec-Butylbenzene	10	9.0	90	25 *	20	70-130
tert-Butylbenzene	10	9.0	90	25 *	20	70-130
2-Chlorotoluene	10	9.4	94	26 *	20	70-130
4-Chorotoluene	10	9.4	94	23 *	20	70-130
1,2-Dibromo-3-chloroprop	10	8.2	82	24 *	20	41-144
Hexachlorobutadiene	10	9.5	96	30 *	20	63-130
Isopropylbenzene	10	9.0	90	24 *	20	70-130
p-Isopropyltoluene	10	9.1	91	26 *	20	70-130
Naphthalene	10	6.4	64 *	17	20	70-130
n-Propylbenzene	10	9.3	93	26 *	20	69-130
1,2,3-Trichlorobenzene	10	8.5	85	14	20	70-130
1,2,4-Trichlorobenzene	10	7.8	79	22 *	20	70-130
1,3,5-Trimethybenzene	10	9.7	97	24 *	20	64-130
1,2,4-Trimethylbenzene	10	9.2	92	23 *	20	70-130
Methyl Acetate	10	7.3	73	20	20	70-130
Ethyl Acetate	10	7.2	72	19	20	70-130
Cyclohexane	10	7.6	76	23 *	20	70-130
Ethyl-Tert-Butyl-Ether	10	8.1	81	21 *	20	70-130
Tertiary-Amyl Methyl Eth	10	7.3	73	20	20	66-130
1,4-Dioxane	500	530	106	32 *	20	56-162
Freon-113	10	7.9	79	21 *	20	70-130
p-Diethylbenzene	10	8.8	88	28 *	20	70-130
4-Ethyltoluene	10	9.7	97	24 *	20	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

3A

LAB CONTROL/LAB CONTROL DUPLICATE SAMPLE RECOVERY

WATER VOLATILE ORGANICS

Lab Name: Alpha Analytical Labs

SDG No.: L1533556 Matrix: Water

Lab Control Sample: WG853711-1LCS Injected: 12/29/15 06:04 Lab File ID: 1229A01.D

Lab Control Dup : WG853711-2LCSD Injected: 12/29/15 06:27 Lab File ID: 1229A02.D

COMPOUND	SPIKE ADDED (ug/l)	LCSD CONCENTRATION (ug/l)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC.
1,2,4,5-Tetramethylbenze	10	8.2	82	NA 26 *	20	70-130
Ethyl ether	10	8.1	81	NA 21 *	20	59-134
trans-1,4-Dichloro-2-but	10	7.0	70	NA 26 *	20	70-130
Iodomethane	10	3.9	NA 39 *	14	20	70-130
Methyl cyclohexane	10	8.2	82	24 *	20	70-130

* Values outside of QC limits.

COMMENTS: _____

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FORM III NYTCL-8260

Alpha Analytical Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: Voa105.i
Lab File ID: 1229A01.D
Analysis Type: WATER
Lab Sample ID:
Method: \\Orgserv2\ff\chem\GCMSVOA\Voa105.i\151229.b\liq8260B.m

Injection Date: 29-DEC-2015 06:04
Init. Cal. Date(s): 13-DEC-2015 14-DEC-2015
Init. Cal. Times: 21:40 00:22
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF100	CCAL RRF100	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 dichlorodifluoromethane	0.21993	0.20096	0.20096	0.050	-8.62613	20.00000	Averaged
2 chloromethane	0.24243	0.24971	0.24971	0.050	3.00196	20.00000	Averaged
3 vinyl chloride	0.23556	0.24956	0.24956	0.050	5.94449	20.00000	Averaged
4 bromomethane	0.11162	0.13839	0.13839	0.050	23.98060	20.00000	Averaged <-
5 chloroethane	0.11839	0.13716	0.13716	0.050	15.84772	20.00000	Averaged
6 trichlorofluoromethane	0.32463	0.32473	0.32473	0.050	0.03085	20.00000	Averaged
7 ethyl ether	0.08945	0.08967	0.08967	0.050	0.24653	20.00000	Averaged
8 1,1,-dichloroethene	0.18818	0.19636	0.19636	0.050	4.34452	20.00000	Averaged
9 carbon disulfide	0.57003	0.59578	0.59578	0.050	4.51822	20.00000	Averaged
10 freon-113	0.19868	0.19373	0.19373	0.050	-2.49083	20.00000	Averaged
186 iodomethane	100	34.10686	0.05714	0.050	-65.89314	20.00000	Wt Linear <-
12 acrolein	0.02212	0.01933	0.01933	0.050	-12.63110	20.00000	Averaged <-
11 methylene chloride	0.19761	0.21043	0.21043	0.050	6.48854	20.00000	Averaged
13 acetone	0.02483	0.02520	0.02520	0.050	1.49531	20.00000	Averaged <-
14 trans-1,2-dichloroethene	0.19747	0.21633	0.21633	0.050	9.54804	20.00000	Averaged
15 Methyl Acetate	0.07597	0.06758	0.06758	0.050	-11.04745	20.00000	Averaged
16 methyl tert butyl ether	0.34768	0.33950	0.33950	0.050	-2.35140	20.00000	Averaged
17 Tert-Butyl Alcohol	500	473	0.00549	0.050	-5.33310	20.00000	Wt Linear <-
18 Diisopropyl Ether	0.61289	0.61077	0.61077	0.050	-0.34612	20.00000	Averaged
19 1,1-dichloroethane	0.39335	0.41335	0.41335	0.050	5.08331	20.00000	Averaged
20 halothane	0.14656	0.15853	0.15853	0.050	8.17137	20.00000	Averaged
21 acrylonitrile	0.04201	0.04050	0.04050	0.050	-3.59637	20.00000	Averaged <-
22 Ethyl-Tert-Butyl-Ether	0.47849	0.47746	0.47746	0.050	-0.21646	20.00000	Averaged
23 vinyl acetate	0.33429	0.32284	0.32284	0.050	-3.42278	20.00000	Averaged
24 cis-1,2-dichloroethene	0.21031	0.22867	0.22867	0.050	8.73284	20.00000	Averaged
25 2,2-dichloropropane	0.28224	0.31666	0.31666	0.050	12.19543	20.00000	Averaged
26 Cyclohexane	0.40796	0.39263	0.39263	0.050	-3.75778	20.00000	Averaged
27 bromochloromethane	0.09421	0.10036	0.10036	0.050	6.52495	20.00000	Averaged
28 chloroform	0.37181	0.38885	0.38885	0.050	4.58485	20.00000	Averaged
29 Ethyl Acetate	0.10309	0.09002	0.09002	0.050	-12.67417	20.00000	Averaged
30 carbontetrachloride	0.30285	0.31815	0.31815	0.050	5.05040	20.00000	Averaged
$ 32 dibromofluoromethane	0.27630	0.26211	0.26211	0.050	-5.13404	20.00000	Averaged
31 tetrahydrofuran	0.03086	0.03148	0.03148	0.050	2.01188	20.00000	Averaged <-
33 1,1,1-trichloroethane	0.33947	0.36044	0.36044	0.050	6.17984	20.00000	Averaged
34 2-butanone	0.04106	0.03799	0.03799	0.050	-7.48057	20.00000	Averaged <-
35 1,1-dichloropropene	0.26454	0.28657	0.28657	0.050	8.33089	20.00000	Averaged
36 benzene	0.78632	0.85704	0.85704	0.050	8.99309	20.00000	Averaged
37 Tertiary-Amyl Methyl Ether	100	88.61797	0.33860	0.050	-11.38203	20.00000	Wt Linear
$ 38 1,2-dichloroethane-d4	0.27855	0.25012	0.25012	0.050	-10.20603	20.00000	Averaged
39 1,2-dichloroethane	0.24861	0.23746	0.23746	0.050	-4.48419	20.00000	Averaged
42 methyl cyclohexane	0.33892	0.35442	0.35442	0.050	4.57381	20.00000	Averaged
43 trichloroethene	0.22394	0.24037	0.24037	0.050	7.33473	20.00000	Averaged

Alpha Analytical Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: Voa105.i
Lab File ID: 1229A01.D
Analysis Type: WATER
Lab Sample ID:
Method: \\Orgserv2\ff\chem\GCMSVOA\Voa105.i\151229.b\liq8260B.m

Injection Date: 29-DEC-2015 06:04
Init. Cal. Date(s): 13-DEC-2015 14-DEC-2015
Init. Cal. Times: 21:40 00:22
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF100	CCAL RRF100	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
45 dibromomethane	0.09845	0.09552	0.09552	0.050	-2.98096	20.00000	Averaged
46 1,2-dichloropropane	0.20296	0.20819	0.20819	0.050	2.57773	20.00000	Averaged
47 bromodichloromethane	0.25528	0.26105	0.26105	0.050	2.26017	20.00000	Averaged
49 1,4-Dioxane	0.00055	0.00080	0.00080	0.050	45.90042	20.00000	Averaged <-
51 2-Chloroethylvinyl ether	100	76.93456	0.06211	0.050	-23.06544	20.00000	Wt Linear <-
52 cis-1,3-dichloropropene	100	97.90371	0.29055	0.050	-2.09629	20.00000	Wt Linear
$ 53 toluene-d8	1.29049	1.32223	1.32223	0.050	2.45909	20.00000	Averaged
54 toluene	0.67154	0.76536	0.76536	0.050	13.97108	20.00000	Averaged
56 4-methyl-2-pentanone	100	81.52254	0.02680	0.050	-18.47746	20.00000	Wt Linear <-
55 tetrachloroethene	0.29523	0.34492	0.34492	0.050	16.83383	20.00000	Averaged
57 trans-1,3-dichloropropene	100	98.17703	0.30940	0.050	-1.82297	20.00000	Wt Linear
59 ethyl-methacrylate	100	83.95780	0.17815	0.050	-16.04220	20.00000	Wt Linear
60 1,1,2-trichloroethane	0.14914	0.15685	0.15685	0.050	5.16936	20.00000	Averaged
61 chlorodibromomethane	0.22152	0.23321	0.23321	0.050	5.27949	20.00000	Averaged
62 1,3-dichloropropane	0.30766	0.31934	0.31934	0.050	3.79756	20.00000	Averaged
64 1,2-dibromoethane	0.16698	0.17424	0.17424	0.050	4.34697	20.00000	Averaged
65 2-hexanone	100	67.45816	0.05195	0.050	-32.54184	20.00000	Wt Linear <-
67 chlorobenzene	0.76157	0.86004	0.86004	0.050	12.93002	20.00000	Averaged
68 ethyl benzene	1.26537	1.47431	1.47431	0.050	16.51300	20.00000	Averaged
69 1,1,1,2-tetrachloroethane	0.25615	0.28698	0.28698	0.050	12.03600	20.00000	Averaged
70 p/m xylene	0.46660	0.57593	0.57593	0.050	23.43080	20.00000	Averaged <-
71 o xylene	200	245	0.51727	0.050	22.45408	20.00000	Wt Linear <-
72 styrene	200	243	0.83228	0.050	21.39545	20.00000	Wt Linear <-
73 bromoform	0.21927	0.23178	0.23178	0.050	5.70678	20.00000	Averaged
74 isopropylbenzene	100	115	2.78611	0.050	15.01410	20.00000	Wt Linear
$ 75 4-bromofluorobenzene	0.94518	0.92135	0.92135	0.050	-2.52081	20.00000	Averaged
76 bromobenzene	0.55653	0.64259	0.64259	0.050	15.46333	20.00000	Averaged
77 n-propylbenzene	2.76000	3.33957	3.33957	0.050	20.99890	20.00000	Averaged <-
78 1,4-dichloro-2-butane	0.60722	0.61915	0.61915	0.050	1.96416	20.00000	Averaged
79 1,1,2,2,-tetrachloroethane	0.34740	0.34895	0.34895	0.050	0.44861	20.00000	Averaged
80 4-ethyltoluene	2.24656	2.79053	2.79053	0.050	24.21314	20.00000	Averaged <-
82 2-chlorotoluene	1.74469	2.12977	2.12977	0.050	22.07163	20.00000	Averaged <-
83 1,3,5-trimethybenzene	1.92399	2.38911	2.38911	0.050	24.17486	20.00000	Averaged <-
84 1,2,3-trichloropropane	0.28266	0.29247	0.29247	0.050	3.47084	20.00000	Averaged
85 trans-1,4-dichloro-2-butene	0.08805	0.08039	0.08039	0.050	-8.70021	20.00000	Averaged
87 4-chorotoluene	1.71611	2.04875	2.04875	0.050	19.38356	20.00000	Averaged
88 tert-butylbenzene	100	116	1.99776	0.050	16.00881	20.00000	Wt Linear
89 1,2,4-trimethylbenzene	100	116	2.31865	0.050	16.47510	20.00000	Wt Linear
90 sec-butylbenzene	100	116	2.83439	0.050	16.23391	20.00000	Wt Linear
91 p-isopropyltoluene	100	118	2.44433	0.050	17.88186	20.00000	Wt Linear
92 1,3-dichlorobenzene	1.10070	1.28746	1.28746	0.050	16.96755	20.00000	Averaged
94 1,4-dichlorobenzene	1.11506	1.27162	1.27162	0.050	14.04003	20.00000	Averaged
95 p-Diethylbenzene	1.11493	1.30800	1.30800	0.050	17.31656	20.00000	Averaged

Alpha Analytical Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: Voa105.i
Lab File ID: 1229A01.D
Analysis Type: WATER
Lab Sample ID:
Method: \\Orgserv2\ff\chem\GCMSVOA\Voa105.i\151229.b\liq8260B.m

Injection Date: 29-DEC-2015 06:04
Init. Cal. Date(s): 13-DEC-2015 14-DEC-2015
Init. Cal. Times: 21:40 00:22
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF100	CCAL RRF100	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
96 n-butylbenzene	1.68512	2.06035	2.06035	0.050	22.26737	20.00000	Averaged	<-
97 1,2-dichlorobenzene	0.93322	1.05419	1.05419	0.050	12.96318	20.00000	Averaged	
98 1,2,4,5-tetramethylbenzene	100	107	1.78454	0.050	6.51596	20.00000	Wt Linear	
99 1,2-dibromo-3-chloropropane	0.14227	0.14846	0.14846	0.050	4.34809	20.00000	Averaged	
100 1,3,5-trichlorobenzene	0.61381	0.73745	0.73745	0.050	20.14323	20.00000	Averaged	<-
101 hexachlorobutadiene	0.21130	0.27484	0.27484	0.050	30.06886	20.00000	Averaged	<-
102 1,2,4-trichlorobenzene	100	99	0.50284	0.050	-0.78984	20.00000	Wt Linear	
103 naphthalene	100	75.96377	0.56164	0.050	24.03623	20.00000	Wt Linear	<-
104 1,2,3-trichlorobenzene	0.31042	0.30559	0.30559	0.050	-1.55348	20.00000	Averaged	

Average %D / Drift Results.

Calculated Average %D/Drift = 11.11076
Maximun Average %D/Drift = 20.00000
* Passed Average %D/Drift Test.