GANNETT FLEMING ENGINEERS, P.C.
100 Crossways Park Drive West
Suite 300
Woodbury, NY 11797

Office: (516) 671-4140
Fax: (516) 921-1565
Internet:www.gannettfleming.com

January 29, 2014
Project # 53319.008

Ainura Doronova, Environmental Engineer 1
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 2
47-40 21st Street
Long Island City, NY 11101-5407

Re: Fourth Quarterly Post-Remediation Performance Monitoring Letter Report
NYSDEC Spill No. 1100020
Cooper Tank and Welding Corporation
225 Moore Street, Brooklyn, NY

Dear Ms. Doronova:

Gannett Fleming Engineers, P.C. (GF), on behalf of Cooper Tank and Welding Corporation (Cooper), has prepared this Final Quarterly Post-Remediation Performance Monitoring Letter Report (Final Report) to document and summarize the groundwater analytical results from the post-remedial groundwater performance monitoring program which followed completion of the remedial injection program (remedy) implemented at Cooper, 225 Moore Street, Brooklyn, New York (the "Site") from September 17 through September 28, 2012. This report evaluates the concentration trends of Constituents of Concern (COC's) at Cooper through four quarterly groundwater sampling events following completion of the remedy. Performance monitoring was conducted in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved Remedial Action Work Plan (RAWP) dated May, 2012 and the letter from NYSDEC, dated 8/13/2013, requesting two additional monitoring events. This Final Report follows submittal of the *11/14/2012 Status Report,* the *6/7/2013 Second Quarterly Post-Remediation Performance Monitoring Letter Report*, and the *10/22/2013 Third Quarterly Post-Remediation Performance Monitoring Letter Report* prepared by GF.

Background Summary- Baseline Analysis and Remedial Injection

Groundwater samples were collected from four on-site monitoring wells (MW-SE-7, MW-SE-9, MW-SE-11, and MW-SE-12) and off-site MW-SE-8 on the sidewalk to the east of Lot 47 and laboratory analyzed for the volatile organic compounds (VOC's) listed in Table 2 of CP-51 SCG, by USEPA Method 8260 to provide a baseline reference for determination of the effectiveness of the remedy. Baseline groundwater sampling was performed on August 7, 2012 and all analytical results from the baseline analysis were transmitted electronically on August 29, 2012 to NYSDEC. Reported analytical concentrations from the August 7, 2012 baseline groundwater sampling are summarized in Table 1.

The NYSDEC accepted remedial action consisted of the subsurface injection of 2,400 gallons of RegenOx solution and 1,150 gallons of ORC® Advanced solution via 45+ injection points that required extensive hand-clearing due to safety considerations in a complex and cumbersome utility grid. This remedy was successfully implemented to the best practicable extent and applied in accordance with manufacturer's specifications.

Figure 1 illustrates the injection program completed on Site, as detailed in the November 14, 2012 Status Report previously transmitted to NYSDEC.

Performance Monitoring Summary

As detailed in the RAWP, performance monitoring was conducted to evaluate the effectiveness of the remedial action described above. The first quarterly performance monitoring event was conducted on January 8, 2013, approximately three months after completion of the remedy. The second quarterly performance monitoring event was conducted on April 18, 2013, approximately six months after completion of the remedy. As per the 8/13/2013 request of NYSDEC, a third quarterly performance monitoring event was conducted on September 25, 2013, approximately eleven months after completion of the remedy, and a fourth quarterly performance monitoring event was conducted on December 20, 2013, approximately fourteen months after completion of the remedy. Groundwater samples during the 1/8/2013 and 4/18/2013 groundwater monitoring events were collected from the four on-site monitoring wells (MW-SE-7, MW-SE-9, MW-SE-11, and MW-SE-12) and off-site monitoring well MW-SE-8. As requested by NYSDEC, groundwater samples during the 9/25/2013 and 12/20/2013 groundwater monitoring events were collected from two on-site monitoring wells (MW-SE-7 and MW-SE-9) and off-site monitoring wells MW-SE-6 and MW-SE-8. Groundwater samples were laboratory analyzed for the VOC's listed in Table 2 of CP-51 SCG, by USEPA Method 8260. Free product had not been detected on or off-site in any of the historical investigations conducted by GF, was not detected during baseline sampling, and was not detected during the four post-remedial groundwater monitoring events.

Groundwater results from all four quarterly monitoring events and the baseline sampling event are presented and summarized in Table 1. Analytical results were compared to the concentrations of VOC's measured in the August 7, 2012 baseline analysis. The full laboratory report for the most recent 12/20/2013 event is included as Attachment 1. The full laboratory report from the previous sampling events was transmitted to NYSDEC during submittal of the Final Quarterly Groundwater Monitoring Letter Report dated June 7, 2013 and during submittal of the Third Quarterly Groundwater Monitoring Letter Report dated October 22, 2013.

Post-Remedial Data Evaluation

As detailed in Table 1 and plotted on attached Figures 2 through 4, post-remedial groundwater data supports the following conclusions:

- Groundwater analytical results from MW-SE-7 within the primary Area Of Concern (AOC-1) demonstrate a 100% reduction in Benzene (3,300 µg/L in August 2012 to non-detect in December 2013), 99% reduction in Benzene, Toluene, Ethylbenzene, and total Xylenes

(BTEX) compounds (11,290 µg/L in August 2012 to 49 µg/L in December 2013), and 99% reduction in total VOC's (14,746 µg/L in August 2012 to 106 µg/L in December 2013).

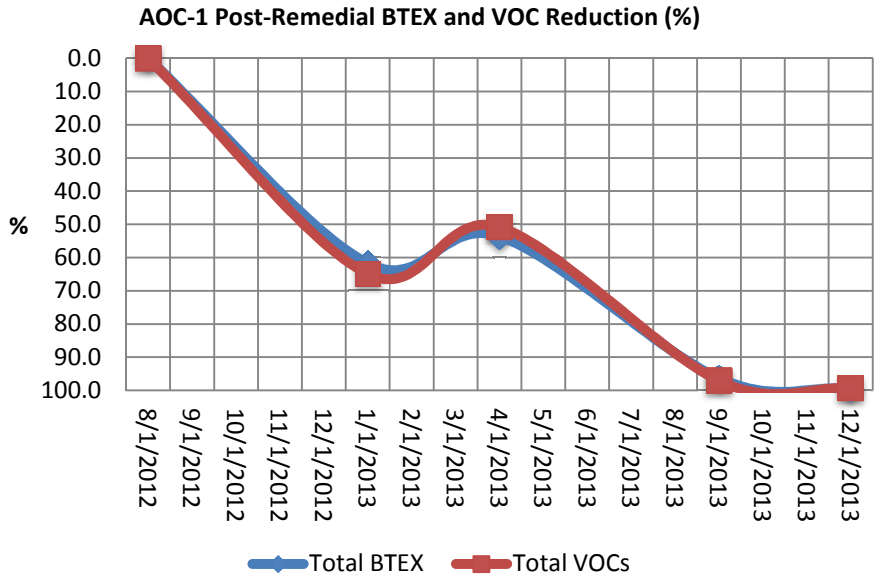


Figure 2.

Concentrations of Total BTEX and Total VOCs in AOC-1 plotted from 8/7/2012 through 12/20/2013 demonstrating a sharp and steady decreasing trend of COCs in AOC-1 since completion of the remedy.

- Groundwater analytical results from on-site monitoring wells required for sampling during the 9/25/2013 and 12/20/2013 monitoring events (MW-SE-7 and MW-SE-9) representing AOC-1 and AOC-2 demonstrate a 98% reduction in Benzene (3,440 µg/L in August 2012 to 75 µg/L in December 2013), 99% reduction in BTEX compounds (11,458 µg/L in August 2012 to 138.8 µg/L in December 2013), and 98% reduction in total measured VOC's (15,290 µg/L in August 2012 to 263.1 µg/L in December 2013).

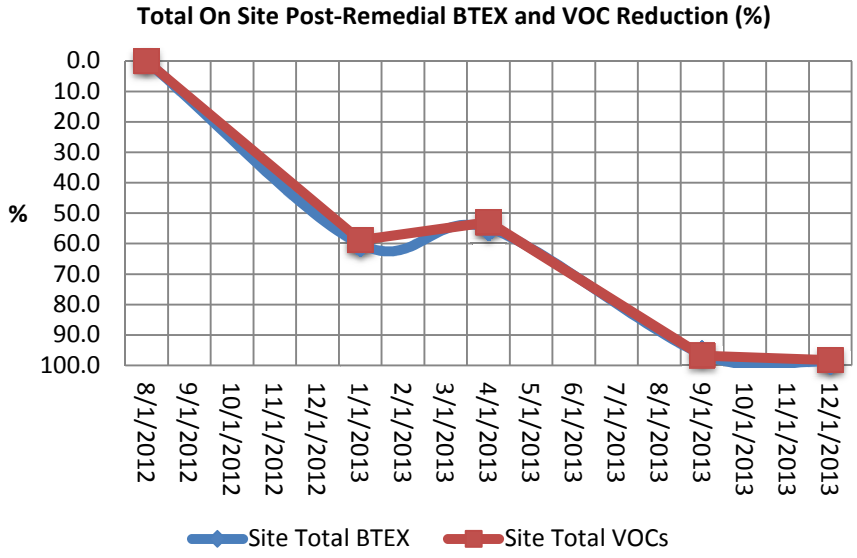


Figure 3.

Concentrations of Total BTEX and Total VOCs measured from all on-site monitoring wells in AOC-1 and AOC-2 plotted from 8/7/2012 through 12/20/2013 demonstrating a sharp and steady decreasing trend of COCs on site since completion of the remedy.

- Groundwater analytical results from offsite monitoring well MW-SE-8 demonstrated a 71% reduction in Benzene (700 µg/L in August 2012 to 200 µg/L in December 2013), 77% reduction in BTEX compounds (1,041 µg/L in August 2012 to 235 µg/L in December 2013), and 86% reduction in total measured VOC's (1,972 µg/L in August 2012 to 264 µg/L in December 2013).

- Levels of Dissolved Oxygen (DO) and Oxidation-reduction potential (ORP) in AOC-1 sharply increased following completion of the remedy and remain elevated, indicating that conditions on site are favorable for continued aerobic biodegradation of COC's.

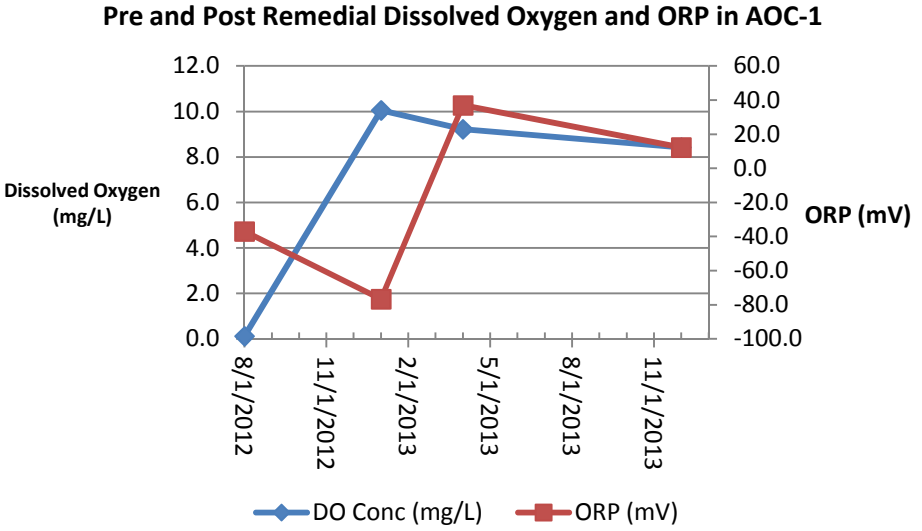


Figure 4.

Levels of DO and ORP in AOC-1 plotted from 8/7/2012 through 12/20/2013. DO and ORP are important site indicators for bioremediation. On- site concentrations of these two parameters demonstrate that conditions on site are favorable for continued aerobic biodegradation of target COC's since implementation of the remedy.

Conclusions and Recommendations

The groundwater data presented herein demonstrates that the injection strategy was successful in substantially reducing target COC's on and offsite, and creating groundwater conditions that are favorable for aerobic biodegradation of target COC's. Documentation presented from previous investigations conducted by GF on behalf of Cooper provided evidence of an offsite source of petroleum contamination that has impacted groundwater quality on White Street adjacent to Cooper. Cooper has demonstrated that other than the Sanborn map illustrating a pre-1981 historical presence of an UST, no such petroleum source exists on its property nor has Cooper ever stored/used gasoline since their property ownership.

Based on the best practical efforts completed by Cooper to remediate groundwater quality within Lot 47 of 225 Moore Street and the substantial improvement in groundwater quality on and off-site demonstrated in this report, GF concludes that no further investigation or remedial action for these soils or groundwater is warranted by Cooper. GF is requesting that no further action be

required by Cooper for conditions associated with Spill # 1100020 and that this Spill case be closed as it relates to Cooper.

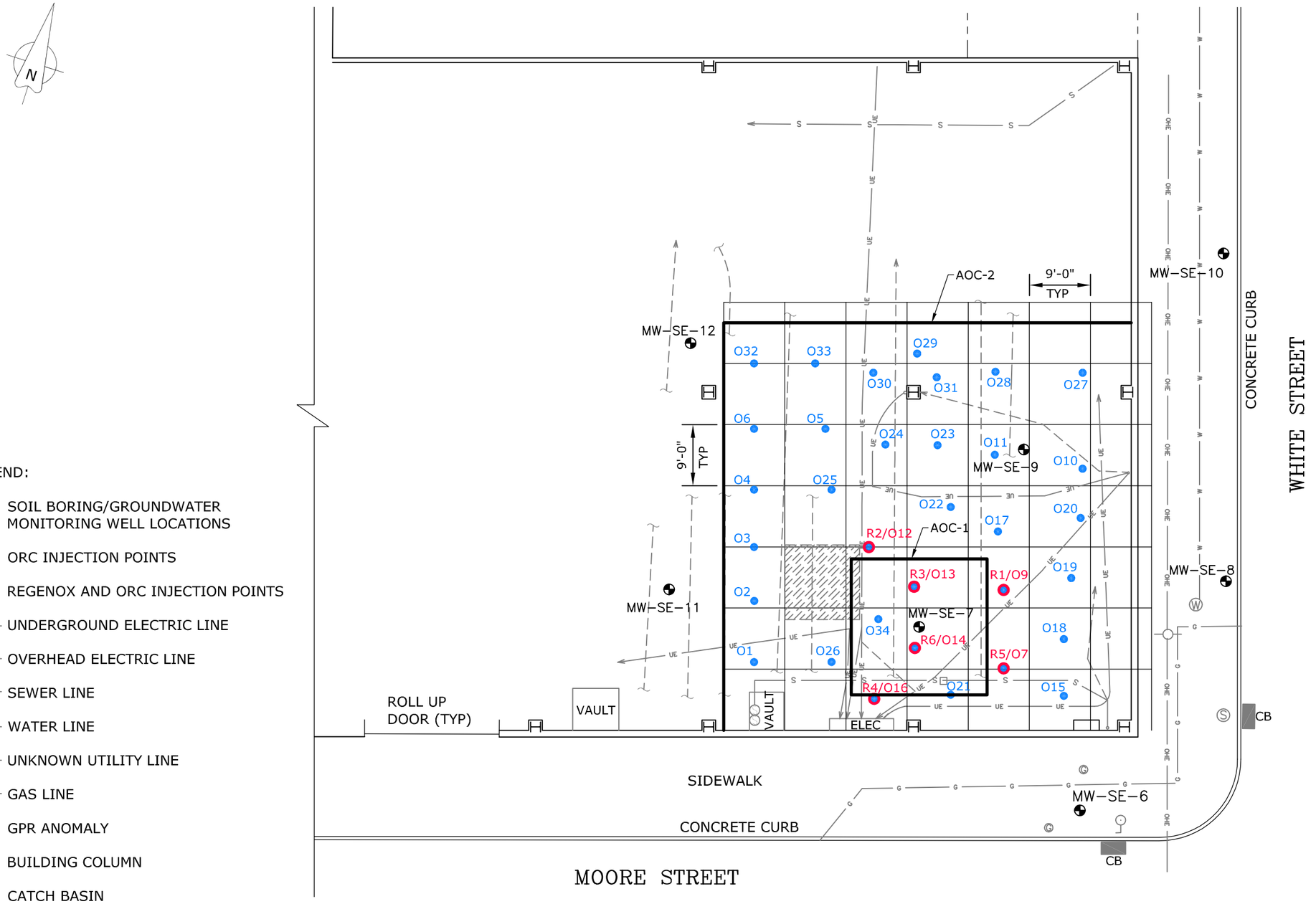
We are available at your convenience to further discuss these findings and conclusions. Please contact us if you have any questions or require further clarification.

Very truly yours,

GANNETT FLEMING ENGINEERS, P.C.

VINCENT FRISINA, P.E.
Vice President/Director of Environmental Services

cc: David Hillcoat – Cooper Tank and Welding Corp.
F. Inyard, P.E. (GF)



LEGEND:

- SOIL BORING/GROUNDWATER MONITORING WELL LOCATIONS
- O1 ORC INJECTION POINTS
- REGENOX AND ORC INJECTION POINTS
- UE UNDERGROUND ELECTRIC LINE
- OVERHEAD ELECTRIC LINE
- S SEWER LINE
- W WATER LINE
- UNKNOWN UTILITY LINE
- G GAS LINE
- GPR ANOMALY
- BUILDING COLUMN
- CB CATCH BASIN
- ELEC ELECTRIC PANEL
- STREET LIGHT
- AOC AREA OF CONCERN

0 8 32

SCALE: 1/16" = 1'-0"

REMEDIAL INJECTION POINTS

COOPER TANK & WELDING CORP.
215 MOORE STREET, BROOKLYN, NY

TABLE 1
SUMMARY OF WATER SAMPLE RESULTS
CP-51 LIST VOLATILE ORGANIC COMPOUNDS

COOPER TANK
225 MOORE STREET
BROOKLYN, NEW YORK

SAMPLE ID:	MW SE-11	MW SE-11	MW SE-11	MW SE-6	MW SE-6	MW SE-9	MW SE-9	MW SE-9	MW SE-9	MW SE-9
SAMPLE TYPE:	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
SAMPLE DATE:	8/7/2012	1/8/2013	4/18/2013	9/25/2013	12/20/2013	8/7/2012	1/8/2013	4/18/2013	9/25/2013	12/20/2013
GC/MS VOA (ppb) - 8260B										
1,2,4-Trimethylbenzene	4.8	1.1	1.0 U	13	1.9	2.1	67	10 U	2.2	3.2
1,3,5-Trimethylbenzene	1.6	1.0 U	1.0 U	3.2	1 U	1.3	27	11	2 U	1.1
Benzene	80	17	22	17	2.6	140	160	10 U	26	75
Ethylbenzene	3.8	1.0 U	1.0 U	11	13	11	48	10 U	2 U	4.2
Isopropylbenzene	3.2	1.2	1.3	10	28	110	130	10 U	4.5	16
m+p Xylene	13	3.2	3.4	24	6.2	7.6	66	20 U	4 U	4.4
Methyl tert-Butyl Ether	0.35 U	1.0 U	1.0 U	2 U	1 U	0.35 U	10 U	10 U	2 U	1 U
Naphthalene	1.1	2 U	2.0 U	9.5	2.9	3.6	58	20 U	7.7	2.1
n-Butylbenzene	0.71 J	1.0 U	1.0 U	3.9	11	39	160	10 U	2.2	6
n-Propylbenzene	4.1	1.2	1.2	19	62	190	360	10 U	5.5	35
o-Xylene	2.4	1.0 U	1.0 U	6.3	1.3	2.7	13	10 U	2 U	2.4
p-Isopropyltoluene	0.43 U	1.0 U	1.0 U	2 U	2.4	0.88 J	10 U	10 U	2 U	1 U
sec-Butylbenzene	0.46 U	1.0 U	1.0 U	2.3	7.6	28	78	10 U	2 U	3.9
tert-Butylbenzene	0.44 U	1.0 U	1.0 U	2 U	1 U	1.7	10 U	10 U	2 U	1 U
Toluene	4.1	1.0 U	1.0 U	3.1	1 U	6.7	24	10 U	2 U	3.8
Total BTEX	103.3	20.2	25.4	61.4	23.1	168	311	ND	26	89.8
TOTAL VOCs	118.1	23.7	27.9	122.3	138.9	543.7	1191	11	48.1	157.1
										138.8

SAMPLE ID:	MW SE-12	MW SE-12	MW SE-12	MW SE-7	MW SE-7	MW SE-7	MW SE-7	MW SE-7
SAMPLE TYPE:	Water	Water	Water	Water	Water	Water	Water	Water
SAMPLE DATE:	8/7/2012	1/8/2013	4/18/2013	8/7/2012	1/8/2013	4/18/2013	9/25/2013	12/20/2013
1,2,4-Trimethylbenzene	4.5	1.0 U	1.0 U	2000 D	480	1000	11.0	4.0 U
1,3,5-Trimethylbenzene	1.5	1.0 U	1.0 U	540 D	110	370	2.8	57.0
Benzene	77	1.0 U	1.0 U	3300 D	1700	1700	330.0	4.0 U
Ethylbenzene	3.6	1.0 U	1.0 U	1900 D	580	830	14.0	19.0
Isopropylbenzene	3.1	1.0 U	1.0 U	180	50	100	3.9	4.0 U
m+p Xylene	13	2 U	2 U	5500 D	1300	2000	40	8 U
Methyl tert-Butyl Ether	0.35 U	1.0 U	1.0 U	0.35 U	25 U	50 U	1.0 U	4.0 U
Naphthalene	1.0	2 U	2 U	490 D	140	270	6.1	8 U
n-Butylbenzene	0.66 J	1.0 U	1.0 U	25	25 U	68	1.0 U	4.0 U
n-Propylbenzene	3.8	1.0 U	1.0 U	190	78	210	5.4	4.0 U
o-Xylene	2.3	1.0 U	1.0 U	380 D	290	400	13.0	30.0
p-Isopropyltoluene	0.43 U	1.0 U	1.0 U	14	25 U	50 U	1.0 U	4.0 U
sec-Butylbenzene	0.46 U	1.0 U	1.0 U	15	25 U	50 U	1.0 U	4.0 U
tert-Butylbenzene	0.44 U	1.0 U	1.0 U	1.8	25 U	50 U	1.0 U	4.0 U
Toluene	4	1.0 U	1.0 U	210 D	450	310	14.0	4.0 U
Total BTEX	99.9	ND	ND	11290	4320	5240	411	49.0
TOTAL VOCs	114.5	ND	ND	14746.15	5178	7258	440.2	106.0
								263.1

SAMPLE ID:	MW SE-8	MW SE-8	MW SE-8	MW SE-8	MW SE-8	SITE TOTAL	SITE TOTAL	SITE TOTAL	SITE TOTAL	SITE TOTAL
SAMPLE TYPE:	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
SAMPLE DATE:	8/7/2012	1/8/2013	4/18/2013	9/25/2013	12/20/2013	8/7/2012	1/8/2013	4/18/2013	9/25/2013	12/20/2013
1,2,4-Trimethylbenzene	500 D	220	220	280.0	6.6					
1,3,5-Trimethylbenzene	71	49	52	68.0	5.0					
Benzene	700 D	450	570	3400.0	200.0	3597	1877	1722	356	75
Ethylbenzene	190	110	120	330.0	9.7					
Isopropylbenzene	10.0	76	86	55.0	3.2					
m+p Xylene	110	66	91	880	16					
Methyl tert-Butyl Ether	0.35 U	5 U	10 U	10.0 U	1.0 U					
Naphthalene	59	44	62	67	3.6					
n-Butylbenzene	25	28	23	20.0	2.1					
n-Propylbenzene	150	130	140	82.0	4.4					
o-Xylene	10	8.8	16	300.0	3.7					
p-Isopropyltoluene	17	17	15	11.0	4.7					
sec-Butylbenzene	11	11	10 U	10.0 U	1.0 U					
tert-Butylbenzene	2.1	5 U	10 U	10.0 U	1.0 U					
Toluene	31	27	30	270.0	5.3					
Total BTEX	1041	662	827	5180	235	11661	4651	5265	437	139
TOTAL VOCs	1972	1237	1425	5763	264	15522	6393	7297	488	263.1

SAMPLE ID / DATE	MW SE-11 1/8/2013	MW SE-11 4/18/2013	MW SE-9 1/8/2013	MW SE-9 4/18/2013	MW SE-9 9/25/2013	MW SE-9 12/20/2013	MW SE-12 1/8/2013	MW SE-12 4/18/2013	MW SE-7 1/8/2013	MW SE-7 4/18/2013	MW SE-7 9/25/2013	MW SE-7 12/20/2013	MW SE-8 1/8/2013	MW SE-8 4/18/2013	MW SE-8 9/25/2013	MW SE-8 12/20/2013	***SITE TOTAL (MW-SE7 and MW-SE9) 12/20/2013***
Total BTEX CONCENTRATION CHANGE (+/-%)	-80.45	-75.41	85.12	-100.00	-84.52	-46.55	-100.00	-100.00	-61.74	-53.59	-96.36	-99.57	-36.43	-20.58	397.60	-77.45	-98.79
Total Benzene CONCENTRATION CHANGE (+/-%)	-78.75	-72.50	14.29	-100.00	-81.43	-46.43	-100.00	-100.00	-48.48	-48.48	-90.00	-100.00	-35.71	-18.57	385.71	-71.43	-97.82
TOTAL MEASURED VOCs CONCENTRATION CHANGE (+/-%)	-79.93	-76.38	119.05	-97.98	-91.15	-71.11	-100.00	-100.00	-64.89	-50.78	-97.01	-99.28	-37.29	-27.74	192.23	-86.60	-98.28

Notes:
Site total concentrations through 4/18/13 include measured analytical concentrations in all wells except offsite well MW-8
Site total concentrations for 9/25/13 and 12/20/13 include measured analytical concentrations in wells MW-SE7 and MW-SE9, as required by NYSDEC
Monitoring well MW-SE6 had not been required for baseline and post remedial sampling, therefore baseline sampling data does not exist for MW-SE6

-	Indicates a percent-reduction in concentration from the August 2012 baseline event
J	Indicates an estimated value.
U	Analyzed for but not detected.
ND	Not Detected
µg/L	Micrograms per liter
(shaded)	Shaded areas indicate August 2012 Baseline Sampling Event

ATTACHMENT 1

LABORATORY REPORT FOR 12/20/2013 SAMPLING EVENT

con-test®
ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

January 2, 2014

Scott Narod
Gannett Fleming - NY
100 Crossways Park West, Suite 300
Woodbury, NY 11797

Project Location: 053319 - Cooper/Brooklyn
Client Job Number:
Project Number: 53319.009
Laboratory Work Order Number: 13L0842

Enclosed are results of analyses for samples received by the laboratory on December 20, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James M. Georgantas
Project Manager

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Gannett Fleming - NY
100 Crossways Park West, Suite 300
Woodbury, NY 11797
ATTN: Scott Narod

REPORT DATE: 1/2/2014

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 53319.009

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13L0842

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 053319 - Cooper/Brooklyn

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-6	13L0842-01	Ground Water		SW-846 8260C	
MW-SE-8	13L0842-02	Ground Water		SW-846 8260C	
MW-SE-7	13L0842-03	Ground Water		SW-846 8260C	
MW-SE-9	13L0842-04	Ground Water		SW-846 8260C	
MW-X	13L0842-05	Ground Water		SW-846 8260C	
Trip Blank	13L0842-06	Trip Blank Water		SW-846 8260C	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8260C

Qualifications:

pH of sample (pH 9) is outside of method specified preservation criteria.

Analyte & Samples(s) Qualified:

13L0842-03[MW-SE-7]

Elevated reporting limit due to matrix interference.

Analyte & Samples(s) Qualified:

13L0842-03[MW-SE-7]

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Naphthalene

13L0842-03[MW-SE-7], 13L0842-04[MW-SE-9], 13L0842-05[MW-X], 13L0842-06[Trip Blank], B087753-BLK1, B087753-BS1, B087753-BSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Michael A. Erickson
Laboratory Director

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 053319 - Cooper/Brooklyn | Sample Description: | Work Order: 13L0842

Date Received: 12/20/2013

Field Sample #: MW-6 | Sampled: 12/20/2013 11:14

Sample ID: 13L0842-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	2.6	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
n-Butylbenzene	11	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
sec-Butylbenzene	7.6	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
Ethylbenzene	13	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
Isopropylbenzene (Cumene)	28	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
p-Isopropyltoluene (p-Cymene)	2.4	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
Naphthalene	2.9	2.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
n-Propylbenzene	62	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
Toluene	1.0	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
1,2,4-Trimethylbenzene	1.9	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
m+p Xylene	6.2	2.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH
o-Xylene	1.3	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 13:46	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	91.3	70-130		12/30/13 13:46
Toluene-d8	98.6	70-130		12/30/13 13:46
4-Bromofluorobenzene	105	70-130		12/30/13 13:46

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 053319 - Cooper/Brooklyn | Sample Description: | Work Order: 13L0842

Date Received: 12/20/2013

Field Sample #: MW-SE-8 | Sampled: 12/20/2013 12:27

Sample ID: 13L0842-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	200	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
n-Butylbenzene	2.1	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
Ethylbenzene	9.7	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
Isopropylbenzene (Cumene)	3.2	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
p-Isopropyltoluene (p-Cymene)	4.7	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
Naphthalene	3.6	2.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
n-Propylbenzene	4.4	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
Toluene	5.3	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
1,2,4-Trimethylbenzene	6.6	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
1,3,5-Trimethylbenzene	5.0	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
m+p Xylene	16	2.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH
o-Xylene	3.7	1.0	µg/L	1		SW-846 8260C	12/30/13	12/30/13 14:13	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	91.1	70-130		12/30/13 14:13
Toluene-d8	96.4	70-130		12/30/13 14:13
4-Bromofluorobenzene	103	70-130		12/30/13 14:13

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 053319 - Cooper/Brooklyn | Sample Description: | Work Order: 13L0842

Date Received: 12/20/2013

Field Sample #: MW-SE-7 | Sampled: 12/20/2013 13:04

Sample ID: 13L0842-03

Sample Matrix: Ground Water

Sample Flags: PR-12, RL-12

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	ND	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
n-Butylbenzene	ND	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
sec-Butylbenzene	ND	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
tert-Butylbenzene	ND	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
Ethylbenzene	19	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
Isopropylbenzene (Cumene)	ND	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
p-Isopropyltoluene (p-Cymene)	ND	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
Methyl tert-Butyl Ether (MTBE)	ND	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
Naphthalene	ND	8.0	µg/L	4	V-05	SW-846 8260C	12/24/13	12/27/13 14:43	EEH
n-Propylbenzene	ND	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
Toluene	ND	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
1,2,4-Trimethylbenzene	ND	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
1,3,5-Trimethylbenzene	57	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
m+p Xylene	ND	8.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH
o-Xylene	30	4.0	µg/L	4		SW-846 8260C	12/24/13	12/27/13 14:43	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	90.3	70-130		12/27/13 14:43
Toluene-d8	101	70-130		12/27/13 14:43
4-Bromofluorobenzene	102	70-130		12/27/13 14:43

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Project Location: 053319 - Cooper/Brooklyn | Sample Description: | Work Order: 13L0842

Date Received: 12/20/2013

Field Sample #: MW-SE-9 | Sampled: 12/20/2013 15:05

Sample ID: 13L0842-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	75	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
n-Butylbenzene	6.0	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
sec-Butylbenzene	3.9	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
Ethylbenzene	4.2	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
Isopropylbenzene (Cumene)	16	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
Naphthalene	2.1	2.0	µg/L	1	V-05	SW-846 8260C	12/24/13	12/27/13 13:24	EEH
n-Propylbenzene	35	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
Toluene	3.8	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
1,2,4-Trimethylbenzene	3.2	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
1,3,5-Trimethylbenzene	1.1	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
m+p Xylene	4.4	2.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH
o-Xylene	2.4	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 13:24	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	89.4	70-130		12/27/13 13:24
Toluene-d8	102	70-130		12/27/13 13:24
4-Bromofluorobenzene	103	70-130		12/27/13 13:24

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Project Location: 053319 - Cooper/Brooklyn | Sample Description: | Work Order: 13L0842

Date Received: 12/20/2013

Field Sample #: MW-X | Sampled: 12/20/2013 15:15

Sample ID: 13L0842-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
Naphthalene	ND	2.0	µg/L	1	V-05	SW-846 8260C	12/24/13	12/27/13 12:57	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:57	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	89.3	70-130		12/27/13 12:57
Toluene-d8	103	70-130		12/27/13 12:57
4-Bromofluorobenzene	104	70-130		12/27/13 12:57

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Project Location: 053319 - Cooper/Brooklyn | Sample Description: | Work Order: 13L0842

Date Received: 12/20/2013

Field Sample #: Trip Blank | Sampled: 12/20/2013 00:00

Sample ID: 13L0842-06

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
Naphthalene	ND	2.0	µg/L	1	V-05	SW-846 8260C	12/24/13	12/27/13 12:30	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	12/24/13	12/27/13 12:30	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	89.0	70-130		12/27/13 12:30
Toluene-d8	103	70-130		12/27/13 12:30
4-Bromofluorobenzene	102	70-130		12/27/13 12:30

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Sample Extraction Data

Prep Method: SW-846 5030B-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
13L0842-03 [MW-SE-7]	B087753	1.25	5.00	12/24/13
13L0842-04 [MW-SE-9]	B087753	5	5.00	12/24/13
13L0842-05 [MW-X]	B087753	5	5.00	12/24/13
13L0842-06 [Trip Blank]	B087753	5	5.00	12/24/13

Prep Method: SW-846 5030B-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
13L0842-01 [MW-6]	B087984	5	5.00	12/30/13
13L0842-02 [MW-SE-8]	B087984	5	5.00	12/30/13

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B087753 - SW-846 5030B											
Blank (B087753-BLK1)				Prepared: 12/24/13 Analyzed: 12/27/13							
Benzene	ND	1.0	µg/L								
n-Butylbenzene	ND	1.0	µg/L								
sec-Butylbenzene	ND	1.0	µg/L								
tert-Butylbenzene	ND	1.0	µg/L								
Ethylbenzene	ND	1.0	µg/L								
Isopropylbenzene (Cumene)	ND	1.0	µg/L								
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L								
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L								
Naphthalene	ND	2.0	µg/L							V-05	
n-Propylbenzene	ND	1.0	µg/L								
Toluene	ND	1.0	µg/L								
1,2,4-Trimethylbenzene	ND	1.0	µg/L								
1,3,5-Trimethylbenzene	ND	1.0	µg/L								
m+p Xylene	ND	2.0	µg/L								
o-Xylene	ND	1.0	µg/L								
Surrogate: 1,2-Dichloroethane-d4	*21.3*		µg/L	25.0		85.3	70-130				
Surrogate: Toluene-d8	*25.9*		µg/L	25.0		104	70-130				
Surrogate: 4-Bromofluorobenzene	*24.7*		µg/L	25.0		99.0	70-130				
LCS (B087753-BS1)				Prepared: 12/24/13 Analyzed: 12/27/13							
Benzene	9.90	1.0	µg/L	10.0		99.0	70-130				
n-Butylbenzene	10.4	1.0	µg/L	10.0		104	70-130				
sec-Butylbenzene	9.98	1.0	µg/L	10.0		99.8	70-130				
tert-Butylbenzene	9.78	1.0	µg/L	10.0		97.8	70-130				
Ethylbenzene	10.2	1.0	µg/L	10.0		102	70-130				
Isopropylbenzene (Cumene)	10.3	1.0	µg/L	10.0		103	70-130				
p-Isopropyltoluene (p-Cymene)	9.92	1.0	µg/L	10.0		99.2	70-130				
Methyl tert-Butyl Ether (MTBE)	9.86	1.0	µg/L	10.0		98.6	70-130				
Naphthalene	9.60	2.0	µg/L	10.0		96.0	40-130			V-05	†
n-Propylbenzene	10.9	1.0	µg/L	10.0		109	70-130				
Toluene	9.93	1.0	µg/L	10.0		99.3	70-130				
1,2,4-Trimethylbenzene	9.73	1.0	µg/L	10.0		97.3	70-130				
1,3,5-Trimethylbenzene	10.0	1.0	µg/L	10.0		100	70-130				
m+p Xylene	20.5	2.0	µg/L	20.0		102	70-130				
o-Xylene	10.3	1.0	µg/L	10.0		103	70-130				
Surrogate: 1,2-Dichloroethane-d4	*21.9*		µg/L	25.0		87.5	70-130				
Surrogate: Toluene-d8	*25.3*		µg/L	25.0		101	70-130				
Surrogate: 4-Bromofluorobenzene	*25.2*		µg/L	25.0		101	70-130				
LCS Dup (B087753-BSD1)				Prepared: 12/24/13 Analyzed: 12/27/13							
Benzene	9.82	1.0	µg/L	10.0		98.2	70-130	0.811	25		
n-Butylbenzene	10.8	1.0	µg/L	10.0		108	70-130	4.26	25		
sec-Butylbenzene	10.5	1.0	µg/L	10.0		105	70-130	4.70	25		
tert-Butylbenzene	9.89	1.0	µg/L	10.0		98.9	70-130	1.12	25		
Ethylbenzene	10.6	1.0	µg/L	10.0		106	70-130	4.03	25		
Isopropylbenzene (Cumene)	10.6	1.0	µg/L	10.0		106	70-130	2.78	25		
p-Isopropyltoluene (p-Cymene)	10.2	1.0	µg/L	10.0		102	70-130	2.69	25		
Methyl tert-Butyl Ether (MTBE)	9.33	1.0	µg/L	10.0		93.3	70-130	5.52	25		
Naphthalene	7.62	2.0	µg/L	10.0		76.2	40-130	23.0	25	V-05	†
n-Propylbenzene	10.8	1.0	µg/L	10.0		108	70-130	0.737	25		
Toluene	10.2	1.0	µg/L	10.0		102	70-130	2.88	25		
1,2,4-Trimethylbenzene	10.1	1.0	µg/L	10.0		101	70-130	4.13	25		

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B087753 - SW-846 5030B										
LCS Dup (B087753-BSD1)				Prepared: 12/24/13 Analyzed: 12/27/13						
1,3,5-Trimethylbenzene	10.3	1.0	µg/L	10.0		103	70-130	3.14	25	
m+p Xylene	20.9	2.0	µg/L	20.0		104	70-130	1.98	25	
o-Xylene	10.3	1.0	µg/L	10.0		103	70-130	0.388	25	
Surrogate: 1,2-Dichloroethane-d4	*22.3*		µg/L	25.0		89.3	70-130			
Surrogate: Toluene-d8	*25.0*		µg/L	25.0		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	*25.4*		µg/L	25.0		102	70-130			
Batch B087984 - SW-846 5030B										
Blank (B087984-BLK1)				Prepared & Analyzed: 12/30/13						
Benzene	ND	1.0	µg/L							
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
Ethylbenzene	ND	1.0	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							
Naphthalene	ND	2.0	µg/L							
n-Propylbenzene	ND	1.0	µg/L							
Toluene	ND	1.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
1,3,5-Trimethylbenzene	ND	1.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	1.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*22.4*		µg/L	25.0		89.7	70-130			
Surrogate: Toluene-d8	*25.6*		µg/L	25.0		102	70-130			
Surrogate: 4-Bromofluorobenzene	*25.7*		µg/L	25.0		103	70-130			
LCS (B087984-BS1)				Prepared & Analyzed: 12/30/13						
Benzene	9.76	1.0	µg/L	10.0		97.6	70-130			
n-Butylbenzene	10.8	1.0	µg/L	10.0		108	70-130			
sec-Butylbenzene	10.5	1.0	µg/L	10.0		105	70-130			
tert-Butylbenzene	10.0	1.0	µg/L	10.0		100	70-130			
Ethylbenzene	10.3	1.0	µg/L	10.0		103	70-130			
Isopropylbenzene (Cumene)	10.5	1.0	µg/L	10.0		105	70-130			
p-Isopropyltoluene (p-Cymene)	10.4	1.0	µg/L	10.0		104	70-130			
Methyl tert-Butyl Ether (MTBE)	8.68	1.0	µg/L	10.0		86.8	70-130			
Naphthalene	6.49	2.0	µg/L	10.0		64.9	40-130			†
n-Propylbenzene	10.8	1.0	µg/L	10.0		108	70-130			
Toluene	9.85	1.0	µg/L	10.0		98.5	70-130			
1,2,4-Trimethylbenzene	10.0	1.0	µg/L	10.0		100	70-130			
1,3,5-Trimethylbenzene	10.1	1.0	µg/L	10.0		101	70-130			
m+p Xylene	20.2	2.0	µg/L	20.0		101	70-130			
o-Xylene	10.4	1.0	µg/L	10.0		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	*23.5*		µg/L	25.0		93.9	70-130			
Surrogate: Toluene-d8	*25.1*		µg/L	25.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	*25.5*		µg/L	25.0		102	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B087984 - SW-846 5030B										
LCS Dup (B087984-BSD1)				Prepared & Analyzed: 12/30/13						
Benzene	9.44	1.0	µg/L	10.0		94.4	70-130	3.33	25	
n-Butylbenzene	10.5	1.0	µg/L	10.0		105	70-130	2.72	25	
sec-Butylbenzene	10.3	1.0	µg/L	10.0		103	70-130	2.02	25	
tert-Butylbenzene	9.85	1.0	µg/L	10.0		98.5	70-130	1.81	25	
Ethylbenzene	10.8	1.0	µg/L	10.0		108	70-130	4.26	25	
Isopropylbenzene (Cumene)	10.9	1.0	µg/L	10.0		109	70-130	3.75	25	
p-Isopropyltoluene (p-Cymene)	9.98	1.0	µg/L	10.0		99.8	70-130	3.64	25	
Methyl tert-Butyl Ether (MTBE)	8.76	1.0	µg/L	10.0		87.6	70-130	0.917	25	
Naphthalene	7.02	2.0	µg/L	10.0		70.2	40-130	7.85	25	†
n-Propylbenzene	10.9	1.0	µg/L	10.0		109	70-130	0.922	25	
Toluene	10.4	1.0	µg/L	10.0		104	70-130	5.53	25	
1,2,4-Trimethylbenzene	10.1	1.0	µg/L	10.0		101	70-130	0.598	25	
1,3,5-Trimethylbenzene	10.5	1.0	µg/L	10.0		105	70-130	3.21	25	
m+p Xylene	21.0	2.0	µg/L	20.0		105	70-130	3.60	25	
o-Xylene	10.7	1.0	µg/L	10.0		107	70-130	2.94	25	
Surrogate: 1,2-Dichloroethane-d4	*23.2*		µg/L	25.0		92.9	70-130			
Surrogate: Toluene-d8	*26.4*		µg/L	25.0		106	70-130			
Surrogate: 4-Bromofluorobenzene	*25.8*		µg/L	25.0		103	70-130			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
PR-12	pH of sample (pH 9) is outside of method specified preservation criteria.
RL-12	Elevated reporting limit due to matrix interference.
V-05	Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Water	
Benzene	CT,NH,NY,VA,NJ
n-Butylbenzene	NY,VA,NJ
sec-Butylbenzene	NY,VA,NJ
tert-Butylbenzene	NY,VA,NJ
Ethylbenzene	CT,NH,NY,VA,NJ
Isopropylbenzene (Cumene)	NY,VA,NJ
p-Isopropyltoluene (p-Cymene)	CT,NH,NY,VA,NJ
Methyl tert-Butyl Ether (MTBE)	CT,NH,NY,VA,NJ
Naphthalene	NH,NY,VA,NJ
n-Propylbenzene	CT,NH,NY,VA,NJ
Toluene	CT,NH,NY,VA,NJ
1,2,4-Trimethylbenzene	NY,VA,NJ
1,3,5-Trimethylbenzene	NY,VA,NJ
m+p Xylene	CT,NH,VA
o-Xylene	CT,NH,VA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2014
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2014
NJ	New Jersey DEP	MA007 NELAP	06/30/2014
FL	Florida Department of Health	E871027 NELAP	06/30/2014
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2014
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2014
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014

CHAIN OF CUSTODY RECORD

13L0842

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Rev 04.05.12

Company Name: Gannett Fleming
Address: 100 Crossways Park Drive West, Suite 300
Woodbury, NY 11797
Attention: Scott Narod
Project Location: 225 Moore St. Brooklyn, NY
Sampled By: Scott Narod

Telephone: 646-961-8603
Project # 53319.009
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email: Snarod@gfnet.com
Format: ☒ PDF ☒ EXCEL ○ GIS ☒ OTHER Equis NYSDEC
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	8260 VOCs CPSI Table 2	3	H	V
01	MW-6	12/20/13 @	1114		X	GW	U	X			
02	MW SE-8	↓	1227		↓	↓	↓	X			
03	MW SE-7		1304					X			
04	MW SE-9		1505					X			
05	MW-X	↓	1515		↓	↓	↓	X			
06	Trip Blank							X			

ANALYSIS REQUESTED

# of Containers
** Preservation
***Container Cod

Dissolved Metal
○ Field Filtered
○ Lab to Filter

***Cont. Code:**
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

****Preservation**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfa
X = Na hydroxide
T = Na thiosulfate
O = Other_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments:

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature) Elizabeth Welch Temp 6.1C	Date/Time:

Turnaround ††
☒ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: NYSDEC TOGS Drinking Water

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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East Longmeadow, MA. 01028
P: 413-525-2332
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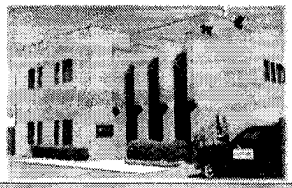

Sample Receipt Checklist

CLIENT NAME: Gannett Fleming **RECEIVED BY:** UPW **DATE:** 12-20-13

1) **Was the chain(s) of custody relinquished and signed?** (Yes) No No CoC Included

2) **Does the chain agree with the samples?** (Yes) No

If not, explain:

3) **Are all the samples in good condition?** (Yes) No

If not, explain:

4) **How were the samples received:**

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank na Temperature °C by Temp gun 6.1C (RCF)

5) **Are there Dissolved samples for the lab to filter?** Yes (No)

Who was notified _____ Date _____ Time _____

6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes No

Who was notified _____ Date _____ Time _____

7) **Location where samples are stored:** 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: _____

8) **Do all samples have the proper Acid pH:** Yes No (N/A) _____

9) **Do all samples have the proper Base pH:** Yes No (N/A) _____

10) **Was the PC notified of any discrepancies with the CoC vs the samples:** Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below	18	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl 18 # Methanol _____

Bisulfate _____ # DI Water _____

Thiosulfate _____ Unpreserved

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	n/a	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	F	only Trip blanks are label — rest are written upon with Marker
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	n/a	
14) Sample collection date/times are provided.	F	no - just numbers
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	T	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	T	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? **Date/Time:** 20:00

Doc #277 Rev. 4 August 2013 **Log-In Technician Initials:** LAW **Date/Time:** 12-20-13