



EMA

Environmental Management Associates, LLC

December 3, 2015

Reference No. 559

Mr. David Hayes
Georgia Environmental Protection Division
Hazardous Sites Response Program
Floyd Towers East, Suite #1054
2 Martin Luther King Jr. Drive, SE
Atlanta, Georgia 30334-9000

Dear Mr. Hayes:

Re: Semi-annual VRP Progress Report – November 2015
Voluntary Remediation Plan
Professional Cleaners & Linen Service
2040 Beaver Ruin Road, Norcross, GA

On behalf of Indian Trail Retail Assoc, LTD, Environmental Management Associates, LLC (EMA) has attached the Semi-annual VRP Progress Report for November 2015 for the above-referenced site (Site). As discussed with Mr. David Reuland during the Site walk on June 4, 2015, EPD would be willing to issue a letter approving a "no further Action required" status, or something equivalent, assuming that the PCE groundwater contamination didn't rebound to previously detected high concentrations after 2 semi-annual events (June and November 2015) and the execution of an Uniform Environmental Covenant on the Site. The highest detected concentration within the plume center-line over the past two semi-annual events is 110 micrograms per liter ($\mu\text{g/L}$) at monitoring well MW-11. This represents a re-bounce of 65 percent in concentration of PCE at this location and is only slightly above the Type 4 RRS. As indicated in the attached report, we are requesting the approval of a Type 5 RRS of 110 $\mu\text{g/L}$ for this Site. Indian Trail Retail Assoc, LTD can certify to this RRS.

Please find one hard copy and one electronic version of the progress report. We certify that to the best of our knowledge that the electronic copy is complete, identical in content to the paper copy, and virus free.

Should you have any questions related to this correspondence, please contact the undersigned at (770) 271-4628.

Yours truly,

Environmental Management Associates, LLC

Brent Cortelloni, CHMM

cc: Craig Harper – Indian Trail Retail Assoc., LTD

**SEMI-ANNUAL VOLUNTARY
REMEDATION PLAN PROGRESS
REPORT - NOVEMBER 2015**

**PROFESSIONAL CLEANERS & LINEN
SERVICE
2040 BEAVER RUIN ROAD
NORCROSS, GEORGIA**

HSI No. NA

December 3, 2015

Prepared for

**Indian Trail Retail Assoc., LP
P.O. Box 767127
Roswell, Georgia**

SEMI-ANNUAL VOLUNTARY REMEDIATION PLAN PROGRESS REPORT - NOVEMBER 2015

**PROFESSIONAL CLEANERS & LINEN SERVICE
2040 BEAVER RUIN ROAD
NORCROSS, GEORGIA**

HSI No. NA

December 3, 2015

Brent Cortelloni, CHMM
Project Manager

John O. Schwaller, P.G.
(GA. Registration No. 1617)



EMA

Environmental Management Associates, LLC
5262 Belle Wood Court, Suite A
Buford, Georgia 30518

SEMI-ANNUAL VOLUNTARY REMEDIATION PLAN PROGRESS REPORT - NOVEMBER 2015

**PROFESSIONAL CLEANERS & LINEN SERVICE
2040 BEAVER RUIN ROAD
NORCROSS, GEORGIA**

HSI No. NA

December 3, 2015



**Brent Cortelloni, CHMM
Project Manager**



EMA

Environmental Management Associates, LLC
5262 Belle Wood Court, Suite A
Buford, Georgia 30518



TABLE OF CONTENTS

	<u>Page</u>
1.0 PROJECT SUMMARY	1
2.0 ACTIONS TAKEN SINCE LAST SUBMITTAL.....	3
2.1 SEMI-ANNUAL GROUNDWATER MONITORING EVENT.....	3
2.2 DISCUSSION AND CONCLUSIONS	4
3.0 UPDATED COST ESTIMATE	5
4.0 SCHEDULE AND FUTURE SUBMITTALS.....	6
5.0 PROFESSIONAL GEOLOGIST CERTIFICATION STATEMENT	7

LIST OF FIGURES

Following
Report

FIGURE 1	SITE LOCATION PLAN
FIGURE 2	GROUNDWATER CONTOURS AND FLOW DIRECTION – NOVEMBER 10, 2015
FIGURE 3	GROUNDWATER PCE CONCENTRATIONS – NOVEMBER 2015

LIST OF TABLES

TABLE 1	GROUNDWATER LEVEL MEASUREMENTS
TABLE 2	GROUNDWATER PCE ANALYTICAL RESULTS

LIST OF APPENDICES

APPENDIX A	GROUNDWATER SAMPLING FORMS
APPENDIX B	ANALYTICAL LABORATORY REPORT
APPENDIX C	UPDATED COST ESTIMATE

1.0 PROJECT SUMMARY

The Professional Cleaners & Linen Service site (Site) is located at 2040 Beaver Ruin Road in Norcross, Gwinnett County, Georgia and is part of a 1.79-acre multi-tenant shopping center (Crossings Shopping Center) developed in 1984. The surrounding properties are predominantly commercial with some residential to the north. A dry cleaner has operated within one of the tenant spaces (Suite 15) since 1984 and is believed to be the source of the Site contamination. A topographic map (Property Location Map) of the surrounding area is included as Figure 1.

A Phase I and II Environmental Site Assessment (ESA) was completed in February 2011 for the subject property. During the Phase II ESA activities, a release of tetrachloroethene (PCE) was detected in the subsurface soils and groundwater above the applicable Notification Concentrations (NC) referenced in Georgia Environmental Protection Division's (EPD) Hazardous Site Response Act (HSRA) Regulations Chapter 391-3-19, Appendix I. Within 30 day's of detection, the detected soils above the NC were removed from the Site based on the confirmatory soil sample results. A release notification to groundwater was subsequently submitted to EPD on April 7, 2011. It should be noted that PCE is the only contaminant of concern at this Site.

A Voluntary Investigation and Remediation Plan (VIRP) prepared by EMA was submitted to EPD on September 2, 2011. EPD approved the VIRP and accepted the Site into the Voluntary remediation Program (VRP) with conditions and comments in two letters dated March 6, 2012.

EMA conducted two formal injections of an in-situ chemical oxidation (ISCO) reagent (PeroxyChem's (formerly FMC Corporation) Kloxur® sodium persulfate mixed with an alkaline activator (sodium hydroxide) to form sulfate and hydroxyl radicals) to reduce the levels of the groundwater contamination in what was assumed to be the entire contaminant plume (The area from MW-1 south-southwest to MW-2). The injections were completed in April/June 2012 and August 2012. Several quarterly sampling events were completed prior to and following the final injection.

A VRP Compliance Status Report (V-CSR) dated May 15, 2013 was submitted to EPD in June 2013. At that time PCE was below the EPD Type 4 Risk reduction Standard (98 ppb) in all of the monitoring wells and the EMA proposed Alternative Concentration Limit (ACL) of 70 ppb in the V-CSR. EPD provided comments on the V-CSR in correspondence dated October 10, 2013.

Semi-annual Progress Report No. 3 was submitted in May 2014 and included the confirmatory groundwater sampling event requested by EPD, additional soil sampling to identify any source areas not detected during the previous investigations, and additional horizontal delineation of the on-Site groundwater contamination. The October 29 and 30, 2013 round of sampling and the sample results from additional monitoring well MW-11 on April 22, 2014 indicated that PCE levels have rebounded at upgradient location MW-1 and other previous areas of unknown contamination have been identified along the east side of the building. The higher level of PCE detected at well MW-4 was most likely the result of the upgradient injections around monitoring well MW-2 versus standard contaminant migration within the groundwater. The high level of PCE in the groundwater at MW-11 was not unexpected based on the groundwater flow direction; however, the previous 2011 Phase II investigation in this area did not identify this area as impacted.

Based on the rebound of the PCE contamination in wells MW-1 and MW-4 and the contamination detected in well MW-11, a third formal injection of activated persulfate was applied to the groundwater contaminant plume in October 2014 and another limited injection in January 2015. The injection locations included the east side of the property running from MW-1 thru MW-11 to MW-4.

This Semi-annual VRP Progress Report No. 6 was prepared in accordance with the VRP and covers the activities conducted since the Semi-annual Progress Report No. 5 submittal. These activities included a limited semiannual monitoring event as detailed in EMA's correspondence dated June 4, 2015 and a limited injection of the ISCO reagent within the area from MW-7 to MW-11.

2.0 ACTIONS TAKEN SINCE LAST SUBMITTAL

2.1 SEMI-ANNUAL GROUNDWATER MONITORING EVENT

The sixth semi-annual groundwater monitoring event was conducted on November 10, 2015 using the low-flow purging and sampling technique. A groundwater sample was collected from wells MW-1, MW-4, MW-7, and MW-11 on November 10, 2015. Static groundwater level measurements were recorded at each monitoring well prior to purging. The groundwater measurements are included in Table 1. The potentiometric contour map for the November 2015 event is attached as Figure 2.

Groundwater samples were collected using the low-flow/low-stress purging and sampling technique referenced in USEPA Region IV's SESD Operating Procedures - Groundwater Sampling dated March 4, 2013. Peristaltic pumps with disposable Teflon or Teflon lined tubing was used for the purging and sampling. The "Soda Straw" method was used to collect the groundwater samples for tetrachloroethene (PCE). The groundwater samples were delivered to Analytical Environmental Services, Inc. (AES) located in Atlanta, Georgia. AES is an accredited laboratory under the National Environmental Laboratory Accreditation Program (NELAC) (Accreditation ID: E87582). The groundwater samples were submitted for PCE by SW-846 Method 8260B. During the low-flow/low-stress purging procedure, field measurements of reduction oxidation potential (redox), dissolved oxygen (D.O.), turbidity, pH, conductivity, and temperature were recorded. Once the field measurements stabilized for three consecutive readings, samples were collected directly into the pre-preserved laboratory supplied containers. A field duplicate sample was collected to help assess precision of the analytical instruments. A trip blank sample was included with the sample sets to assess cross-contamination during shipping. Field "rinsate" samples were not required since disposable tubing was utilized for the sample collection. The low-flow well purging/sampling forms are included in Appendix A. The analytical reports are included in Appendix B.

The PCE results for the confirmatory groundwater monitoring event are summarized in Table 2 (highlighted in red) and illustrated on Figure 3. PCE concentrations were non-detect for well MW-4. The PCE concentration was reported at 14 µg/L for MW-1, 61 µg/L for well MW-7, and 110 µg/L for well MW-11. The only detected PCE concentration above the the Type 4 RRS of 98 µg/L was for the sample collected from monitoring well MW-11.

2.2 DISCUSSION AND CONCLUSIONS

Significant remedial efforts have been completed to bring the Site into compliance with the RRS. Three formal injections of the ISCO reagent have been conducted at the Site over the past two years. In addition, limited injections have been conducted in what we believe are the source areas at MW-1 and the former dry cleaning machine location (adjacent to MW-7). Based on the groundwater sampling conducted in November 2014/January 2015 for the 4th semi-annual, the groundwater PCE analytical results were reported as non-detect. A slight rebound occurred at wells MW-11 and MW-4 during the 5th semi-annual event. The results from this November 2015 monitoring event indicate we have a slight rebound at MW-11 and MW-7; however, the concentrations remain below the Type 4 RRS for MW-7 and only slightly above this RRS at MW-11. In an effort to further reduce the PCE groundwater contamination in this area, Indian Trail Retail Assoc., LP conducted a limited ISCO reagent injection at ~11 injection point locations from the main source area (MW-7) to MW-11 on December 3, 2015. The ISCO reagent (605 pounds) was injected into these injection points using a 20% solution activated with a 15% hydrogen peroxide solution.

As detailed in our June 4, 2015 correspondence and as discussed during our Site walk on November 25, 2015, it is Indian Trail Retail Assoc., LP's intent to enact a Uniform Environmental Covenant (UEC) for the Property. As discussed with Mr. David Reuland during the Site walk on June 4, 2015, EPD would be willing to issue a letter approving a "no further Action required" status, or something equivalent, assuming that the PCE groundwater contamination didn't rebound to previously detected high concentrations after 2 semi-annual events (June and November 2015) and the execution of an Uniform Environmental Covenant on the Site.

The highest detected concentration on-Site over the past two semi-annual events is 110 µg/L at monitoring well MW-11. This represents a re-bound of 65 percent in concentration of PCE at this location and is only slightly above the Type 4 RRS of 98 µg/L. It can be assumed that the current PCE concentration at this location is lower than 110 µg/L based on the ISCO injection event conducted on December 3, 2015. In the essence of timing and the owner's liability with the current lender, Indian Trail Retail Assoc., LP is requesting EPD approve the NFAR status assuming a Type 5 RRS with an ACL of 110 µg/L. Upon EPD's written concurrence with this request, the UEC will be executed and recorded in the deed.

3.0 UPDATED COST ESTIMATE

The initial cost estimate for the proposed groundwater monitoring, delineation, and remediation of the groundwater PCE contamination known at the time was provided to EPD in the VIRP and included a range from \$66,600 to \$78,600. The total cost to date which includes the additional investigation and remediation activities detailed in this Progress Report is approximately \$125,872. A summary of the initial estimate included in the VIRP and the proposed cost to complete is included in Appendix C. We have also included a tabulated summary of the expenses since the last reporting period and a summary of hours charged by our Professional Geologist.

4.0 SCHEDULE AND FUTURE SUBMITTALS

If EPD agrees with the proposed Type 5 RRS and the NFAR status, Indian Trail Retail Assoc., LP will submit a CSR Addendum certifying compliance with this Type 5 RRS and will execute the UEC and record in the deed within 45 days of EPD's concurrence.

5.0 PROFESSIONAL GEOLOGIST CERTIFICATION STATEMENT

"I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.

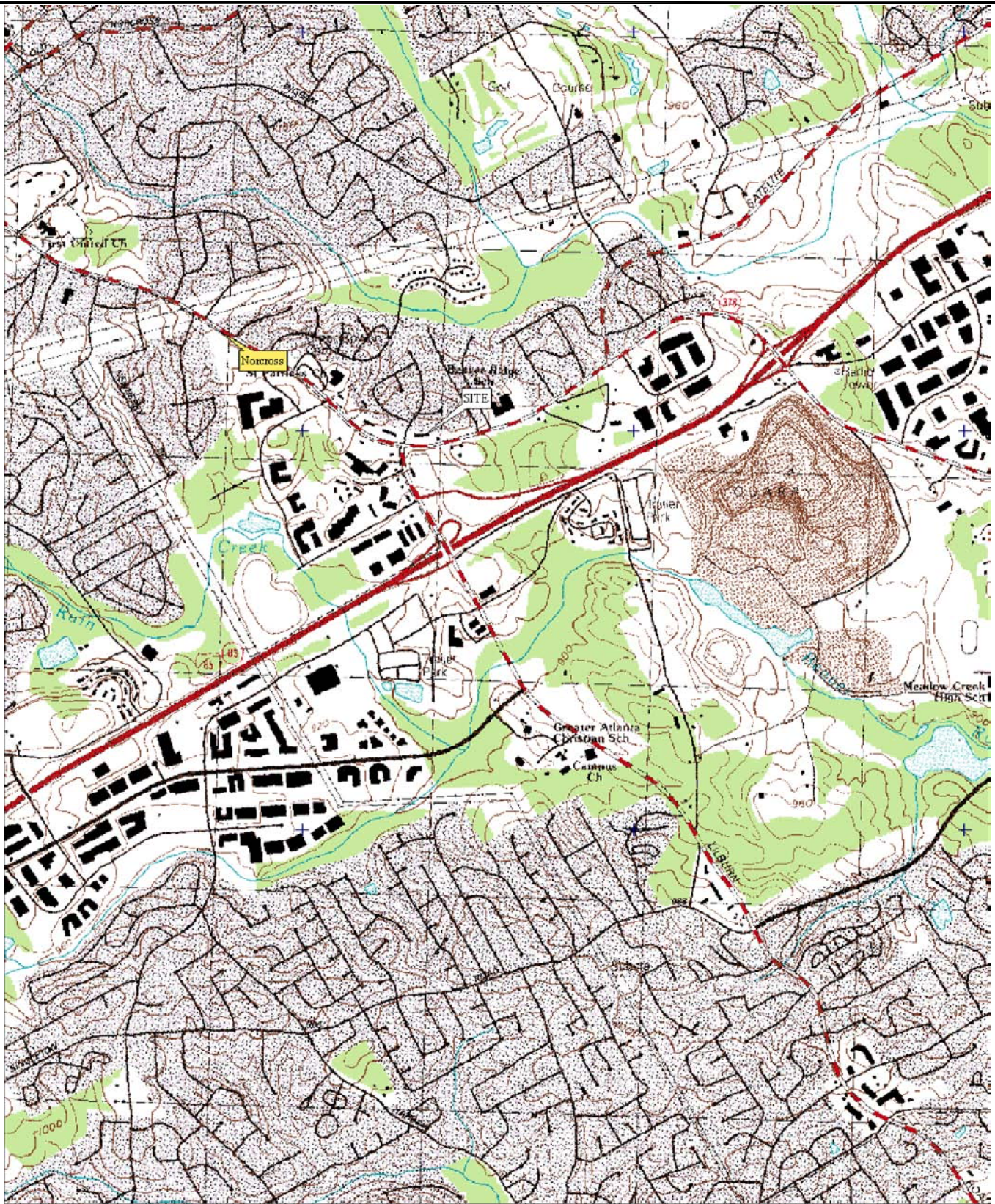
Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.

The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. "

Mr. John O. Schwaller, P.G.
Georgia Registration No. 1617

Signature/Stamp

FIGURES



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

700 ft Scale: 1 : 24,000 Detail: 13-1 Datum: WGS84



Title

SITE LOCATION MAP

Site

PROFESSIONAL CLEANERS & LINEN SERVICE
2040 Beaver Ruin Road, Norcross, Georgia



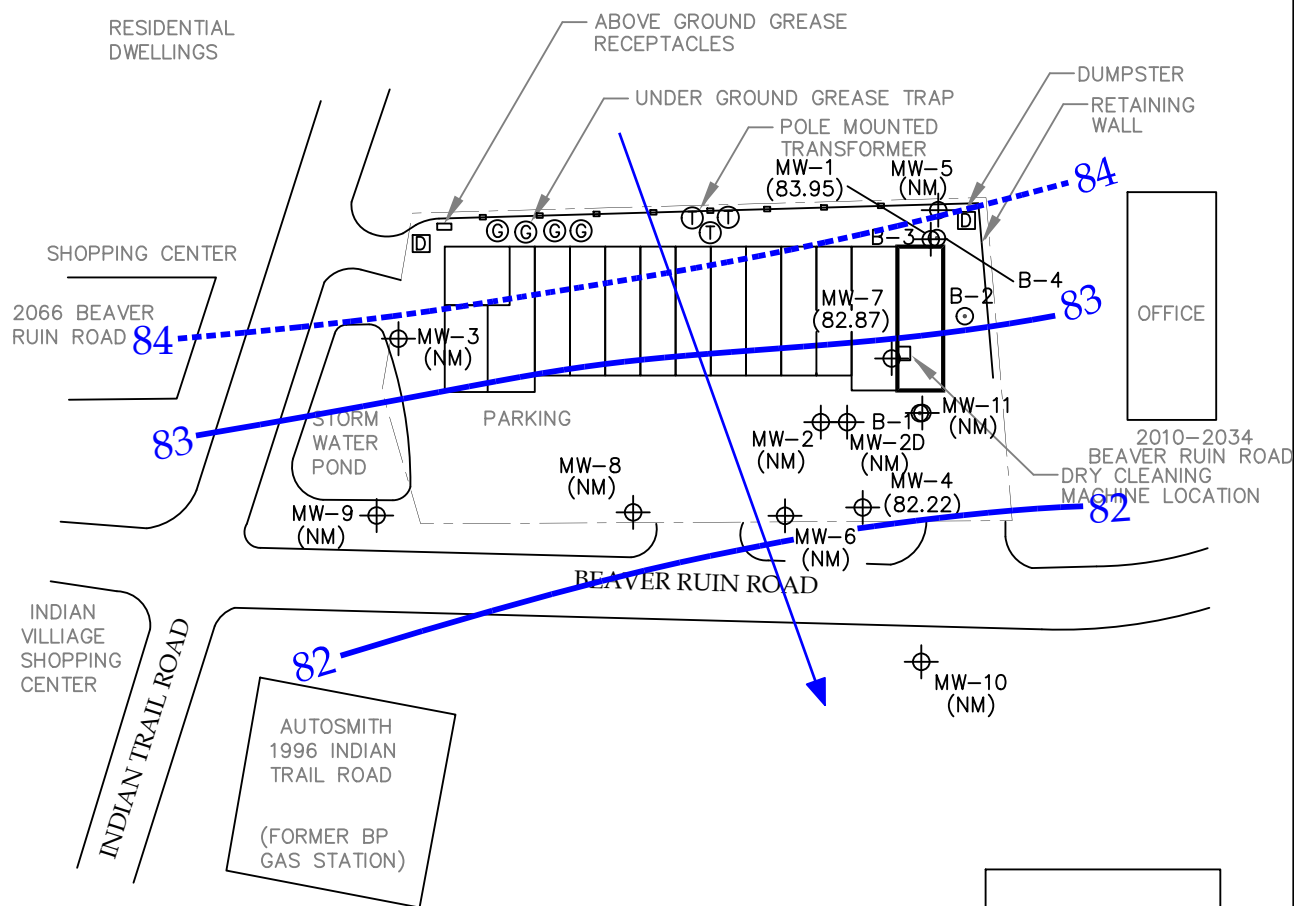
EMA

Environmental Management Associates, LLC

Facility ID.

Figure

1

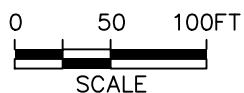



LEGEND:

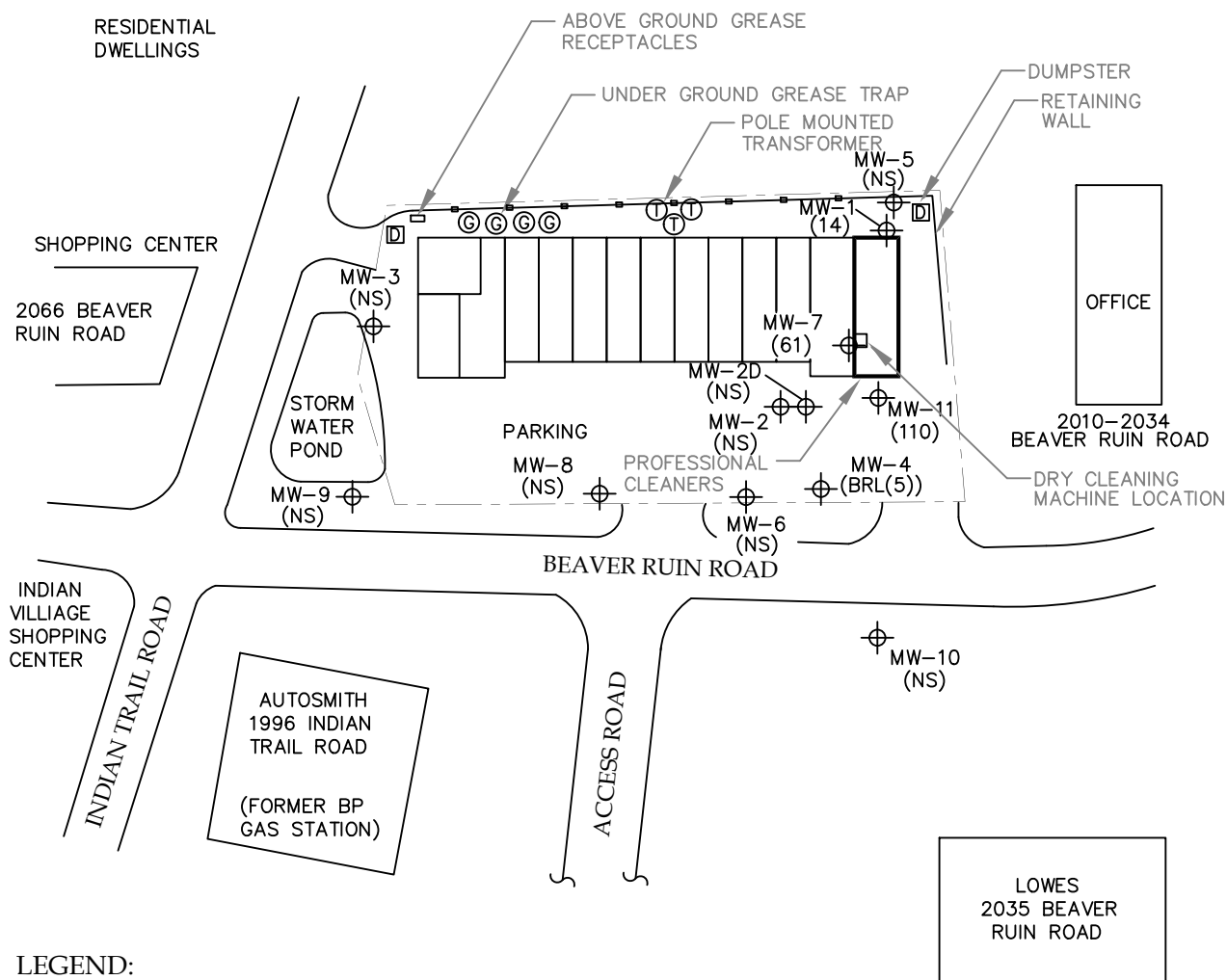
- B-1 ○ BOREHOLE LOCATION
MW-1 ⊕ MONITORING WELL LOCATION
(79.19) GROUNDWATER CONCENTRATION, FT AMSL
(NM) NOT MEASURED
80 — GROUNDWATER CONCENTRATION CONTOUR, FT AMSL
← GROUNDWATER FLOW DIRECTION

NOTE:

BASE MAP CREATED FROM GLE ASSOCIATES, INC
DRAWING 11000-11045 SHEET A-3.



Title	GROUNDWATER CONTOURS AND FLOW DIRECTION - NOVEMBER 2015		
Site	PROFESSIONAL CLEANERS & LINEN SERVICE 2040 Beaver Ruin Road, Norcross, Georgia		
	 EMA	Facility ID.	Figure
	Environmental Management Associates, LLC		2

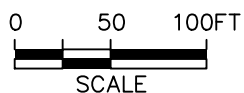



LEGEND:

- MW-1 MONITORING WELL LOCATION
(BRL(5)) BELOW REPORTING LIMITS
NS NOT SAMPLED

NOTES:

- 1.) CONCENTRATIONS ARE IN MICROGRAMS PER LITER.
- 2.) BASE MAP CREATED FROM GLE ASSOCIATES, INC. DRAWING 11000-11045 SHEET A-3.



Title	PCE ANALYTICAL RESULTS NOVEMBER 2015		
Site	PROFESSIONAL CLEANERS & LINEN SERVICE 2040 Beaver Ruin Road, Norcross, Georgia		
	Facility ID.		Figure
	Environmental Management Associates, LLC		3

TABLES

TABLE 1

**GROUNDWATER LEVEL MEASUREMENTS
PROFESSIONAL CLEANERS AND LINEN SERVICE
NORCROSS, GEORGIA**

<i>Well Number</i>	<i>Date Measured</i>	<i>Ground Surface Elevation⁽¹⁾</i>	<i>TOC Elevation⁽¹⁾</i>	<i>Depth to Groundwater (feet BTOC)⁽²⁾</i>	<i>Groundwater Elevation⁽¹⁾</i>
MW-1	7/1/2011	99.59	99.18	15.10	84.08
	7/12/2011	99.59	99.18	15.25	83.93
	8/17/2011	100.41	100.00	15.76	84.24
	3/19/2012	100.41	100.00	17.78	82.22
	4/23/2012	100.41	100.00	18.00	82.00
	7/24/2012	100.41	100.10	18.65	81.45
	10/24/2012	100.41	100.10	19.02	81.08
	12/13/2012	100.41	100.10	19.43	80.67
	2/8/2013	100.41	100.10	18.81	81.29
	5/13/2013	100.41	100.10	17.78	82.32
	10/29/2013	100.41	100.10	15.51	84.59
	11/28/2014	100.41	100.10	16.28	83.82
	6/8/2015	100.41	100.10	15.18	84.92
	11/10/2015	100.41	100.10	16.15	83.95
MW-2	7/1/2011	98.53	97.96	16.50	81.46
	7/12/2011	98.53	97.96	16.63	81.33
	8/17/2011	99.37	98.80	17.30	81.50
	3/19/2012	99.37	98.80	18.43	80.37
	4/23/2012	99.37	98.80	18.59	80.21
	7/24/2012	99.37	98.92	18.70	80.22
	10/24/2012	99.37	98.92	19.50	79.42
	12/13/2012	99.37	98.92	19.83	79.09
	2/8/2013	99.37	98.92	NM	NM
	5/13/2013	99.37	98.92	17.50	81.42
	10/29/2013	99.37	98.92	16.67	82.25
	11/28/2014	99.37	98.92	17.77	81.15
MW-2D	5/3/2013	99.58	99.33	18.05	81.28
	10/29/2013	99.58	99.33	17.21	82.12
MW-3	7/1/2011	98.43	98.00	14.39	83.61
	7/12/2011	98.43	98.00	14.75	83.25
	8/17/2011	99.26	98.83	15.47	83.36
	3/19/2012	99.26	98.83	17.09	81.74
	4/23/2012	99.26	98.83	17.04	81.79
	7/24/2012	99.26	98.83	17.06	81.77
	10/24/2012	99.26	98.83	NM	NM
	12/13/2012	99.26	98.83	18.70	80.13
	2/8/2013	99.26	98.83	17.82	81.01
	5/13/2013	99.26	98.83	15.34	83.49
	11/28/2014	99.26	98.83	15.76	83.07
MW-4	8/17/2011	97.81	97.39	16.70	80.69
	3/19/2012	97.81	97.39	17.71	79.68
	4/23/2012	97.81	97.39	17.87	79.52
	7/24/2012	97.81	97.39	17.94	79.45
	10/24/2012	97.81	97.39	18.55	78.84

TABLE 1

**GROUNDWATER LEVEL MEASUREMENTS
PROFESSIONAL CLEANERS AND LINEN SERVICE
NORCROSS, GEORGIA**

<i>Well Number</i>	<i>Date Measured</i>	<i>Ground Surface Elevation⁽¹⁾</i>	<i>TOC Elevation⁽¹⁾</i>	<i>Depth to Groundwater (feet BTOC)⁽²⁾</i>	<i>Groundwater Elevation⁽¹⁾</i>
MW-4 cont.	12/13/2012	97.81	97.39	19.00	78.39
	2/8/2013	97.81	97.39	18.43	78.96
	5/13/2013	97.81	97.39	16.74	80.65
	10/29/2013	97.81	97.39	16.20	81.19
	11/28/2014	97.81	97.39	16.62	80.77
	6/8/2015	97.81	97.39	15.88	81.51
	11/10/2015	97.81	97.39	15.17	82.22
MW-5	3/19/2012	100.74	100.34	17.85	82.49
	4/23/2012	100.74	100.34	18.12	82.22
	7/24/2012	100.74	100.34	18.61	81.73
	10/24/2012	100.74	100.34	18.99	81.35
	12/13/2012	100.74	100.34	19.38	80.96
	2/8/2013	100.74	100.34	18.84	81.50
	5/13/2013	100.74	100.34	16.83	83.51
	10/29/2013	100.74	100.34	15.47	84.87
	11/28/2014	100.74	100.34	16.20	84.14
MW-6	3/19/2012	97.21	96.81	17.18	79.63
	4/23/2012	97.21	96.81	17.62	79.19
	7/24/2012	97.21	96.81	17.34	79.47
	10/24/2012	97.21	96.81	17.95	78.86
	12/13/2012	97.21	96.81	18.40	78.41
	2/8/2013	97.21	96.81	17.85	78.96
	5/13/2013	97.21	96.81	16.20	80.61
	10/29/2013	97.21	96.81	15.62	81.19
	11/28/2014	97.21	96.81	16.32	80.49
MW-7	3/19/2012	100.89	100.69	19.39	81.30
	4/23/2012	100.89	100.69	19.54	81.15
	7/24/2012	100.89	100.78	19.27	81.51
	10/24/2012	100.89	100.78	20.51	80.27
	12/13/2012	100.89	100.78	20.86	79.92
	2/8/2013	100.89	100.78	20.46	80.32
	5/13/2013	100.89	100.78	18.40	82.38
	10/29/2013	100.89	100.78	17.29	83.49
	11/28/2014	100.89	100.78	17.92	82.86
	6/8/2015	100.89	100.78	17.16	83.62
	11/10/2015	100.89	100.78	17.91	82.87
MW-8	12/13/2012	98.78	98.65	19.97	78.68
	2/8/2013	98.78	98.65	19.44	79.21
	5/13/2013	98.78	98.65	17.52	81.13
	10/29/2013	98.78	98.65	17.07	81.58
	11/28/2014	98.78	98.65	17.66	80.99

TABLE 1

**GROUNDWATER LEVEL MEASUREMENTS
PROFESSIONAL CLEANERS AND LINEN SERVICE
NORCROSS, GEORGIA**

<i>Well Number</i>	<i>Date Measured</i>	<i>Ground Surface Elevation ⁽¹⁾</i>	<i>TOC Elevation ⁽¹⁾</i>	<i>Depth to Groundwater (feet BTOC) ⁽²⁾</i>	<i>Groundwater Elevation ⁽¹⁾</i>
MW-9	12/13/2012	98.78	98.63	19.89	78.74
	2/8/2013	98.78	98.63	19.15	79.48
	5/13/2013	98.78	98.63	17.11	81.52
	10/29/2013	98.78	98.63	16.54	82.09
	11/28/2014	98.78	98.63	17.34	81.29
MW-10	2/12/2013	100.89	100.77	24.29	76.48
	5/13/2013	100.89	100.77	22.51	78.26
	10/29/2013	100.89	100.77	22.00	78.77
	11/28/2014	100.89	100.77	22.73	78.04
MW-11	4/22/2014	NM	NM	22.00	—
	11/28/2014	NM	NM	16.18	—
	5/29/2015	NM	NM	16.78	—
	11/10/2015	NM	NM	17.33	—

Notes:

(1) Top of casing (TOC), ground surface, and groundwater elevations based on an assumed datum. Re-surveyed on August 17, 2011. Modifications made to TOC elevations for MW-1, 2, and 7 on May 24, 2012.

(2) BTOC - below top of casing

TABLE 2

**GROUNDWATER PCE ANALYTICAL DATA
PROFESSIONAL CLEANERS AND LINEN SERVICE
NORCROSS, GEORGIA**

<i>Sample Location</i>	<i>Sampling Period</i>	<i>Sample Date</i>	<i>Analyte</i>	<i>Concentration (µg/L) ⁽¹⁾</i>	<i>Standard ⁽²⁾ (µg/L)</i>
MW-1	Initial Inv.	7/1/2011	PCE	50	5/19/98
	Baseline	4/23/2012	PCE	91/100 ⁽³⁾	
	1st Quarter	7/24/2012	PCE	46	
	2nd Quarter	10/14/2012	PCE	BRL (5)	
	3rd Quarter	2/8/2013	PCE	5	
		10/29/2013	PCE	100	
		11/11/2014	PCE	19	
		1/19/2015	PCE	BRL (5)	
		6/8/2015	PCE	15	
		11/10/2015	PCE	14	
MW-2	Initial Inv.	7/1/2011	PCE	62	5/19/98
	Baseline	3/19/2012	PCE	47	
	1st Quarter	7/24/2012	PCE	41	
	2nd Quarter	10/14/2012	PCE	29/29 ⁽³⁾	
	3rd Quarter	2/8/2013	PCE	36/35 ⁽³⁾	
		10/29/2013	PCE	24	
		8/25/2014	PCE	61	
		11/28/2014	PCE	BRL (5)	
MW-2D	Delineation	4/4/2013	PCE	BRL (5)	
		10/29/2013	PCE	BRL (5)	
MW-3	Initial Inv.	7/1/2011	PCE	BRL (5) ⁽⁴⁾	5/19/98
	Baseline	4/23/2012	PCE	BRL (5)	
	1st Quarter	7/24/2012	PCE	BRL (5)/BRL ⁽³⁾	
	2nd Quarter	10/14/2012	PCE	Not Sampled ⁽⁵⁾	
	3rd Quarter	2/8/2013	PCE	BRL (5)	
	3rd Quarter	11/28/2014	PCE	BRL (5)	
MW-4	Initial Inv.	7/22/2011	PCE	BRL (5)	5/19/98
	Baseline	4/23/2012	PCE	BRL (5)	
	1st Quarter	7/24/2012	PCE	8.9	
	Confirmation	8/23/2012	PCE	8.3	
	2nd Quarter	10/14/2012	PCE	11	
	3rd Quarter	2/8/2013	PCE	11	
		10/29/2013	PCE	140/120 ⁽⁶⁾	
		8/14/2014	PCE	200	
		11/14/2014	PCE	BRL (5)	
		6/8/2015	PCE	31	
		6/8/2015	PCE	BRL (5)	
MW-5	Baseline	3/19/2012	PCE	BRL (5)	5/19/98
	1st Quarter	7/24/2012	PCE	BRL (5)	
	2nd Quarter	10/14/2012	PCE	BRL (5)	
	3rd Quarter	2/8/2013	PCE	11	
	Confirmation	2/18/2013	PCE	5.2	
		10/29/2013	PCE	11	
		11/28/2014	PCE	BRL (5)	

TABLE 2

**GROUNDWATER PCE ANALYTICAL DATA
PROFESSIONAL CLEANERS AND LINEN SERVICE
NORCROSS, GEORGIA**

<i>Sample Location</i>	<i>Sampling Period</i>	<i>Sample Date</i>	<i>Analyte</i>	<i>Concentration (µg/L) ⁽¹⁾</i>	<i>Standard ⁽²⁾ (µg/L)</i>
MW-6	Baseline	3/19/2012	PCE	BRL (5)	5/19/98
	1st Quarter	7/24/2012	PCE	5.2	
	Confirmation	8/23/2012	PCE	BRL (5)	
	2nd Quarter	10/14/2012	PCE	BRL(5)	
	3rd Quarter	2/8/2013	PCE	11	
	Confirmation	2/18/2013	PCE	BRL (5)	
		10/30/2013	PCE	33/25 ⁽⁶⁾	
		8/25/2014	PCE	BRL (5)	
		11/28/2014	PCE	BRL (5)	
MW-7	Baseline	3/19/2012	PCE	82	5/19/98
	1st Quarter	7/24/2012	PCE	31	
	2nd Quarter	10/14/2012	PCE	19	
	3rd Quarter	2/8/2013	PCE	BRL (5)	
		10/29/2013	PCE	37	
		8/25/2014	PCE	62	
		11/28/2014	PCE	58	
		1/19/2015	PCE	BRL (5)	
		6/8/2015	PCE	BRL (5)	
		11/10/2015	PCE	61	
MW-8	Delineation	12/11/2012	PCE	7.9	5/19/98
	Confirmation	12/13/2012	PCE	BRL(5)	
	3rd Quarter	2/8/2013	PCE	BRL (5)	
		10/30/2013	PCE	BRL (5)	
		11/28/2014	PCE	BRL (5)	
MW-9	Delineation	12/11/2012	PCE	BRL (5)	5/19/98
	3rd Quarter	2/8/2013	PCE	BRL(5)	
		10/30/2013	PCE	BRL (5)	
		11/28/2014	PCE	BRL (5)	
MW-10	Delineation	2/12/2013	PCE	6.6	5/19/98
		10/30/2013	PCE	10	
		8/25/2014	PCE	BRL (5)	
		11/28/2014	PCE	BRL (5)	
MW-11	Delineation	4/22/2014	PCE	170	5/19/98
		11/28/2014	PCE	BRL (5)	
		5/29/2015	PCE	51	
		11/10/2015	PCE	110	

Notes:

1) µg/L - micrograms per liter

2) Type 1 Risk Reduction Standard (RRS)/Type 2 RRS/Type 4 RRS for groundwater.

3) Sample result and field duplicate result

4) BRL - Below reporting limit listed in paranthese

5) Insufficient groundwater available for sampling.

6) Sample result and confirmation sample result.

APPENDIX A
GROUNDWATER SAMPLING FORMS

Project Data:

Project Name: Professional Cleaners

Ref. No.: 559

Date: 11/10/2015

Personnel BC/JS

Monitoring Well Data:

Well No.:

Mu-1 Do

Screen Length (ft):

10

Measurement Point:

Top

Depth to Pump Intake (ft)⁽¹⁾:

21 Feb

Constructed Well Depth (ft):

7301

Well Diameter, D (in):

22

Measured Well Depth (ft):

230.

Well Screen Volume, V_s (mL)⁽²⁾:

Calluna vulgaris

Depth of Sediment (ft):

1

Initial Depth to Water (ft):

2/15

2

Dracodrom

Pumping

Depth -

from Initial

Time (ml/min)

 (ft) (f_t)

Ha

Temperature
°C

Conductivity
(mS/cm)ORP
(mV)DO
(mσ/I.)

Turbidity
(NTU)

Volume
Purged, V_p
(mL.)

No. of Well
Screen Volumes
Purged⁽⁴⁾

[illegible]

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 5-foot screen length. $V_s = \pi (D/2)^2 (5 \times 12) (2.54)^3$
- (3) The drawdown from the initial water level should not exceed 0.3 ft.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p / V_s .

Project Data:

Project Name: Professional Cleaners

Ref. No.: 559

Date: 11/10/2015

Personnel: BC/JS

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Monitoring Well Data:

Well No.:

MW-4

Measurement Point:

Constructed Well Depth (ft):

70' 24.0'

Measured Well Depth (ft):

Depth of Sediment (ft):

21.0'

Screen Length (ft):

10'

Depth to Pump Intake (ft)⁽¹⁾:

51.8'

Well Diameter, D (in):

Well Screen Volume, V_s (mL)⁽²⁾:

Initial Depth to Water (ft):

1.6 gal/min / 6056 min

15.17

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, V _p (mL)	No. of Well Screen Volumes Purged ⁽⁴⁾
1036	150	15.17		7.8	20.1	1,051	290	6.02	1.3	150	
1040		15.20		3.80	11.8	1,040	300	5.24	1.3	600	
1043		15.25		3.79	11.9	1,069	315	4.55	2.6	450	
1048		15.30		3.48	20.1	1,048	770	4.70	8.8	250	
1050		15.28		3.45	20.2	1,050	325	4.68	8.7	300	
1055		15.33		3.45	20.0	1,051	327	4.70	8.7	750	
										3000	41

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 5-foot screen length, $V_s = \pi(D/2)^2(5)(12)(2.54)^3$
- (3) The drawdown from the initial water level should not exceed 0.3 ft.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s .

Project Data:

Project Name: Professional Cleaners

Ref. No.: 559

Date: 11/10/2015

Personnel: BQ/JS

Monitoring Well Data:

Well No.: MW-7

Measurement Point:

Constructed Well Depth (ft):

Measured Well Depth (ft):

Depth of Sediment (ft):

Screen Length (ft):

Depth to Pump Intake (ft)⁽¹⁾:

Well Diameter, D (in):

Well Screen Volume, V_s (mL)⁽²⁾:

Initial Depth to Water (ft):

[illegible]

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 5-foot screen length. $V_s = \pi (D/2)^2 \times (5 \times 12) \times (2.54)^3$
- (3) The drawdown from the initial water level should not exceed 0.3 ft.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p / V_s .

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Professional Cleaners
 Ref. No.: 559

Date: 11/10/2015
 Personnel: BC/JS

Monitoring Well Data:

Well No.: MW-11
 Measurement Point: T6C
 Constructed Well Depth (ft): 27'
 Measured Well Depth (ft): 27'
 Depth of Sediment (ft): 0

Screen Length (ft): 10'
 Depth to Pump Intake (ft)⁽¹⁾: 5' F.B.
 Well Diameter, D (in): 2"
 Well Screen Volume, V_s (mL)⁽²⁾: 1.6 gallon / 6050 mL
 Initial Depth to Water (ft): 17.33

Time 10:00	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	pH	Temperature °C	Conductivity µS (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, V _p (mL)	No. of Well Screen Volumes Purged ⁽⁴⁾
10:10	165	17.33		4.67	18.4	267	256	6.25	13.6	1650	
10:12		17.38		4.60	20.8	107.8	245	6.16	22.4	330	
10:15		17.40		4.41	21.2	96.2	240	6.12	18.4	495	
10:18		17.51		4.31	21.3	90.2	229	5.85	14.6	495	
10:20		17.49		4.20	21.4	83.8	226	5.64	11.2	330	
10:25		17.55		4.24	20.8	84.1	220	5.50	9.1	825	
10:30		17.58		4.24	20.9	82.6	223	5.68	8.0	325	
										4950	21

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 5-foot screen length, $V_s = P \cdot (D/2)^2 \cdot (5 \cdot 12) \cdot (2.54)^3$
- (3) The drawdown from the initial water level should not exceed 0.3 ft.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p / V_s .

APPENDIX B
ANALYTICAL LABORATORY REPORT



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

November 12, 2015

Brent Cortelloni
Environmental Management Associates, LLC
5262 Belle Wood Court
Buford Georgia 30518

TEL: (770) 271-4628
FAX: (770) 271-8944

RE: Professional Cleaners

Dear Brent Cortelloni:

Order No: 1511922

Analytical Environmental Services, Inc. received 6 samples on 11/10/2015 12:57:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/15-06/30/16.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/17.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic
Project Manager



TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

Work Order

1511922

Date: _____ Page _____ of _____

COMPANY: EMM/BCL		ADDRESS:						ANALYSIS REQUESTED										Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.		No # of Containers
PHONE:		FAX:						PCE												
SAMPLED BY: D. Askeberry / T. Schuller		SIGNATURE: [Signature]																		
#	SAMPLE ID	SAMPLED		Grab	Composite	Matrix (See codes)	PRESERVATION (See codes)										REMARKS			
		DATE	TIME																	
1	NW-1	11-10-15	10:48	X		GW	X										PCE - tetrachloroethene			
2	↓ 4	↓	10:55	↓		↓	↓													
3	↓ 7		10:16																	
4	↓ 11		10:30																	
5	Dup		—																	
6	TSP Blank																			
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
RELINQUISHED BY		DATE/TIME		RECEIVED BY		DATE/TIME		PROJECT INFORMATION										RECEIPT		
1: [Signature]		11-10-15 10:55		1: [Signature]		11/10/15 12:57		PROJECT NAME: Professional Cleaners										Total # of Containers		
2:				2:				PROJECT #: 559												
3:				3:				SITE ADDRESS:												
								SEND REPORT TO:												
SPECIAL INSTRUCTIONS/COMMENTS:				SHIPMENT METHOD				INVOICE TO: (IF DIFFERENT FROM ABOVE)												
				OUT / / VIA:																
				IN / / VIA:																
				CLIENT FedEx UPS MAIL COURIER																
				GREYHOUND OTHER																
								QUOTE #:										PO#:		
SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.																				

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

Page 2 of 13

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc

Date: 12-Nov-15

Client: Environmental Management Associates, LLC
Project Name: Professional Cleaners
Lab ID: 1511922-001

Client Sample ID: MW-1
Collection Date: 11/10/2015 10:48:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				(SW5030B)				
Tetrachloroethene	14	5.0		ug/L	215827	1	11/12/2015 00:07	MD
Surr: 4-Bromofluorobenzene	80.4	70.7-125		%REC	215827	1	11/12/2015 00:07	MD
Surr: Dibromofluoromethane	110	82.2-120		%REC	215827	1	11/12/2015 00:07	MD
Surr: Toluene-d8	97.1	81.8-120		%REC	215827	1	11/12/2015 00:07	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc**Date:** 12-Nov-15

Client: Environmental Management Associates, LLC
Project Name: Professional Cleaners
Lab ID: 1511922-002

Client Sample ID: MW-4
Collection Date: 11/10/2015 10:55:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				(SW5030B)				
Tetrachloroethene	BRL	5.0		ug/L	215827	1	11/12/2015 01:36	MD
Surr: 4-Bromofluorobenzene	80.9	70.7-125		%REC	215827	1	11/12/2015 01:36	MD
Surr: Dibromofluoromethane	108	82.2-120		%REC	215827	1	11/12/2015 01:36	MD
Surr: Toluene-d8	98	81.8-120		%REC	215827	1	11/12/2015 01:36	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc**Date:** 12-Nov-15

Client: Environmental Management Associates, LLC
Project Name: Professional Cleaners
Lab ID: 1511922-003

Client Sample ID: MW-7
Collection Date: 11/10/2015 10:16:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				(SW5030B)				
Tetrachloroethene	61	5.0		ug/L	215827	1	11/12/2015 02:06	MD
Surr: 4-Bromofluorobenzene	81.2	70.7-125		%REC	215827	1	11/12/2015 02:06	MD
Surr: Dibromofluoromethane	106	82.2-120		%REC	215827	1	11/12/2015 02:06	MD
Surr: Toluene-d8	98.2	81.8-120		%REC	215827	1	11/12/2015 02:06	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc**Date:** 12-Nov-15

Client: Environmental Management Associates, LLC
Project Name: Professional Cleaners
Lab ID: 1511922-004

Client Sample ID: MW-11
Collection Date: 11/10/2015 10:30:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				(SW5030B)				
Tetrachloroethene	110	5.0		ug/L	215827	1	11/12/2015 02:36	MD
Surr: 4-Bromofluorobenzene	85.9	70.7-125		%REC	215827	1	11/12/2015 02:36	MD
Surr: Dibromofluoromethane	107	82.2-120		%REC	215827	1	11/12/2015 02:36	MD
Surr: Toluene-d8	97.8	81.8-120		%REC	215827	1	11/12/2015 02:36	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 12-Nov-15

Client:	Environmental Management Associates, LLC	Client Sample ID:	DUP
Project Name:	Professional Cleaners	Collection Date:	11/10/2015
Lab ID:	1511922-005	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				(SW5030B)				
Tetrachloroethene	15	5.0		ug/L	215827	1	11/12/2015 03:06	MD
Surr: 4-Bromofluorobenzene	81.8	70.7-125		%REC	215827	1	11/12/2015 03:06	MD
Surr: Dibromofluoromethane	106	82.2-120		%REC	215827	1	11/12/2015 03:06	MD
Surr: Toluene-d8	96.3	81.8-120		%REC	215827	1	11/12/2015 03:06	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 12-Nov-15

Client:	Environmental Management Associates, LLC	Client Sample ID:	TRIP BLANK
Project Name:	Professional Cleaners	Collection Date:	11/10/2015
Lab ID:	1511922-006	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				(SW5030B)				
Tetrachloroethene	BRL	5.0		ug/L	215827	1	11/12/2015 03:36	MD
Surr: 4-Bromofluorobenzene	81	70.7-125		%REC	215827	1	11/12/2015 03:36	MD
Surr: Dibromofluoromethane	112	82.2-120		%REC	215827	1	11/12/2015 03:36	MD
Surr: Toluene-d8	98.9	81.8-120		%REC	215827	1	11/12/2015 03:36	MD

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client EMA/BC

Work Order Number 1511922

Checklist completed by [Signature] 11-10-15
Signature Date

Carrier name: FedEx ☐ UPS ☐ Courier ☐ Client ☒ US Mail ☐ Other ☐

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp Blank temperature in compliance? ($0^{\circ} \leq 6^{\circ}C$) * Yes ☒ No ☐

Cooler #1 35°C Cooler #2 ☐ Cooler #3 ☐ Cooler #4 ☐ Cooler #5 ☐ Cooler #6 ☐

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Was TAT marked on the COC? Yes ☒ No ☐

Proceed with Standard TAT as per project history? Yes ☐ No ☐ Not Applicable ☒

Water - VOA vials have zero headspace? No VOA vials submitted ☐ Yes ☒ No ☐

Water - pH acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Adjusted? ☐ Checked by ☐

Sample Condition: Good ☒ Other(Explain) ☐

(For diffusive samples or AIHA lead) Is a known blank included? Yes ☐ No ☒

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Aes_server\\Sample Receipt\\My Documents\\COCs and pH Adjustment Sheet\\Sample_Cooler_Recipt_Checklist_Rev1.rtf

Client: Environmental Management Associates, LLC
Project Name: Professional Cleaners
Workorder: 1511922

ANALYTICAL QC SUMMARY REPORT

BatchID: 215827

Sample ID: MB-215827	Client ID:					Units: ug/L	Prep Date: 11/12/2015	Run No: 304170			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B					BatchID: 215827	Analysis Date: 11/12/2015	Seq No: 6512072			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1,1-Trichloroethane	BRL	5.0
1,1,2,2-Tetrachloroethane	BRL	5.0
1,1,2-Trichloroethane	BRL	5.0
1,1-Dichloroethane	BRL	5.0
1,1-Dichloroethene	BRL	5.0
1,2,4-Trichlorobenzene	BRL	5.0
1,2-Dibromo-3-chloropropane	BRL	5.0
1,2-Dibromoethane	BRL	5.0
1,2-Dichlorobenzene	BRL	5.0
1,2-Dichloroethane	BRL	5.0
1,2-Dichloropropane	BRL	5.0
1,3-Dichlorobenzene	BRL	5.0
1,4-Dichlorobenzene	BRL	5.0
2-Butanone	BRL	50
2-Hexanone	BRL	10
4-Methyl-2-pentanone	BRL	10
Acetone	BRL	50
Benzene	BRL	5.0
Bromodichloromethane	BRL	5.0
Bromoform	BRL	5.0
Bromomethane	BRL	5.0
Carbon disulfide	BRL	5.0
Carbon tetrachloride	BRL	5.0
Chlorobenzene	BRL	5.0
Chloroethane	BRL	10
Chloroform	BRL	5.0
Chloromethane	BRL	10

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Environmental Management Associates, LLC
Project Name: Professional Cleaners
Workorder: 1511922

ANALYTICAL QC SUMMARY REPORT**BatchID: 215827**

Sample ID: MB-215827	Client ID:					Units: ug/L	Prep Date: 11/12/2015		Run No: 304170		
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS	SW8260B				BatchID: 215827	Analysis Date: 11/12/2015		Seq No: 6512072		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	5.0									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	41.25	0	50.00		82.5	70.7	125				
Surr: Dibromofluoromethane	54.95	0	50.00		110	82.2	120				
Surr: Toluene-d8	50.39	0	50.00		101	81.8	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Environmental Management Associates, LLC
Project Name: Professional Cleaners
Workorder: 1511922

ANALYTICAL QC SUMMARY REPORT**BatchID: 215827**

Sample ID: LCS-215827	Client ID:					Units: ug/L	Prep Date: 11/12/2015	Run No: 304170			
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B					BatchID: 215827	Analysis Date: 11/12/2015	Seq No: 6512190			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	54.76	5.0	50.00		110	64.2	137				
Benzene	53.50	5.0	50.00		107	72.8	128				
Chlorobenzene	55.44	5.0	50.00		111	72.3	126				
Toluene	51.74	5.0	50.00		103	74.9	127				
Trichloroethene	59.45	5.0	50.00		119	70.5	134				
Surr: 4-Bromofluorobenzene	41.29	0	50.00		82.6	70.7	125				
Surr: Dibromofluoromethane	50.10	0	50.00		100	82.2	120				
Surr: Toluene-d8	45.63	0	50.00		91.3	81.8	120				

Sample ID: 1511922-001AMS	Client ID: MW-1				Units: ug/L	Prep Date: 11/12/2015	Run No: 304215				
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B				BatchID: 215827	Analysis Date: 11/12/2015	Seq No: 6512611				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	44.65	5.0	50.00		89.3	60.5	156				
Benzene	52.41	5.0	50.00		105	70	135				
Chlorobenzene	56.25	5.0	50.00		112	70.5	132				
Toluene	51.05	5.0	50.00		102	70.5	137				
Trichloroethene	55.82	5.0	50.00		112	71.8	139				
Surr: 4-Bromofluorobenzene	40.82	0	50.00		81.6	70.7	125				
Surr: Dibromofluoromethane	51.88	0	50.00		104	82.2	120				
Surr: Toluene-d8	48.85	0	50.00		97.7	81.8	120				

Sample ID: 1511922-001AMSD	Client ID: MW-1	Units: ug/L			Prep Date: 11/12/2015	Run No: 304215					
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 215827			Analysis Date: 11/12/2015	Seq No: 6512612					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	45.67	5.0	50.00		91.3	60.5	156	44.65	2.26	20	
Benzene	51.24	5.0	50.00		102	70	135	52.41	2.26	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Environmental Management Associates, LLC
Project Name: Professional Cleaners
Workorder: 1511922

ANALYTICAL QC SUMMARY REPORT

BatchID: 215827

Sample ID: 1511922-001AMSD	Client ID: MW-1	Units: ug/L	Prep Date: 11/12/2015	Run No: 304215							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 215827	Analysis Date: 11/12/2015	Seq No: 6512612							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	56.23	5.0	50.00		112	70.5	132	56.25	0.036	20	
Toluene	48.62	5.0	50.00		97.2	70.5	137	51.05	4.88	20	
Trichloroethene	56.74	5.0	50.00		113	71.8	139	55.82	1.63	20	
Surr: 4-Bromofluorobenzene	41.74	0	50.00		83.5	70.7	125	40.82	0	0	
Surr: Dibromofluoromethane	52.63	0	50.00		105	82.2	120	51.88	0	0	
Surr: Toluene-d8	48.06	0	50.00		96.1	81.8	120	48.85	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

APPENDIX C
UPDATED COST ESTIMATE

Activity	Initial Estimate			Cost to Date	Updated Remaining Costs		
	Units	Unit Cost	Sub-Total		Units	Unit Cost	Sub-Total
<u>Consulting</u>							
VRP Application/Report (completed)			\$ 3,300.00				\$ -
Additional Groundwater Delineation Investigations ⁽¹⁾			\$ 10,000.00				\$ -
Semiannual Sampling/Progress Reports ⁽²⁾			\$ 10,000.00				\$ -
File Deed Restriction			\$ 2,500.00				\$ 1,000.00
Voluntary CSR Report			\$ 6,800.00				\$ -
		sub-total	\$ 32,600.00			sub-total	\$ 1,000.00
<u>Remediation</u>							
ISCO Remediation			\$ 34,000.00	--		\$ 46,000.00	
		Total Estimate Range	\$ 66,600.00	--		\$ 78,600.00	
					\$ 125,872.50		\$ 1,000.00

1) Originally based on only six wells. A total of 12 wells installed.

**PG OVERSIGHT SUMMARY
PROFESSIONAL CLEANERS AND LINEN SERVICE
NORCROSS, GEORGIA**

PG Summary of Time

Units Unit Cost Sub-Total

6/18/15 to 12/1/15

Site Walk

4 \$ 85.00 \$ 340.00

Prepare Progress Report 6

8 \$ 85.00 \$ 680.00

sub-total \$ 1,020.00

**INVOICE SUMMARY SINCE LAST SUBMITTAL
PROFESSIONAL CLEANERS AND LINEN SERVICE
NORCROSS, GEORGIA**

<i>Invoice</i>	<i>Amount</i>	<i>Scope of Work</i>
559B-1115	\$ 2,500.00	Limited Semi-annual sampling event/Site walk with EPD 11/25/15
	<hr/>	
	\$ 2,500.00	TOTAL