BENCHMARK
ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

September 18, 2012

Ms. Sherrel Henry
Remedial Project Manager
U.S. Environmental Protection Agency
290 Broadway – 20th Floor
New York, New York 10007-1866

Re: Peter Cooper Markhams Site, Dayton, NY
June 2012 Post-Remedial Groundwater Monitoring
Monitoring & Maintenance Summary Report June 2012

Dear Ms. Henry:

On behalf of the cooperating Potentially Responsible Parties (cPRPs) for the above-referenced site, Benchmark Environmental Engineering & Science, PLLC, has prepared this letter report to transmit the results of the June 2012 post-remedial groundwater monitoring event at the Peter Cooper Markhams Site in Dayton, New York (see Figure 1). A monitoring and maintenance summary is also included in this report. The work was performed in accordance with our approved (June 2009) Post-Remedial Operation, Maintenance and Monitoring (OM&M) Plan. Groundwater and surface water monitoring requirements are presented on Table 1.

FIELD SAMPLING PROCEDURE

On June 26, 2012, Benchmark staff collected a round of static water level measurements from the seven monitoring wells shown on Figure 2; measurements and groundwater elevations are summarized in Table 2. Groundwater samples were collected from on-site monitoring wells MW-5S, MW-7S, MW-8S, and MW-9S. No surface water samples were collected from Wetland F due to dry conditions.

The monitoring wells were sampled using a Mini-Typhoon® submersible pump and dedicated tubing in accordance with low-flow groundwater purging procedures. Field measurements for pH, Eh, specific conductance, temperature, turbidity, and visual/ olfactory observations were recorded and monitored for stabilization. Purging was considered complete when pH, specific conductivity, and temperature stabilized and the turbidity measured below or stabilized above 50 NTU. Stability is defined as the variation between field measurements of 10 percent or less with no overall upward or downward trend in the measurements. Once the field parameters stabilized, groundwater samples were collected and analyzed for the parameters presented in Table 1. Immediately following groundwater sample collection, field measurements for pH, specific conductance, temperature, turbidity, Eh, and visual/olfactory observations were recorded. The submersible pump was decontaminated using Alconox and water following sample collection activities at each well.

Attachment 1 includes sample collection logs. All water samples were transferred to laboratory supplied, pre-preserved sample containers and transported under chain-of-custody command to Test America Laboratories, Inc. for analysis of total metals, including arsenic, chromium,

2558 Hamburg Turnpike, Suite 300 | Buffalo, NY 14218
phone: (716) 856-0599 | fax: (716) 856-0583

manganese, iron, and hexavalent chromium; soluble (filtered) metals samples were collected if turbidity was above 50 NTU. Samples were also collected for ammonia, nitrate, alkalinity, and total sulfide.

ANALYTICAL RESULTS

Attachment 2 includes the Test America analytical data package for the June 2012 sampling event. Compounds detected above method detection limits are shown on Table 3 with their associated sample concentrations. NYSDEC Groundwater Quality Standards and Guidance Values (GWQS/GV; TOGS 1.1.1, June 1998) are presented for comparison. Concentrations exceeding the GWQS/GVs are highlighted.

As indicated on Table 3, sample concentrations were reported as non-detect or below GWQS/GV at all of the monitored locations with the exception of manganese at MW-5S and MW-8S and iron at MW-7S.

HISTORICAL DATA

Table 3 includes groundwater monitoring results for past monitoring events. In general, the data indicate similar concentrations for these parameters at each of the monitoring locations.

DATA QUALITY

Site-specific quality control (QC) sampling during each event included the collection of one blind duplicate sample (collected from MW-5S) and one matrix spike/matrix spike duplicate (MS/MSD) sample (collected from MW-9S) for total metal analysis only. In general, internal laboratory and site-specific QC samples indicate satisfactory analytical accuracy and precision.

GROUNDWATER ELEVATION DATA

Groundwater monitoring includes a round of static water level measurements from seven monitoring wells across the site. Table 2 includes groundwater elevation data for the 2012 monitoring year. An isopotential map representing the shallow groundwater was prepared from the June 26, 2012 depth-to-groundwater measurements and is presented as Figure 3. Based on those measurements, the inferred groundwater flow directions indicate that shallow groundwater migrates to the west towards wetland F, which is consistent with observations recorded during the site Remedial Investigation.

ANNUAL MAINTENANCE SUMMARY REPORT

Post remedial site inspections were performed during each groundwater monitoring event (June 2009, December 2009, May 2010, June 2011 and June 2012). Inspection reports indicated no irregularities or changes to the property access or security. The final cover system appears in good condition, with the gas vent monitoring system intact and operational. Overgrown vegetation near and along access paths to the monitoring well locations was cut and will be re-mowed prior to the 2013 sampling event. A copy of the Field Inspection Form including site photos is provided in Attachment 3.

ENVIRONMENTAL EASEMENT

All aspects of the Environmental Easement remain unchanged. A copy of the New York State Department of Environmental Conservation Institutional and Engineering Certification Form is provided in Attachment 3 of this report.

CONCLUSIONS

The groundwater monitoring data from each monitoring event indicate no significant impact by leaching from the containment cell area into the water table. In addition, no toxic metals (arsenic, chromium, hexavalent chromium) were detected above their representative GWQS/GVs at any of the sample locations.

Please contact us if you have any questions or require additional information.

Sincerely,
Benchmark Environmental Engineering & Science, PLLC

Thomas H. Forbes, P.E.
Principal Engineer

Att.

Cc: M. Joy
H. Killeen
K. McMahon
J. Wittenborn
M. Moore (NYSDEC)

File: 0021-003-500

TABLES

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 1

MONITORING PROGRAM REQUIREMENTS

June 2012 Monitoring Event
Peter Cooper Markhams Site
Dayton, New York

Sample Location	Frequency	Parameters										
		DTW	Field [1]	Total Metals [2]					Water Quality			
				As	Cr	Hex. Cr.	Mn	Fe	Ammonia	Nitrate	Alkalinity	T. Sulfide
Groundwater												
MW-2SR (cross-gradient)	Annual	X										
MW-4S		X										
MW-5S		X	X	X	X	X	X	X	X	X	X	X
MW-6S		X										
MW-7S		X	X	X	X	X	X	X	X	X	X	X
MW-8S		X	X	X	X	X	X	X	X	X	X	X
MW-9S (upgradient)		X	X	X	X	X	X	X	X	X	X	X
Surface Water												
Wetland F (surface water)	Annual		X	X	X	X	X	X	X	X	X	X
QA/QC Samples [3]												
Blind Duplicate	Annual			X	X	X	X	X				
Matrix Spike				X	X	X	X	X				
Matrix Spike Duplicate				X	X	X	X	X				

Notes:

1. Field measurements include: pH, temperature, specific conductance, turbidity, Eh
2. If field measured turbidity is greater than 50 NTU, dissolved metals will also be collected.
3. QA/QC samples will be collected at a frequency of 1 per 20 for each matrix.
4. DTW = depth to water

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TABLE 2

SUMMARY OF GROUNDWATER ELEVATIONS

Monitoring Event
Peter Cooper Markhams Site
Dayton, New York

Location	TOR Elevation (fmsl)	06/27/12	
		DTW (fbTOR)	GWE (fmsl)
MW-2SR	1313.33	8.19	1305.14
MW-4S	1313.11	9.63	1303.48
MW-5S	1302.70	4.21	1298.49
MW-6S	1315.47	14.39	1301.08
MW-7S	1312.82	14.20	1298.62
MW-8S	1304.10	5.59	1298.51
MW-9S	1314.13	6.57	1307.56

Notes:

1. DTW = depth to water
2. fbTOR = feet below top of riser
3. fmsl = feet above mean sea level
4. GWE = groundwater elevation
5. TOR = top of riser

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TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS [1,2]

June 2012 Monitoring Event
Peter Cooper Markhams Site
Dayton, New York

Parameter	Monitoring Location and Sample Collection Date																								GWQS [4]
	MW-5S [5]												MW-7S												
	04/25/02		06/19/09		12/30/09		05/28/10		06/22/11		06/26/12		04/24/02		06/19/09		12/30/09		05/28/10		06/22/11		06/26/12		
Field Measurements [3]:																									
Sample No.	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	--
pH (units)	--	6.81	6.75	6.78	6.58	6.68	6.80	6.86	6.90	7.00	6.88	6.88	--	6.80	6.74	6.79	6.77	6.82	6.79	6.78	6.31	6.41	6.80	6.78	**6.5 - 8.5**
Temperature (°C)	--	7.14	11.4	11.7	6.3	6.2	14.3	14.9	14.2	14.5	12.8	13.2	--	8.77	9.6	10.1	5.4	7.7	15.0	15.1	13.7	13.4	9.8	9.7	**NA**
Sp. Conductance (mS)	--	822	1004	993	1099	1090	985	966	1035	1029	1005	1008	--	1959	1753	1754	1804	1799	1687	1785	1771	1660	1786	1776	**NA**
Turbidity (NTU)	--	2	4.6	2.4	2.9	2.9	37	5.47	4.29	3.11	4.04	3.42	--	12.4	>1000	180	405	537	190	27	96.8	40.4	47.6	49.4	**NA**
Eh (mV)	--	67.3	69	70	-29	-20	-38	21	-9	15	15	30	--	170	-56	-62	-62	-64	-83	-114	-86	-92	-63	-66	**NA**
Wet Chemistry (mg/L):																									
Alkalinity, Total	NA		538 D		470 D		471 D		478		473		NA		519 D		586 D		446 D		438		437		**NA**
Ammonia	ND		ND		0.047		ND		ND		0.2		ND		0.063		0.119		0.039 C		ND		ND		**2**
Nitrate (as Nitrogen)	2.8		0.271		0.347		0.443 CF6		ND		0.23		ND		ND		ND		ND		ND		ND		**10**
Sulfide, Total	NA		ND		ND		ND		ND		ND		NA		ND		ND		ND		ND		ND		**0.05**
Total Inorganic Compounds (mg/L):																									
Chromium	ND		0.0056		ND		ND		0.0064		0.005		ND		0.0055		0.0050		0.0046		0.0056		0.0057		**0.05**
Hexavalent Chromium	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.05**
Manganese	NA		**1.61**		**1.45**		**1.50**		**1.80**		**1.6**		NA		0.264		**0.428**		0.213		0.200		0.21		**0.3**
Iron	NA		**0.408**		0.128		**0.508**		**0.560**		0.2		NA		**104**		**83.3**		**17.8**		**25.0**		**17.8**		**0.3**
Soluble Inorganic Compounds (mg/L):																									
Chromium	NA		NA		NA		NA		NA		NA		NA		0.005 P		0.005 P		0.0043		0.0056		NA		**0.05**
Manganese	NA		NA		NA		NA		NA		NA		NA		0.206 P		0.186 P		0.193		0.2		NA		**0.3**
Iron	NA		NA		NA		NA		NA		NA		NA		ND		ND		**10.8 CF6**		**10.2**		NA		**0.5**

Notes:

1. Only those compounds detected above the method detection limit at a minimum of one sample location are reported in this table.
2. Shaded and bolded values represent an exceedance of the GWQS/GV.
3. Field measurements were collected immediately before and after groundwater sample collection.
4. NYSDEC Class "GA" Groundwater Quality Standards (GWQS) per 6 NYCRR Part 703.
5. Site-specific QA/QC collected from MW-9S (MS/MSD) (June 2012).
6. Sample location dry

Definitions:

J = Estimated value
NA = Not analyzed
ND = Parameter was not detected above laboratory reporting limit.
D = Dilution required due to high concentration of target analyte(s).
P = Sample filtered in the laboratory
CF6 = Results confirmed by reanalysis.

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TABLE 3 (continued)

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS [1,2]

June 2012 Monitoring Event
Peter Cooper Markhams Site
Dayton, New York

Parameter	MW-8S												MW-9S												GWQS [4]
	04/23/02		06/19/09		12/30/09		05/28/10		06/22/11		06/26/12		04/23/02		06/19/09		12/30/09		05/28/10		06/22/11		06/26/12		
Field Measurements [3]:																									
Sample No.	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	--
pH (units)	--	6.90	6.90	6.92	6.65	6.70	7.04	**6.25**	6.67	6.72	6.89	6.97	--	7.36	**6.48**	6.52	6.84	6.79	7.71	6.78	**6.31**	**6.38**	6.88	7.11	**6.5 - 8.5**
Temperature (°C)	--	7.6	11.5	12.2	6.9	6.9	16.1	12.7	13.5	14.3	12.0	12.8	--	6.02	12.2	12.6	6.5	5.4	12.2	12.4	15.7	16.1	13.0	13.4	**NA**
Sp. Conductance (mS)	--	755	754	764	767	767	653	635	886	879	822	809	--	540	337	337	369	369	402	299	266	280	297	274	**NA**
Turbidity (NTU)	--	17	32	22	30	19	63	5.38	34.6	20	11.3	7.96	--	11.2	6.2	4	2.43	2.02	18.6	2.98	7.26	9.45	9.51	5.84	**NA**
Eh (mV)	--	4.6	80	81	7	15	21	41	48	59	4	72	--	1.8	93	90	52	56	4	50	54	80	48	23	**NA**
Wet Chemistry (mg/L):																									
Alkalinity, Total	NA		291 D		285 D		300 D		355		372		NA		98.4 D		98.8 D		73.5 C		39.1		82.4		**NA**
Ammonia	0.34		0.038		0.04		0.042		0.028		ND		ND < 10		ND		0.029		ND		ND		ND		**2**
Nitrate (as Nitrogen)	**14.6**		9.48 D		0.543		1.98		2.3		3.8		9.3		7.19 D		**11.1 D**		**12.1 D**		**13.8**		5.8		**10**
Sulfide, Total	NA		ND		ND		ND		ND		ND		NA		ND		ND		ND		ND		ND		**0.05**
Total Inorganic Compounds (mg/L):																									
Chromium	ND		ND		ND		ND		0.0093		0.0044		ND		0.0051		ND		ND		ND		ND		**0.05**
Hexavalent Chromium	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.05**
Manganese	NA		**19.6**		**1.54**		**2.34**		**14.30**		**6**		NA		**1.54**		0.005		0.004		0.008		0.0046		**0.3**
Iron	NA		**1.93**		ND		0.088		**0.61**		0.15		NA		**0.322**		ND		0.076		0.077		0.057		**0.3**
Soluble Inorganic Compounds (mg/L):																									
Chromium	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.05**
Manganese	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.3**
Iron	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		**0.5**

Notes:

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2. Shaded and bolded values represent an exceedance of the GWQS/GV.
3. Field measurements were collected immediately before and after groundwater sample collection.
4. NYSDEC Class "GA" Groundwater Quality Standards (GWQS) per 6 NYCRR Part 703.
5. Site-specific QA/QC collected from MW-9S (MS/MSD) (June 2012).
6. Sample location dry

Definitions:

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NA = Not analyzed
ND = Parameter was not detected above laboratory reporting limit.
D = Dilution required due to high concentration of target analyte(s).
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CF6 = Results confirmed by reanalysis.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 3 (continued)

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS [1,2]

June 2012 Monitoring Event
Peter Cooper Markhams Site
Dayton, New York

Parameter	Wetland-F						GWQS [4]
	06/19/09		12/30/09	05/28/10	06/22/11	06/26/12	
Field Measurements [3]:							
Sample No.	*Initial*	*Final*	*Initial*	*Initial*	*Initial*	*Initial*	--
pH (units)	7.24	7.24	**6.04**	7.45	7.27	(6)	**6.5 - 8.5**
Temperature (°C)	16.7	16.9	2.00	22.00	20.90	(6)	**NA**
Sp. Conductance (mS)	416	426	571.8	469.0	385.0	(6)	**NA**
Turbidity (NTU)	1.2	250	588	6.79	7.83	(6)	**NA**
Eh (mV)	3	-42	-39	530	-1	(6)	**NA**
Wet Chemistry (mg/L):							
Alkalinity, Total	228 D		274 D	243 D	204	(6)	**NA**
Ammonia	0.065		0.167	0.088	0.2	(6)	**2**
Nitrate (as Nitrogen)	7.9 D		ND	ND	3.8	(6)	**10**
Sulfide, Total	**0.173**		ND	ND	ND	(6)	**0.05**
Total Inorganic Compounds (mg/L):							
Chromium	ND		0.006	ND	ND	(6)	**0.05**
Hexavalent Chromium	ND		ND	ND	ND	(6)	**0.05**
Manganese	**0.676**		**0.305**	**0.392**	**0.51**	(6)	**0.3**
Iron	**0.647**		**6.14**	**0.715**	**0.94**	(6)	**0.3**
Soluble Inorganic Compounds (mg/L):							
Chromium	ND		ND	NA	ND	(6)	**0.05**
Manganese	0.0116 P		0.0272 P	NA	ND	(6)	**0.3**
Iron	0.104 P		0.089 P	NA	0.07	(6)	**0.5**

Notes:

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3. Field measurements were collected immediately before and after groundwater sample collection.
4. NYSDEC Class "GA" Groundwater Quality Standards (GWQS) per 6 NYCRR Part 703.
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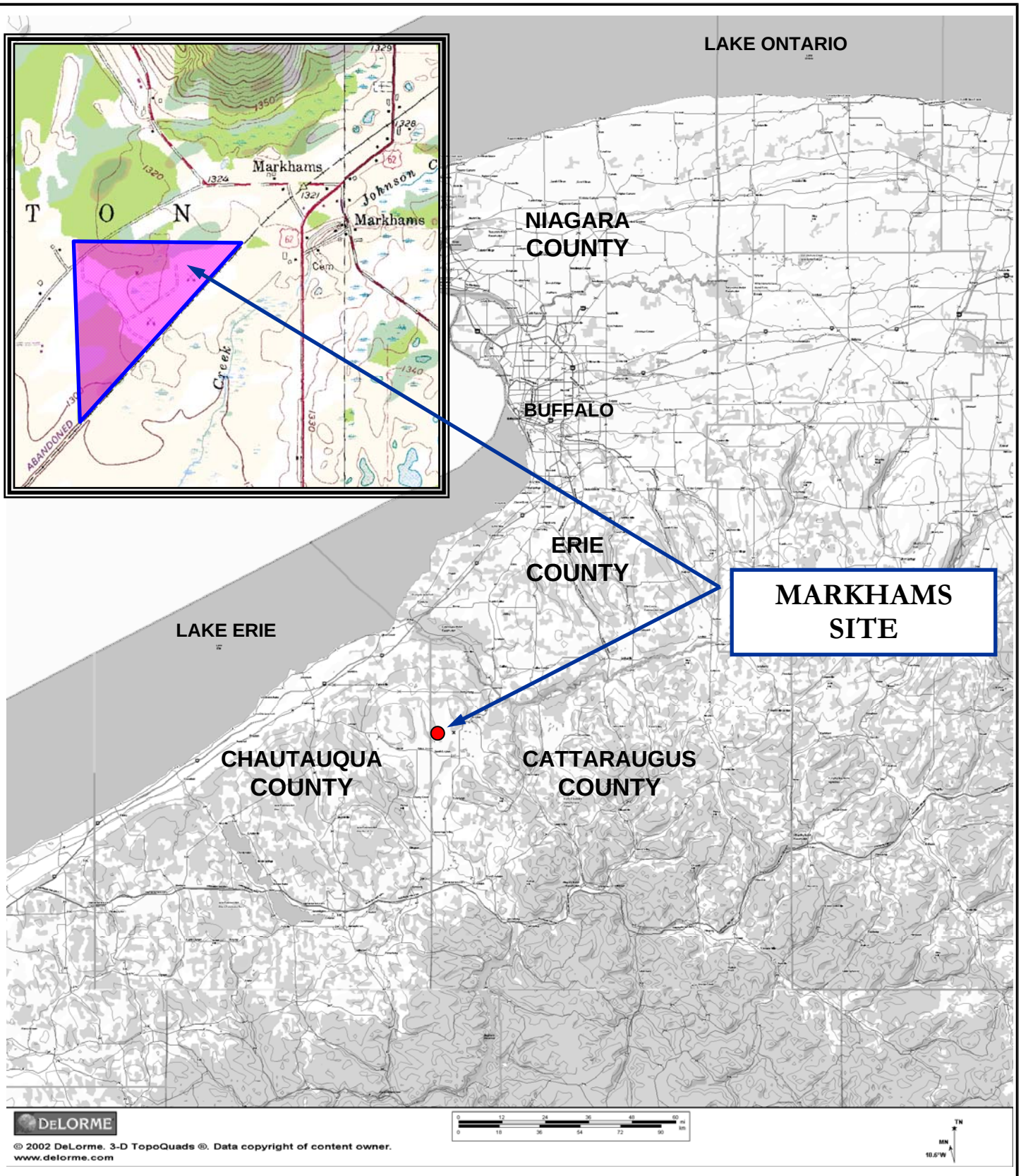
CF6 = Results confirmed by reanalysis.

FIGURES

FIGURE 1



BENCHMARK
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SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

PROJECT NO.: 0021-003-400

DATE: JANUARY 2008

DRAFTED BY: AJZ

SITE LOCATION AND VICINITY MAP

POST-REMEDIAL OPERATION & MAINTENANCE PLAN

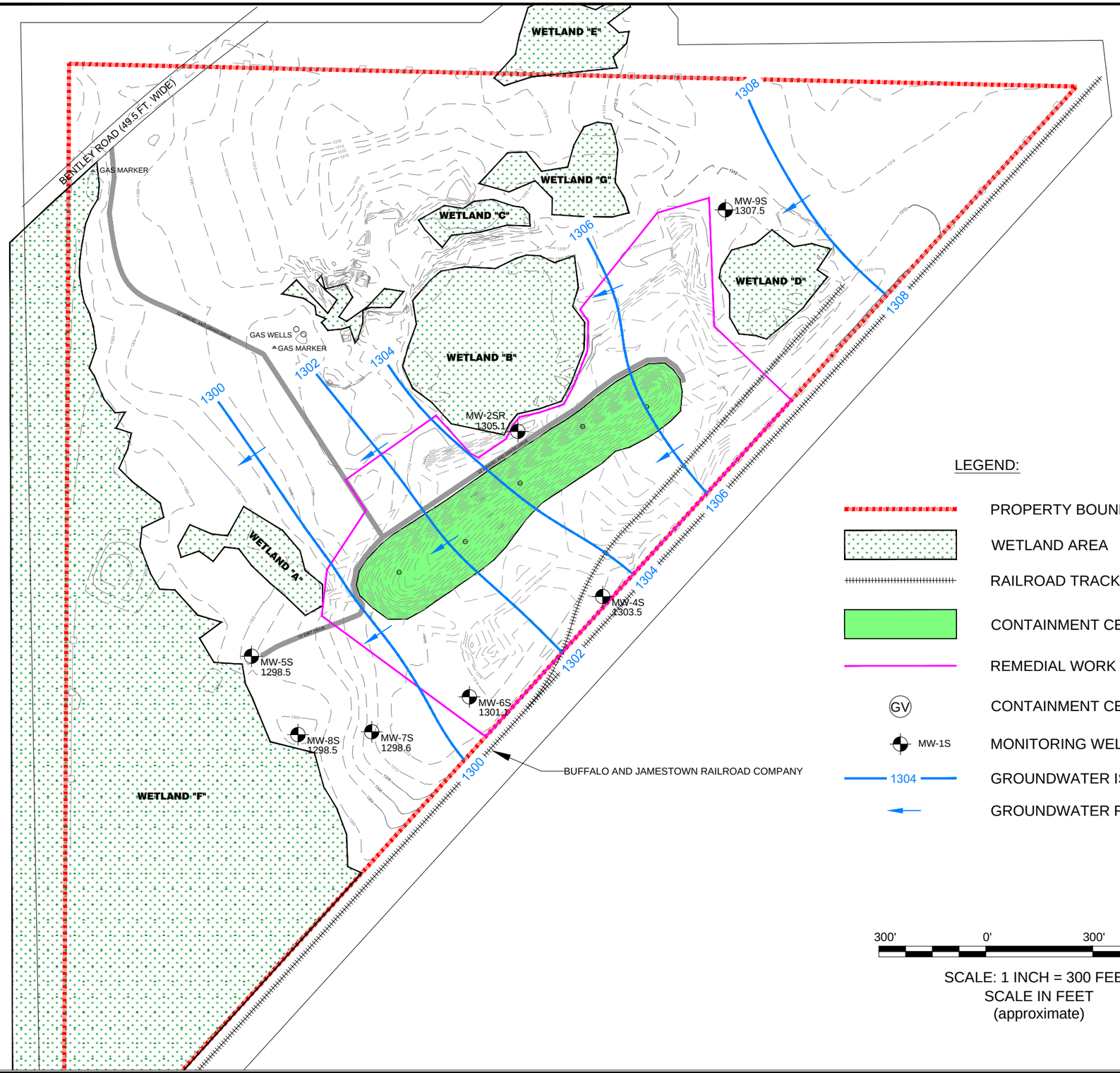
PETER COOPER MARKHAMS SITE
DAYTON, NEW YORK

PREPARED FOR

RESPONDENTS FOR PETER COOPER MARKHAMS SITE

FILEPATH=\CAD\Benchmark\Collier Shannon\Markhams Site\Post Remedial O&M Plan\figure 1\site location and vicinity map.dwg

F:\CAD\Benchmark\Collier Shannon\Markhams Site\Post-Remedial Monitoring\Figure 2; Post-Remedial Site Plan (AUGUST 2012).dwg



N

LEGEND:

- PROPERTY BOUNDARY
- WETLAND AREA
- RAILROAD TRACKS
- CONTAINMENT CELL
- REMEDIAL WORK LIMIT
- GV — CONTAINMENT CELL GAS VENT
- MW-1S — MONITORING WELL LOCATION & GROUNDWATER ELEVATION
- 1304 — GROUNDWATER ISOPOTENTIAL CONTOUR
- GROUNDWATER FLOW DIRECTION

300' 0' 300' 600'

SCALE: 1 INCH = 300 FEET
SCALE IN FEET
(approximate)

DATE: AUGUST 2012
DRAFTED BY: AJZ

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

JOB NO.: 0021-003-500

GROUNDWATER ISOPOTENTIAL MAP JUNE 2012

POST-REMEDIAL MONITORING
PETER COOPER MARKHAMS SUPERFUND SITE
DAYTON, NEW YORK
PREPARED FOR
CPRPs FOR PETER COOPER MARKHAMS

FIGURE 2

ATTACHMENT 1

SAMPLE COLLECTION LOGS

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

EQUIPMENT CALIBRATION LOG

PROJECT INFORMATION:

Project Name: PCC - Markham (GWM) Date: 6/26/12

Project No.:

Client: ~~Peter~~ Peters Cooper to Markham Instrument Source: ☒ BM ☐ Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	POST CAL. READING	SETTINGS
☒ pH meter	units		Myron L Company Ultra Meter 6P	~~606987~~ ☐	TAB	4.00	3.98	4.0
				~~6212375~~ ☐		7.00	7.01	7.0
						10.01	10.0	10.0
☒ Turbidity meter	NTU		Hach 2100P Turbidimeter	06120C020523 ☐	TAB	< 0.4	0.35	4.0
				07110C026405 ☒		20	19.5	20
						100	95.5	100
						800	786	800
☒ Sp. Cond. meter	uS mS		Myron L Company Ultra Meter 6P	~~606987~~ ☐	TAB	1412 mS @ 25 °C	1413	1413
				~~6212375~~ ☐				
☐ PID	ppm		MinRAE 2000			open air zero		MIBK response factor = 1.0
						____ ppm Iso. Gas		
☒ Dissolved Oxygen	ppm		HACH Model HQ30d			100% Satuartion	90.1%	slope
☐ Particulate meter	mg/m^3					zero air		
☐ Oxygen	%					open air		
☐ Hydrogen sulfide	ppm					open air		
☐ Carbon monoxide	ppm					open air		
☐ LEL	%					open air		
☐ Radiation Meter	uR/H					background area		
☐								

ADDITIONAL REMARKS:

PREPARED BY: 6/26/12 **DATE:** JAB

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

WATER SAMPLE COLLECTION LOG

PROJECT INFORMATION

Project Name:

Project No.:

Client:

Location:

SAMPLE DESCRIPTION

I.D.:

Matrix: ☐ SURFACE WATER ☐ STORM ☐ SEEP ☐ OTHER

SAMPLE INFORMATION

Date Collected:

Time Collected:

Date Shipped to Lab:

Collected By:

Sample Type: ☐ POINT ☐ GRAB ☐ COMPOSITE

Sample Collection Method: ☐ DIRECT DIP ☐ SS / POLY. DIPPER ☐ PERISTALTIC PUMP ☐ POLY. DISP. BAILER ☐ ISCO SAMPLER ☐ OTHER

SAMPLING INFORMATION

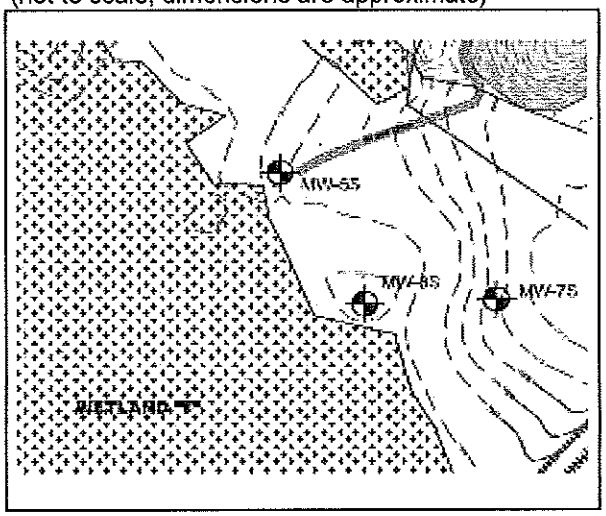
Weather:

Air Temperature:

Parameter	First	Last	Units
pH			units
Temp.			°C
Cond.			mS
Turbidity			NTU
Eh / ORP			mV
D.O.			ppm
Odor			olfactory
Appearance			visual

LOCATION SKETCH

(not to scale, dimensions are approximate)



EXACT LOCATION (if applicable)

Northing (ft)	Easting (ft)	Surface Elevation (fmsl)

SAMPLE DESCRIPTION (appearance, olfactory):

SAMPLE ANALYSIS (depth, laboratory analysis required):

ADDITIONAL REMARKS:

PREPARED BY: **DATE:**

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

GROUNDWATER FIELD FORM

Project Name: Peter Cooper Markhams Site Date: 6/26/12

Location: Markhams Project No.: 0199-001-100 Field Team: RLD / TAB

Well No.	MW-5S	Diameter (inches):	2"	Sample Date / Time:	5/28/2010 6/26/12
Product Depth (fbTOR):	--	Water Column (ft):	5.27	DTW when sampled:	4.38
DTW (static) (fbTOR):	4.21	One Well Volume (gal):	0.85	Purpose:	☐ Development ☐ Sample ☑ Purge & Sample
Total Depth (fbTOR):	9.48	Total Volume Purged (gal):	1.50	Purge Method:	Lowflow (mini monsoon)

Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1101	0 Initial	<0.25	7.09	15.6	896.7	22.7	–	-13	sulfur odor, clear
1103	1 4.40	0.50	6.95	13.2	1011	11.6	–	-16	"
1105	2 4.35	1.0	6.93	12.8	1016	7.76	–	-9	"
1106	3 4.38	1.50	6.88	12.8	1014	5.04	–	0	"
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1108	S1 4.38	1.75	6.88	12.8	1005	4.04	–	15	"
1113	S2 4.38	2.50	6.88	13.2	1008	3.42	–	30	"

Well No.	MW-7S	Diameter (inches):	2"	Sample Date / Time:	5/28/2010 6/26/12
Product Depth (fbTOR):	--	Water Column (ft):	4.77	DTW when sampled:	14.52
DTW (static) (fbTOR):	14.20	One Well Volume (gal):	0.77	Purpose:	☐ Development ☐ Sample ☑ Purge & Sample
Total Depth (fbTOR):	18.97	Total Volume Purged (gal):	2.25	Purge Method:	Lowflow (mini monsoon)

Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1200	0 Initial	<0.25	7.55	13.9	1778	>1000	–	-59	Turbid, orgn sed
1201	1 14.0	0.75	6.98	11.2	1770	385	–	-59	sl Turbid. No odor
1203	2 14.0	1.25	6.88	10.7	1776	242	–	-59	"
1205	3 13.98	1.75	6.86	10.6	1777	160	–	-62	"
1207	4 14.29	2.25	6.83	10.8	1761	>1000	–	-62	"
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1211	S1 14.52	3.25	6.80	9.8	1781	47.6	–	-63	"
1214	S2 14.56	4.0	6.78	9.7	1776	49.4	–	-66	"

REMARKS: BDE MW-5S

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY: TAB

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

GROUNDWATER FIELD FORM

Project Name: Peter Cooper Markhams Site Date: 6/26/12

Location: Markhams Project No.: 0199-001-100 Field Team: ~~RED~~ TAB

Well No. MW-8S	Diameter (inches): 2"	Sample Date / Time: ~~5/28/2010~~ 6/26/12
Product Depth (fbTOR): --	Water Column (ft): 7.28	DTW when sampled: 5.70
DTW (static) (fbTOR): 5.69	One Well Volume (gal): 1.18	Purpose: ☐ Development ☐ Sample ☑ Purge & Sample
Total Depth (fbTOR): 12.87	Total Volume Purged (gal): 1.50	Purge Method: Lowflow (mini monsoon)

Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1232	~~5.78~~ 0 Initial	<0.25	7.23	13.2	865.4	>1000	—	-66	Gray silt no odor
1234	1 5.73	0.50	7.13	11.9	530.7	49.3	—	-26	SL Turbid " "
1235	2 5.74	1.0	7.02	11.8	819.6	26.1	—	-15	"
1237	3 5.75	1.25	6.96	11.8	820.7	16.9	—	-10	"
1238	4 5.76	1.50	6.97	11.9	823.5	13.5	—	-2	"
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1239	S1 5.76	1.75	6.89	12.0	822.0	11.3	—	4	"
1242	S2 5.70	2.0	6.87	12.8	809.2	7.96	—	22	"

Well No. MW-9S	Diameter (inches): 2"	Sample Date / Time: ~~5/28/2010~~ 6/26/12
Product Depth (fbTOR): --	Water Column (ft): 7.52	DTW when sampled:
DTW (static) (fbTOR): 6.57	One Well Volume (gal): 1.22	Purpose: ☐ Development ☐ Sample ☑ Purge & Sample
Total Depth (fbTOR): 13.89	Total Volume Purged (gal): 1.50	Purge Method: Lowflow (mini monsoon)

Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
949	0 Initial	<0.25	6.85	13.6	402.6		—	-48	SL Turbid No odor
951	1 6.62	0.25	6.86	12.7	348.1	27.0	—	-2.1	"
952	2 6.63	0.50	7.0	12.8	319.7	100	—	8	" No odor
953	3 6.63	0.75	6.91	13.0	296.5	5.73	—	35	—
955	4 6.65	1.0	6.96	13.1	284.9	5.55	—	37	"
957	5 6.61	1.25	6.96	13.0	280.2	4.89	—	43	"
	6								
	7								
	8								
	9								
	10								
Sample Information:									
954	S1 6.65	1.50	6.88	13.0	297.3	9.51	—	48	"
955	S2 6.65	1.75	7.11	13.4	274.4	5.84	—	23	"

REMARKS: MS/MSD @ 95

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY: TAB

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

GROUNDWATER FIELD FORM

Project Name: Peter Cooper Markhams Site Date:

Location: Markhams Project No.: 0199-001-100 Field Team: RLD / TAB

Wetland F			Diameter (inches):			Sample Date / Time:			
Product Depth (fbTOR): --			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR):			One Well Volume (gal):			Purpose: ☐ Development ☑ Sample ☐ Purge & Sample			
Total Depth (fbTOR):			Total Volume Purged (gal):			Purge Method: Lowflow (mini monsoon)			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
	S1								
	S2								

			Diameter (inches):			Sample Date / Time:			
Product Depth (fbTOR): --			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR):			One Well Volume (gal):			Purpose: ☐ Development ☐ Sample ☐ Purge & Sample			
Total Depth (fbTOR):			Total Volume Purged (gal):			Purge Method: Lowflow (mini monsoon)			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
	S1								
	S2								

REMARKS:

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-21827-1
Client Project/Site: Benchmark-Peter Cooper sites
Sampling Event: Annual sampling

For:
Benchmark Env. Eng. & Science, PLLC
2558 Hamburg Turnpike
Suite 300
Lackawanna, New York 14218

Attn: Mr. Tom Forbes

Joseph V. Giacomazza

Authorized for release by:
7/11/2012 2:57:43 PM
Joe Giacomazza
Project Administrator
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Designee for

Brian Fischer
Project Manager II
brian.fischer@testamericainc.com

Table of Contents

ATTACHMENT 2

TESTAMERICA LABORATORIES, INC.
SAMPLE DATA SUMMARY PACKAGE
JUNE 2012

BENCHMARK

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Job ID: 480-21827-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-21827-1

Receipt
The samples were received on 6/26/2012 4:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 7.9º C.

Except:

The following samples were received at the laboratory outside the required temperature criteria: Blind Duplicate (480-21827-5), MW-5S (480-21827-1), MW-7S (480-21827-2), MW-8S (480-21827-3), MW-9S (480-21827-4), MW-9S (480-21827-4 MS), MW-9S (480-21827-4 MSD). The samples are considered acceptable since they were collected and submitted to the laboratory on the same day and there is evidence that the chilling process has begun.

Metals
No analytical or quality issues were noted.

General Chemistry
Method 350.1: The results reported for the following sample does not concur with results previously reported for this site: MW-8S (480-21827-3). Reanalysis was performed, and the results confirmed.

Method 353.2: The results reported for the following samples does not concur with results previously reported for this site: MW-5S (480-21827-1), MW-8S (480-21827-3), MW-9S (480-21827-4). Reanalysis was performed, and the results confirmed.

No other analytical or quality issues were noted.

Detection Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Client Sample ID: MW-5S — Lab Sample ID: 480-21827-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0050		0.0040		mg/L	1		6010B	Total/NA
Iron	0.20		0.050		mg/L	1		6010B	Total/NA
Manganese	1.6		0.0030		mg/L	1		6010B	Total/NA
Alkalinity, Total	473		100		mg/L	10		310.2	Total/NA
Ammonia (as N)	0.20		0.020		mg/L	1		350.1	Total/NA
Nitrate as N	0.23		0.050		mg/L	1		353.2	Total/NA

Client Sample ID: MW-7S — Lab Sample ID: 480-21827-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0057		0.0040		mg/L	1		6010B	Total/NA
Iron	17.8		0.050		mg/L	1		6010B	Total/NA
Manganese	0.21		0.0030		mg/L	1		6010B	Total/NA
Alkalinity, Total	437		100		mg/L	10		310.2	Total/NA

Client Sample ID: MW-8S — Lab Sample ID: 480-21827-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0044		0.0040		mg/L	1		6010B	Total/NA
Iron	0.15		0.050		mg/L	1		6010B	Total/NA
Manganese	6.0		0.0030		mg/L	1		6010B	Total/NA
Alkalinity, Total	372		100		mg/L	10		310.2	Total/NA
Nitrate as N	3.8		0.050		mg/L	1		353.2	Total/NA

Client Sample ID: MW-9S — Lab Sample ID: 480-21827-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.057		0.050		mg/L	1		6010B	Total/NA
Manganese	0.0046		0.0030		mg/L	1		6010B	Total/NA
Alkalinity, Total	82.4		10.0		mg/L	1		310.2	Total/NA
Nitrate as N	5.8		0.050		mg/L	1		353.2	Total/NA

Client Sample ID: Blind Duplicate — Lab Sample ID: 480-21827-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0052		0.0040		mg/L	1		6010B	Total/NA
Iron	0.23		0.050		mg/L	1		6010B	Total/NA
Manganese	1.5		0.0030		mg/L	1		6010B	Total/NA

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Client Sample ID: MW-5S
Date Collected: 06/26/12 11:08
Date Received: 06/26/12 16:55

Lab Sample ID: 480-21827-1
Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		06/28/12 08:50	06/28/12 17:11	1
Chromium	**0.0050**		0.0040		mg/L		06/28/12 08:50	06/28/12 17:11	1
Iron	**0.20**		0.050		mg/L		06/28/12 08:50	06/28/12 17:11	1
Manganese	**1.6**		0.0030		mg/L		06/28/12 08:50	06/28/12 17:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**473**		100		mg/L			07/05/12 15:26	10
Ammonia (as N)	**0.20**		0.020		mg/L			06/28/12 15:59	1
Nitrate as N	**0.23**		0.050		mg/L			06/26/12 22:04	1
Chromium (hexavalent)	ND		0.010		mg/L			06/26/12 22:49	1
Sulfide	ND		0.10		mg/L			07/02/12 23:05	1

Client Sample Results

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Client Sample ID: MW-7S
Date Collected: 06/26/12 12:11
Date Received: 06/26/12 16:55

Lab Sample ID: 480-21827-2
Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		06/28/12 08:50	06/28/12 17:13	1
Chromium	**0.0057**		0.0040		mg/L		06/28/12 08:50	06/28/12 17:13	1
Iron	**17.8**		0.050		mg/L		06/28/12 08:50	06/28/12 17:13	1
Manganese	**0.21**		0.0030		mg/L		06/28/12 08:50	06/28/12 17:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**437**		100		mg/L			07/09/12 00:52	10
Ammonia (as N)	ND		0.020		mg/L			06/28/12 16:00	1
Nitrate as N	ND		0.050		mg/L			06/26/12 19:06	1
Chromium (hexavalent)	ND		0.010		mg/L			06/26/12 22:51	1
Sulfide	ND		0.10		mg/L			07/02/12 23:05	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Client Sample ID: MW-8S
Date Collected: 06/26/12 12:39
Date Received: 06/26/12 16:55

Lab Sample ID: 480-21827-3
Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		06/28/12 08:50	06/28/12 17:20	1
Chromium	**0.0044**		0.0040		mg/L		06/28/12 08:50	06/28/12 17:20	1
Iron	**0.15**		0.050		mg/L		06/28/12 08:50	06/28/12 17:20	1
Manganese	**6.0**		0.0030		mg/L		06/28/12 08:50	06/28/12 17:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**372**		100		mg/L			07/05/12 18:05	10
Ammonia (as N)	ND		0.020		mg/L			06/28/12 14:17	1
Nitrate as N	**3.8**		0.050		mg/L			06/26/12 22:05	1
Chromium (hexavalent)	ND		0.010		mg/L			06/26/12 22:54	1
Sulfide	ND		0.10		mg/L			07/02/12 23:05	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Client Sample ID: MW-9S
Date Collected: 06/26/12 09:58
Date Received: 06/26/12 16:55

Lab Sample ID: 480-21827-4
Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		06/28/12 08:50	06/28/12 17:22	1
Chromium	ND		0.0040		mg/L		06/28/12 08:50	06/28/12 17:22	1
Iron	**0.057**		0.050		mg/L		06/28/12 08:50	06/28/12 17:22	1
Manganese	**0.0046**		0.0030		mg/L		06/28/12 08:50	06/28/12 17:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	**82.4**		10.0		mg/L			07/09/12 00:51	1
Ammonia (as N)	ND		0.020		mg/L			06/28/12 14:22	1
Nitrate as N	**5.8**		0.050		mg/L			06/26/12 22:09	1
Chromium (hexavalent)	ND		0.010		mg/L			06/26/12 22:56	1
Sulfide	ND		0.10		mg/L			07/02/12 23:05	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Client Sample ID: Blind Duplicate
Date Collected: 06/26/12 15:00
Date Received: 06/26/12 16:55

Lab Sample ID: 480-21827-5
Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		06/28/12 08:50	06/28/12 17:34	1
Chromium	**0.0052**		0.0040		mg/L		06/28/12 08:50	06/28/12 17:34	1
Iron	**0.23**		0.050		mg/L		06/28/12 08:50	06/28/12 17:34	1
Manganese	**1.5**		0.0030		mg/L		06/28/12 08:50	06/28/12 17:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium (hexavalent)	ND		0.010		mg/L			06/26/12 23:04	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 480-70258/1-A
Matrix: Water
Analysis Batch: 70545

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 70258

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		06/28/12 08:50	06/28/12 16:43	1
Chromium	ND		0.0040		mg/L		06/28/12 08:50	06/28/12 16:43	1
Iron	ND		0.050		mg/L		06/28/12 08:50	06/28/12 16:43	1
Manganese	ND		0.0030		mg/L		06/28/12 08:50	06/28/12 16:43	1

Lab Sample ID: LCS 480-70258/2-A
Matrix: Water
Analysis Batch: 70545

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 70258

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.200	0.203		mg/L		101	80 - 120
Chromium	0.200	0.195		mg/L		98	80 - 120
Iron	10.0	10.05		mg/L		101	80 - 120
Manganese	0.200	0.206		mg/L		103	80 - 120

Lab Sample ID: 480-21827-4 MS
Matrix: Water
Analysis Batch: 70545

Client Sample ID: MW-9S
Prep Type: Total/NA
Prep Batch: 70258

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		0.200	0.212		mg/L		106	75 - 125
Chromium	ND		0.200	0.200		mg/L		100	75 - 125
Iron	0.057		10.0	10.12		mg/L		101	75 - 125
Manganese	0.0046		0.200	0.215		mg/L		105	75 - 125

Lab Sample ID: 480-21827-4 MSD
Matrix: Water
Analysis Batch: 70545

Client Sample ID: MW-9S
Prep Type: Total/NA
Prep Batch: 70258

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		0.200	0.213		mg/L		106	75 - 125	0	20
Chromium	ND		0.200	0.200		mg/L		100	75 - 125	0	20
Iron	0.057		10.0	9.98		mg/L		99	75 - 125	1	20
Manganese	0.0046		0.200	0.213		mg/L		104	75 - 125	1	20

Method: 310.2 - Alkalinity

Lab Sample ID: MB 480-71260/14
Matrix: Water
Analysis Batch: 71260

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		10.0		mg/L			07/05/12 13:09	1

Lab Sample ID: MB 480-71260/33
Matrix: Water
Analysis Batch: 71260

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		10.0		mg/L			07/05/12 14:44	1

Method: 310.2 - Alkalinity (Continued)

Lab Sample ID: MB 480-71260/41
Matrix: Water
Analysis Batch: 71260

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		10.0		mg/L			07/05/12 15:05	1

Lab Sample ID: MB 480-71260/69
Matrix: Water
Analysis Batch: 71260

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		10.0		mg/L			07/05/12 18:05	1

Lab Sample ID: LCS 480-71260/32
Matrix: Water
Analysis Batch: 71260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	50.0	48.25		mg/L		96	90 - 110

Lab Sample ID: LCS 480-71260/40
Matrix: Water
Analysis Batch: 71260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	50.0	46.20		mg/L		92	90 - 110

Lab Sample ID: LCS 480-71260/68
Matrix: Water
Analysis Batch: 71260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	50.0	46.70		mg/L		93	90 - 110

Lab Sample ID: MB 480-71506/12
Matrix: Water
Analysis Batch: 71506

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		10.0		mg/L			07/09/12 00:51	1

Lab Sample ID: LCS 480-71506/11
Matrix: Water
Analysis Batch: 71506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	50.0	50.43		mg/L		101	90 - 110

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 480-70458/123
Matrix: Water
Analysis Batch: 70458

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.020		mg/L			06/28/12 14:34	1

Lab Sample ID: MB 480-70458/195
Matrix: Water
Analysis Batch: 70458

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.020		mg/L			06/28/12 15:45	1

Lab Sample ID: MB 480-70458/99
Matrix: Water
Analysis Batch: 70458

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.020		mg/L			06/28/12 14:10	1

Lab Sample ID: LCS 480-70458/100
Matrix: Water
Analysis Batch: 70458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	1.00	1.02		mg/L		102	90 - 110

Lab Sample ID: LCS 480-70458/124
Matrix: Water
Analysis Batch: 70458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	1.00	1.03		mg/L		103	90 - 110

Lab Sample ID: LCS 480-70458/196
Matrix: Water
Analysis Batch: 70458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	1.00	1.00		mg/L		100	90 - 110

Lab Sample ID: 480-21827-3 MS
Matrix: Water
Analysis Batch: 70458

Client Sample ID: MW-8S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	ND		0.200	0.199		mg/L		99	54 - 150

Lab Sample ID: 480-21827-3 DU
Matrix: Water
Analysis Batch: 70458

Client Sample ID: MW-8S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ammonia (as N)	ND		ND		mg/L		NC	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-70139/3
Matrix: Water
Analysis Batch: 70139

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium (hexavalent)	ND		0.010		mg/L			06/26/12 22:44	1

Lab Sample ID: LCS 480-70139/4
Matrix: Water
Analysis Batch: 70139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium (hexavalent)	0.0500	0.0539		mg/L		108	85 - 115

Lab Sample ID: 480-21827-4 MS
Matrix: Water
Analysis Batch: 70139

Client Sample ID: MW-9S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium (hexavalent)	ND		0.0500	0.0507		mg/L		101	85 - 115

Lab Sample ID: 480-21827-4 MSD
Matrix: Water
Analysis Batch: 70139

Client Sample ID: MW-9S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium (hexavalent)	ND		0.0500	0.0531		mg/L		106	85 - 115	5	15

Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 480-70956/3
Matrix: Water
Analysis Batch: 70956

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.10		mg/L			07/02/12 23:05	1

Lab Sample ID: LCS 480-70956/4
Matrix: Water
Analysis Batch: 70956

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	0.750	0.769		mg/L		103	90 - 110

Lab Sample ID: 480-21827-4 MS
Matrix: Water
Analysis Batch: 70956

Client Sample ID: MW-9S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	ND		0.500	0.539		mg/L		108	90 - 110

Metals

Prep Batch: 70258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-21827-1	MW-5S	Total/NA	Water	3005A	
480-21827-2	MW-7S	Total/NA	Water	3005A	
480-21827-3	MW-8S	Total/NA	Water	3005A	
480-21827-4	MW-9S	Total/NA	Water	3005A	
480-21827-4 MS	MW-9S	Total/NA	Water	3005A	
480-21827-4 MSD	MW-9S	Total/NA	Water	3005A	
480-21827-5	Blind Duplicate	Total/NA	Water	3005A	
LCS 480-70258/2-A	Lab Control Sample	Total/NA	Water	3005A	
MB 480-70258/1-A	Method Blank	Total/NA	Water	3005A	

Analysis Batch: 70545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-21827-1	MW-5S	Total/NA	Water	6010B	70258
480-21827-2	MW-7S	Total/NA	Water	6010B	70258
480-21827-3	MW-8S	Total/NA	Water	6010B	70258
480-21827-4	MW-9S	Total/NA	Water	6010B	70258
480-21827-4 MS	MW-9S	Total/NA	Water	6010B	70258
480-21827-4 MSD	MW-9S	Total/NA	Water	6010B	70258
480-21827-5	Blind Duplicate	Total/NA	Water	6010B	70258
LCS 480-70258/2-A	Lab Control Sample	Total/NA	Water	6010B	70258
MB 480-70258/1-A	Method Blank	Total/NA	Water	6010B	70258

General Chemistry

Analysis Batch: 70139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-21827-1	MW-5S	Total/NA	Water	7196A	
480-21827-2	MW-7S	Total/NA	Water	7196A	
480-21827-3	MW-8S	Total/NA	Water	7196A	
480-21827-4	MW-9S	Total/NA	Water	7196A	
480-21827-4 MS	MW-9S	Total/NA	Water	7196A	
480-21827-4 MSD	MW-9S	Total/NA	Water	7196A	
480-21827-5	Blind Duplicate	Total/NA	Water	7196A	
LCS 480-70139/4	Lab Control Sample	Total/NA	Water	7196A	
MB 480-70139/3	Method Blank	Total/NA	Water	7196A	

Analysis Batch: 70141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-21827-1	MW-5S	Total/NA	Water	353.2	
480-21827-2	MW-7S	Total/NA	Water	353.2	
480-21827-3	MW-8S	Total/NA	Water	353.2	
480-21827-4	MW-9S	Total/NA	Water	353.2	

Analysis Batch: 70458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-21827-1	MW-5S	Total/NA	Water	350.1	
480-21827-2	MW-7S	Total/NA	Water	350.1	
480-21827-3	MW-8S	Total/NA	Water	350.1	
480-21827-3 DU	MW-8S	Total/NA	Water	350.1	
480-21827-3 MS	MW-8S	Total/NA	Water	350.1	
480-21827-4	MW-9S	Total/NA	Water	350.1	
LCS 480-70458/100	Lab Control Sample	Total/NA	Water	350.1	

General Chemistry (Continued)

Analysis Batch: 70458 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-70458/124	Lab Control Sample	Total/NA	Water	350.1	
LCS 480-70458/196	Lab Control Sample	Total/NA	Water	350.1	
MB 480-70458/123	Method Blank	Total/NA	Water	350.1	
MB 480-70458/195	Method Blank	Total/NA	Water	350.1	
MB 480-70458/99	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 70956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-21827-1	MW-5S	Total/NA	Water	SM 4500 S2 D	
480-21827-2	MW-7S	Total/NA	Water	SM 4500 S2 D	
480-21827-3	MW-8S	Total/NA	Water	SM 4500 S2 D	
480-21827-4	MW-9S	Total/NA	Water	SM 4500 S2 D	
480-21827-4 MS	MW-9S	Total/NA	Water	SM 4500 S2 D	
LCS 480-70956/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
MB 480-70956/3	Method Blank	Total/NA	Water	SM 4500 S2 D	

Analysis Batch: 71260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-21827-1	MW-5S	Total/NA	Water	310.2	
480-21827-3	MW-8S	Total/NA	Water	310.2	
LCS 480-71260/32	Lab Control Sample	Total/NA	Water	310.2	
LCS 480-71260/40	Lab Control Sample	Total/NA	Water	310.2	
LCS 480-71260/68	Lab Control Sample	Total/NA	Water	310.2	
MB 480-71260/14	Method Blank	Total/NA	Water	310.2	
MB 480-71260/33	Method Blank	Total/NA	Water	310.2	
MB 480-71260/41	Method Blank	Total/NA	Water	310.2	
MB 480-71260/69	Method Blank	Total/NA	Water	310.2	

Analysis Batch: 71506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-21827-2	MW-7S	Total/NA	Water	310.2	
480-21827-4	MW-9S	Total/NA	Water	310.2	
LCS 480-71506/11	Lab Control Sample	Total/NA	Water	310.2	
MB 480-71506/12	Method Blank	Total/NA	Water	310.2	

Lab Chronicle

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Client Sample ID: MW-5S

Lab Sample ID: 480-21827-1

Date Collected: 06/26/12 11:08

Matrix: Water

Date Received: 06/26/12 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			70258	06/28/12 08:50	SS	TAL BUF
Total/NA	Analysis	6010B		1	70545	06/28/12 17:11	MM	TAL BUF
Total/NA	Analysis	7196A		1	70139	06/26/12 22:49	KS	TAL BUF
Total/NA	Analysis	353.2		1	70141	06/26/12 22:04	KS	TAL BUF
Total/NA	Analysis	350.1		1	70458	06/28/12 15:59	KS	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	70956	07/02/12 23:05	LAW	TAL BUF
Total/NA	Analysis	310.2		10	71260	07/05/12 15:26	NH	TAL BUF

Client Sample ID: MW-7S

Lab Sample ID: 480-21827-2

Date Collected: 06/26/12 12:11

Matrix: Water

Date Received: 06/26/12 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			70258	06/28/12 08:50	SS	TAL BUF
Total/NA	Analysis	6010B		1	70545	06/28/12 17:13	MM	TAL BUF
Total/NA	Analysis	7196A		1	70139	06/26/12 22:51	KS	TAL BUF
Total/NA	Analysis	353.2		1	70141	06/26/12 19:06	KS	TAL BUF
Total/NA	Analysis	350.1		1	70458	06/28/12 16:00	KS	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	70956	07/02/12 23:05	LAW	TAL BUF
Total/NA	Analysis	310.2		10	71506	07/09/12 00:52	PJQ	TAL BUF

Client Sample ID: MW-8S

Lab Sample ID: 480-21827-3

Date Collected: 06/26/12 12:39

Matrix: Water

Date Received: 06/26/12 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			70258	06/28/12 08:50	SS	TAL BUF
Total/NA	Analysis	6010B		1	70545	06/28/12 17:20	MM	TAL BUF
Total/NA	Analysis	7196A		1	70139	06/26/12 22:54	KS	TAL BUF
Total/NA	Analysis	353.2		1	70141	06/26/12 22:05	KS	TAL BUF
Total/NA	Analysis	350.1		1	70458	06/28/12 14:17	KS	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	70956	07/02/12 23:05	LAW	TAL BUF
Total/NA	Analysis	310.2		10	71260	07/05/12 18:05	NH	TAL BUF

Client Sample ID: MW-9S

Lab Sample ID: 480-21827-4

Date Collected: 06/26/12 09:58

Matrix: Water

Date Received: 06/26/12 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			70258	06/28/12 08:50	SS	TAL BUF
Total/NA	Analysis	6010B		1	70545	06/28/12 17:22	MM	TAL BUF
Total/NA	Analysis	7196A		1	70139	06/26/12 22:56	KS	TAL BUF

Lab Chronicle

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Client Sample ID: MW-9S

Lab Sample ID: 480-21827-4

Date Collected: 06/26/12 09:58
Matrix: Water
Date Received: 06/26/12 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	353.2		1	70141	06/26/12 22:09	KS	TAL BUF
Total/NA	Analysis	350.1		1	70458	06/28/12 14:22	KS	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	70956	07/02/12 23:05	LAW	TAL BUF
Total/NA	Analysis	310.2		1	71506	07/09/12 00:51	PJQ	TAL BUF

Client Sample ID: Blind Duplicate

Lab Sample ID: 480-21827-5

Date Collected: 06/26/12 15:00
Matrix: Water
Date Received: 06/26/12 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			70258	06/28/12 08:50	SS	TAL BUF
Total/NA	Analysis	6010B		1	70545	06/28/12 17:34	MM	TAL BUF
Total/NA	Analysis	7196A		1	70139	06/26/12 23:04	KS	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Buffalo	Arkansas DEQ	State Program	6	88-0686
TestAmerica Buffalo	California	NELAC	9	1169CA
TestAmerica Buffalo	Connecticut	State Program	1	PH-0568
TestAmerica Buffalo	Florida	NELAC	4	E87672
TestAmerica Buffalo	Georgia	State Program	4	956
TestAmerica Buffalo	Georgia	State Program	4	N/A
TestAmerica Buffalo	Illinois	NELAC	5	200003
TestAmerica Buffalo	Iowa	State Program	7	374
TestAmerica Buffalo	Kansas	NELAC	7	E-10187
TestAmerica Buffalo	Kentucky	State Program	4	90029
TestAmerica Buffalo	Kentucky (UST)	State Program	4	30
TestAmerica Buffalo	Louisiana	NELAC	6	02031
TestAmerica Buffalo	Maine	State Program	1	NY00044
TestAmerica Buffalo	Maryland	State Program	3	294
TestAmerica Buffalo	Massachusetts	State Program	1	M-NY044
TestAmerica Buffalo	Michigan	State Program	5	9937
TestAmerica Buffalo	Minnesota	NELAC	5	036-999-337
TestAmerica Buffalo	New Hampshire	NELAC	1	2337
TestAmerica Buffalo	New Hampshire	NELAC	1	2973
TestAmerica Buffalo	New Jersey	NELAC	2	NY455
TestAmerica Buffalo	New York	NELAC	2	10026
TestAmerica Buffalo	North Dakota	State Program	8	R-176
TestAmerica Buffalo	Oklahoma	State Program	6	9421
TestAmerica Buffalo	Oregon	NELAC	10	NY200003
TestAmerica Buffalo	Pennsylvania	NELAC	3	68-00281
TestAmerica Buffalo	Tennessee	State Program	4	TN02970
TestAmerica Buffalo	Texas	NELAC	6	T104704412-11-2
TestAmerica Buffalo	USDA	Federal		P330-11-00386
TestAmerica Buffalo	Virginia	NELAC	3	460185
TestAmerica Buffalo	Washington	State Program	10	C784
TestAmerica Buffalo	West Virginia DEP	State Program	3	252
TestAmerica Buffalo	Wisconsin	State Program	5	998310390

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL BUF
310.2	Alkalinity	MCAWW	TAL BUF
350.1	Nitrogen, Ammonia	MCAWW	TAL BUF
353.2	Nitrate	EPA	TAL BUF
7196A	Chromium, Hexavalent	SW846	TAL BUF
SM 4500 S2 D	Sulfide, Total	SM	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-21827-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-21827-1	MW-5S	Water	06/26/12 11:08	06/26/12 16:55
480-21827-2	MW-7S	Water	06/26/12 12:11	06/26/12 16:55
480-21827-3	MW-8S	Water	06/26/12 12:39	06/26/12 16:55
480-21827-4	MW-9S	Water	06/26/12 09:58	06/26/12 16:55
480-21827-5	Blind Duplicate	Water	06/26/12 15:00	06/26/12 16:55

[redacted]

Chain of Custody Record

TAL-4124 (1007) Benchmark

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client: Tierra Environmental	Project Manager: Tom Forbes	Date: 6/26/12	Chain of Custody Number: 213395
Address: 2558 Hamburg	Telephone Number (Area Code)/Fax Number: (716) 856-0635	Lab Number:	Page 1 of 1
City: Lackawanna / State: NY / Zip Code: 14218	Site Contact: T. Bekendt	Lab Contact: B. Fischer	
Project Name and Location (State): PCC - Markhams (GWM)	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed): 310.2, 353.2, 365.1

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Solid	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	As, Cr, Mn, Fe	Hex Cr	Nitrate, Nitrite	Sulfide	Cyanide	Ammonia	Alkalinity	Special Instructions/ Conditions of Receipt
MW-5S	6/26/12	1108		X			X	X	X			X	1	1	1	1	1	1		
MW-7S		1211		X			X	X	X			X	1	1	1	1	1	1		
MW-8S		1239		X			X	X	X			X	1	1	1	1	1	1		
MW-9S (MS/MSD)		958		X			X	X	X			X	3	3	1	1	1	1		
Blind Dup		1500		X			X	X	X			X	1	1						

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STD

QC Requirements (Specify)

1. Relinquished By	Date: 6/26/12	Time: 1655	1. Received By	Date: 6/26/12	Time: 1655
2. Relinquished By	Date:	Time:	2. Received By	Date:	Time:
3. Relinquished By	Date:	Time:	3. Received By	Date:	Time:

Comments: 7.9°C SOME BOTTLES W/ ICE

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: Benchmark Env. Eng. & Science, PLLC

Job Number: 480-21827-1

Login Number: 21827

List Source: TestAmerica Buffalo

List Number: 1

Creator: Robitaille, Zach L

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	BENCHMARK
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

ATTACHMENT 3

NYSDEC INSTITUTIONAL & ENGINEERING CONTROLS CERTIFICATION FORM AND FIELD INSPECTION REPORT

BENCHMARK

Enclosure 1
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. N/A

Site Name Peter Cooper Markhams Superfund Site

Site Address: Bentley Road Zip Code: 14041

City/Town: Dayton

County: Cattaraugus

Current Use: Vacant

Intended Use: Undeveloped

Verification of Site Details	Box 2 YES	Box 2 NO
1. Are the Site Details above, correct?	x	☐
If NO, are changes handwritten above or included on a separate sheet?	☐	☐
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment since the initial/last certification?	☐	x
If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	☐
3. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property since the initial/last certification?	☐	x
If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	☐
4. Has a change-of-use occurred since the initial/last certification?	☐	x
If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	☐
5. For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), has any new information revealed that assumptions made in the Qualitative Exposure Assessment for offsite contamination are no longer valid?	☐	x
If YES, is the new information or evidence that new information has been previously submitted included with this Certification?	☐	☐
6. For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), are the assumptions in the Qualitative Exposure Assessment still valid (must be certified every five years) ?	x	☐

SITE NO. **N/A** **Box 3**

Description of Institutional Control Certification

	YES	NO	
1. Compliance with the Site Management Plan (SMP) for the implemented remedy:	x	☐	
2. The groundwater beneath the Site is not used as a potable water source or for any other use without prior written permission of the Department:	x	☐	
3. Groundwater monitoring as specified in the SMP:	x	☐	
4. Operation and maintenance of the ASD system as specified in the SMP:	☐	☐	N/A

Description of Engineering Control Certification **Box 4**

	YES	NO
1. Maintenance of the cover systems over the Site:	x	☐

Control Certification Statement

For each Institutional or Engineering control listed above, I certify by checking "Yes" that all of the following statements are true:

(a) the Institutional Control and/or Engineering Control employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(d) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control.

(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

IC/EC CERTIFICATIONS
SITE NO. N/A

Box 5

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 2 & 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____,
print name print business address

am certifying as _____(Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

_____ _____
Signature of Owner or Remedial Party Rendering Certification Date

Box 6

QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE

I certify that all information and statements in Box 4 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I **Thomas H. Forbes** at **2558 Hamburg Turnpike Lackawanna, New York 14218**

am certifying as a Qualified Environmental Professional for the **Peter Cooper Markhams Superfund Site**

(Owner or Remedial Party) for the Site named in the Site Details Section of this form.

_____ _____ 9-13-12
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification Stamp (if Required) Date

Enclosure 2

Certification of Institutional Controls/ Engineering Controls (ICs/ECs)
Step-by-Step Instructions, Certification Requirements and Definitions

The Owner, or Remedial Party, and when necessary, a Professional Engineer (P.E.), or the Qualified Environmental Professional (QEP), must review and complete the IC/EC Certification Form, sign the IC/EC Certifications Signature Page, and return it, along with the Periodic Review Report (PRR), within 45 days of the date of this notice.

Please use the following instructions to complete the IC/EC Certification.

I. Verification of Site Details (Box 1 and Box 2):

Answer the six questions in the Verification of Site Details Section. Questions 5 and 6 refer to only sites in the Brownfield Cleanup Program. ECL Section 27-1415-7(c) is included in **IV. IC/EC Certification Requirements**. The Owner and/or your P.E. or QEP may include handwritten changes and/or other supporting documentation, as necessary.

II. Verification of Institutional / Engineering Controls (Box 3 and Box 4)

Review the listed Institutional / Engineering Controls, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner / Remedial Party is to petition the Department requesting approval to remove the control.

2. Select "YES" or "NO" for **Control Certification** for each IC/EC, based on Sections (a)-(e) of the **Control Certification Statement**.

   If the Department concurs with the explanation, the corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Project Manager. If the Department has any questions or concerns regarding the completion of the certification, the Project Manager will contact you.

3. If you cannot certify "Yes" for each Control, please continue to complete the remainder of this **Control Certification** form. Attach supporting documentation that explains why the **Control Certification** cannot be rendered, as well as a statement of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Control Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is conducted.

   If the Department concurs with the explanation, the corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Project Manager. Once the corrective measures are complete a new Periodic Review Report (with IC/EC Certification) is to be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 5 and Box 6):

1. If you certified "Yes" for each Control, please complete and sign the IC/EC Certifications page. To determine WHO signs the **IC/EC Certification,** please use Table 1. Signature Requirements for the IC/EC Certification, which follows.

Table 1. Signature Requirements for Control Certification Page

Type of Control	Example of IC/EC	Required Signatures
IC only	Environmental Easement Deed Restriction.	A site or property owner or remedial party.
IC with an EC which does not include a treatment system or engineered caps.	Fence, Clean Soil Cover, Individual House Water Treatment System, Vapor Mitigation System	A site or property owner or remedial party, and a QEP. (P.E. license not required)
IC with an EC that includes treatment system or an engineered cap.	Pump & Treat System providing hydraulic control of a plume, Part 360 Cap.	A site or property owner or remedial party, and a QEP with a P.E. license.

IV. IC/EC Certification Requirements:

Division of Environmental Remediation Program Policy requires periodic certification of IC(s) and EC(s) as follows:

For Environmental Restoration Projects: N.Y. Envtl Conserv.Law Section 56-0503 (Environmental restoration projects; state assistance)

For State Superfund Projects: Envtl Conserv.Law Section 27-1318. (Institutional and engineering controls)

For Brownfields Cleanup Program Projects: Envtl Conserv.Law Section 27-1415. (Remedial program requirements)

Envtl Conserv.Law Section 27-1415-7(c) states:

(c) At non-significant threat sites where contaminants in groundwater at the site boundary contravene drinking water standards, such certification shall also certify that no new information has come to the owner's attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of offsite contamination are no longer valid. Every five years the owner at such sites shall certify that the assumptions made in the qualitative exposure assessment remain valid. The requirement to provide such certifications may be terminated by a written determination by the Commissioner in consultation with the Commissioner of Health, after notice to the parties on the brownfield site contact list and a public comment period of thirty days.

Voluntary Cleanup Program: Applicable program guidance.

Petroleum Remediation Program: Applicable program guidance.

Federal Brownfields: Applicable program guidance.

Manufactured Gas Plant Projects: Applicable program guidance (including non-registry listed MGPs).

WHERE to mail the signed Certification Form by March 1st of each year (or within 45 days of the date of the Department notice letter):

New York State Department of Environmental Conservation
Division of Environmental Remediation

Attn: Division of Environmental Remediation – North Section
NYSDEC
270 Michigan Avenue
Buffalo, NY 14203-2999

Please note that extra postage may be required.

V. Definitions

"Engineering Control" (EC), means any physical barrier or method employed to actively or passively contain, stabilize, or monitor contamination, restrict the movement of contamination to ensure the long-term effectiveness of a remedial program, or eliminate potential exposure pathways to contamination. Engineering controls include, but are not limited to, pavement, caps, covers, subsurface barriers, vapor barriers, slurry walls, building ventilation systems, fences, access controls, provision of alternative water supplies via connection to an existing public water supply, adding treatment technologies to such water supplies, and installing filtration devices on private water supplies.

"Institutional Control" (IC), means any non-physical means of enforcing a restriction on the use of real property that limits human and environmental exposure, restricts the use of groundwater, provides notice to potential owners, operators, or members of the public, or prevents actions that would interfere with the effectiveness of a remedial program or with the effectiveness and/or integrity of operation, maintenance, or monitoring activities at or pertaining to a remedial site.

"Professional Engineer" (P.E.) means an individual or firm licensed or otherwise authorized under article 145 of the Education Law of the State of New York to practice engineering.

"Property Owner" means, for purposes of an IC/EC certification, the actual owner of a property. If the site has multiple properties with different owners, the Department requires that the owners be represented by a single representative to sign the certification.

"Oversight Document" means any document the Department issues pursuant to each Remedial Program (see below) to define the role of a person participating in the investigation and/or remediation of a site or area(s) of concern. Examples for the various programs are as follows:

BCP (after approval of the BCP application by DEC) - Brownfield Site Cleanup Agreement.
ERP (after approval of the ERP application by DEC) - State Assistance Contract.
Federal Superfund Sites - Federal Consent Decrees, Administrative Orders on Consent or Unilateral Orders issued pursuant to CERCLA.
Oil Spill Program - Order on Consent, or Stipulation pursuant to Article 12 of the Navigation Law (and the New York Environmental Conservation Law).
State Superfund Program - Administrative Consent Order, Record of Decision.
VCP (after approval of the VCP application by DEC) - Voluntary Cleanup Agreement.
RCRA Corrective Action Sites- Federal Consent Decrees, Administrative Orders on Consent or permit conditions issued pursuant to RCRA.

“Qualified Environmental Professional” (QEP), means a person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding the presence of releases or threatened releases to the surface or subsurface of a property or off-site areas, sufficient to meet the objectives and performance factors for the areas of practice identified by this Part. Such a person must:

(1) hold a current professional engineer’s or a professional geologist’s license or registration issued by the State or another state, and have the equivalent of three years of full-time relevant experience in site investigation and remediation of the type detailed in this Part; or

(2) be a site remediation professional licensed or certified by the federal government, a state or a recognized accrediting agency, to perform investigation or remediation tasks consistent with Department guidance, and have the equivalent of three years of full-time relevant experience.

“Qualitative Exposure Assessment” means a qualitative assessment to determine the route, intensity, frequency, and duration of actual or potential exposures of humans and/or fish and wildlife to contaminants.

“Remedial Party” means a person implementing a remedial program at a remedial site pursuant to an order, agreement or State assistance contract with the Department.

“Site Management” (SM) means the activities undertaken as the last phase of the remedial program at a site, which continue after a Certificate of Completion is issued. Site management is conducted in accordance with a site management plan, which identifies and implements the institutional and engineering controls required for a site, as well as any necessary monitoring and/or operation and maintenance of the remedy.

“Site Management Plan” (SMP) means a document which details the steps necessary to assure that the institutional and engineering controls required for a site are in-place, and any physical components of the remedy are operated, maintained and monitored to assure their continued effectiveness, developed pursuant to Section 6 (DER10 Technical Guide).

“Site Owner” means the actual owner of a site. If the site has multiple owners of multiple properties with ICs and/or ECs, the Department requires that the owners designate a single representative for IC/EC Certification activities.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

Field Inspection Report
Post-Remedial Operation & Maintenance Plan

Property Name: Peter Cooper Markhams Site	Project No.: 0199-001-100
Client:	
Property Address: Bentley Road	Dayton, NY 14041
Property ID: (Tax Assessment Map) Section:	Block: Lot(s):
Preparer's Name: R. Dubisz	Date/Time: 6/27/12- 13:30

CERTIFICATION

The results of this inspection were discussed with the Site Manager. Any corrective actions required have been identified and noted in this report, and a supplemental Corrective Action Form has been completed. Proper implementation of these corrective actions have been discussed with the Site Manager, agreed upon, and scheduled.

Preparer / Inspector: Rick Dubisz **Date: 6/27/12**

Signature: _____

Next Scheduled Inspection Date: Summer 2013

Property Access

1. Is the access road in need of repair?	☐ yes	☑ no	☐ N/A
2. Sufficient signage posted (No Trespassing)?	☑ yes	☐ no	☐ N/A
3. Has there been any noted or reported trespassing?	☐ yes	☑ no	☐ N/A

Please note any irregularities/ changes in site access and security: _____

Final Surface Cover / Vegetation

The integrity of the vegetative soil cover or other surface coverage (e.g., asphalt, concrete) over the entire Site must be maintained. The following documents the condition of the above.

1. Final Cover is in Place and in good condition?	☑ yes	☐ no	☐ N/A
Cover consists of (mainly): Wild Vegatative Grass Cover			
2. Evidence of erosion?	☐ yes	☑ no	☐ N/A
3. Cracks visible in pavement?	☐ yes	☐ no	☑ N/A
4. Evidence of distressed vegetation/turf?	☐ yes	☑ no	☐ N/A
5. Evidence of unintended traffic and/or rutting?	☐ yes	☑ no	☐ N/A
6. Evidence of uneven settlement and/or ponding?	☐ yes	☑ no	☐ N/A

Final Surface Cover / Vegetation

7. Damage to any surface coverage? ☐ yes ☑ no ☐ N/A

If yes to any question above, please provide more information below.

Gas Vent System Monitoring and Maintenance

Are there signs of stressed vegetation around gas vents? ☐ yes ☑ no ☐ N/A

Are the gas vents currently intact and operational? ☑ yes ☐ no ☐ N/A

Has regular maintenance and monitoring been documented and enclosed or referenced? ☑ yes ☐ no ☐ N/A

Groundwater Monitoring

Is there a plan in place and currently being followed? ☑ yes ☐ no ☐ N/A

Are the wells currently intact and operational? ☑ yes ☐ no ☐ N/A

When was the most recent sampling event report and submittal? Date: June 2011

When is the next projected sampling event? Date: Completed June 2012 Event

Property Use Changes / Site Development

Has the property usage changed, or site been redeveloped since the last inspection? ☐ yes ☑ no ☐ N/A

If yes, please list with date: _____

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

Field Inspection Report
Post-Remedial Operation & Maintenance Plan

New Information

Has any new information been brought to the owner/engineer's attention regarding any and/or all engineering and institutional controls and their operation and effectiveness?

☐ yes ☑ no ☐ N/A

Comments:

This space for Notes and Comments

Brush cutting will be required around monitoring wells prior to the next sampling event scheduled for June 2013.

Please include the following Attachments:

1. Site Sketch
2. Photographs