



## Environmental and Planning Consultants

440 Park Avenue South  
7th Floor  
New York, NY 10016  
tel: 212 696-0670  
fax: 212 213-3191  
[www.akrf.com](http://www.akrf.com)

February 3, 2016

Mr. Raphael Ketani  
Engineering Geologist II  
NYSDEC – Region 2  
Bureau of Spill Prevention & Response  
47-40 21<sup>st</sup> Street  
Long Island City, New York 11101-5407

**Subject: I.S. 14K, 2424 Batchelder Street, Brooklyn, NY  
Monitoring Report – Fourth Quarter 2015  
LLW No. 079955; SCA Job No. K014-60178  
NYSDEC Spill No. 11-01592**

Dear Mr. Ketani:

On behalf of the New York City School Construction Authority (NYCSCA), AKRF Engineering, P.C. (AKRF) is pleased to submit this Monitoring Report for New York State Department of Environmental Conservation (NYSDEC) Spill #11-01592 at Intermediate School (I.S.) 14K located at 2424 Batchelder Street in Brooklyn, New York (the “Site”). The spill was reported in May 2011 due to oil seeping through the boiler pit wall in the school basement. A Site Plan is provided as Figure 1.

This report summarizes the activities that were conducted during fourth quarter of 2015 (Q4 2015) to monitor groundwater levels and check for potential recoverable light non-aqueous phase liquid (LNAPL) in the Site subsurface. These activities were conducted in accordance with the recommendations in the December 19, 2012 Supplemental Spill Investigation Report for the Site, which was approved by NYSDEC on January 3, 2013. The monitoring activities included:

- Liquid level monitoring in October and December 2015; and
- On-going LNAPL recovery in RW-1, RW-2, and RW-3.

These activities are described in more detail in the following sections.

### **Liquid Level Monitoring**

Liquid level gauging for this reporting period was conducted by AKRF on October 20, 2015 and December 18, 2015. During the monitoring, an electronic oil/water interface probe was used to measure the water levels and to check for the presence of LNAPL in the on-site monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-8, MW-9, MW-10) and recovery wells (RW-1, RW-2, and RW-3). A geotechnical monitoring well (GT-1), installed by others in the school courtyard, was also gauged during the December monitoring event. Monitoring and recovery well locations are shown on Figure 1. A summary of the liquid level measurements is presented in the attached Table 1.

LNAPL was detected in MW-1 and RW-1 during the October 20, 2015 gauging event, at measured thicknesses of 0.02 and 0.03 feet, respectively. Measureable LNAPL was not detected in any of the monitoring or recovery wells during the December 18, 2015 gauging event. Water table contour maps for the two monitoring events are provided in Attachment A.

### LNAPL Recovery

LNAPL recovery using an oil-absorbent remediation sock was initiated in RW-1 during Q4 2013 and in RW-2 and RW-3 during the Q1 2014. During subsequent gauging events, the socks have been checked for the amount of LNAPL absorbed and replaced with new socks to continue on-going LNAPL recovery<sup>1</sup>. Larger 48-inch remediation socks replaced the 18-inch socks during the October 31, 2014 monitoring event. Although LNAPL was detected in MW-8 during Q3 2015, a sock was not placed in this well because LNAPL was not detected during subsequent monitoring events in Q4 2015.

The LNAPL recovery volumes from RW-1, RW-2 and RW-3 are summarized in the table below. As summarized in the table, an estimated 142 ounces of LNAPL were recovered from RW-1 (28 ounces), RW-2 (9.5 ounces), and RW-3 (104.5 ounces) during the Q4 2015 reporting period. Since the start of LNAPL recovery activities were initiated, a cumulative total of approximately 769.5 ounces of LNAPL has been recovered from RW-1 (241.5 ounces), MW-1 (41.5 ounces), RW-2 (144.5 ounces), and RW-3 (342 ounces).

#### Estimated LNAPL Recovery Volume from MW-1, RW-1, RW-2, and RW-3

Date	Amount of New LNAPL on Sock		Approx. Volume of LNAPL Recovered (oz.) <sup>A,B</sup>		Comments
	Inches	% of sock	Event	Cumulative	
<b>RW-1</b>					
12/31/13	NA	NA	NA	NA	18" Sock first placed in RW-1
3/27/14	6	33	5.5	5.5	Replaced with new 18" sock
6/25/14	8.5	47	8	13.5	Replaced with new 18" sock
10/31/14	16	89	15	28.5	Replaced with new 48" sock
3/3/15	48	100	95	123.5	Replaced with new 48" sock
4/21/15	26	55	52	175.5	Replaced with new 48" sock
7/10/15	10	20	19	194.5	Replaced with new 48" sock
9/2/15	10	20	19	213.5	Replaced with new 48" sock
10/20/15	2	4	4	217.5	Flipped sock
12/18/15	12	25	24	241.5	Replaced with new 48" sock
<b>MW-1</b>					
8/29/12	NA	NA	0	0	18" Sock first placed in MW-1
1/30/2013	3	17	3	3	Replaced with new 18" sock
2/21/2013	3	17	3	6	Flipped 18" sock in well
3/21/2013	3	0	0	6	18" sock left in place, no new LNAPL
4/5/2013	6	33	3	9	Replaced with new 18" sock
4/12/2013	3	17	3	12	Flipped 18" sock in well
4/26/2013	6	33	3	15	Replaced with new 18" sock
5/17/2013	3	17	3	18	Replaced with 18" new sock
6/28/2013	3	17	3	21	Replaced with new 18" sock
8/7/2013	9	50 Upper Half	8.5	29.5	Flipped sock in 18" well
9/26/13	5	28 Lower Half	5	34.5	Replaced with new 18" sock
10/10/13	2	11	2	36.5	Replaced with new 18" sock
12/31/13	5	28	5	41.5	Sock removed from well
<b>RW-2</b>					
10/31/14	2	11	2	2	Replaced 18" sock with new 48" sock
3/3/15	29	60	57	59	Replaced with new 48" sock

<sup>1</sup> LNAPL recovery was initiated in MW-1 in August 2012, but was discontinued after December 2013, because measureable NAPL was no longer detected in this well.

Date	Amount of New LNAPL on Sock		Approx. Volume of LNAPL Recovered (oz.) <sup>A,B</sup>		Comments
	Inches	% of sock	Event	Cumulative	
4/21/15	10	20	19	78	Replaced with new 48" sock
7/10/15	5	10	9.5	87.5	Replaced with new 48" sock
9/2/15	24	50	47.5	135	Replaced with new 48" sock
10/20/15	0	NA	0	135	Placed existing sock back in well
12/18/15	5	10	9.5	144.5	Replaced with new 48" sock
<b>RW-3</b>					
10/31/14	5	28	5	5	Replaced 18" sock with new 48" sock
3/3/15	46	95	90	95	Replaced with new 48" sock
4/21/15	19	40	38	133	Replaced with new 48" sock
7/10/15	29	60	57	190	Replaced with new 48" sock
9/2/15	24	50	47.5	237.5	Replaced with new 48" sock
10/20/15	14.5	30	28.5	266	Replaced with new 48" sock
12/18/15	39	80	76	342	Replaced with new 48" sock

**Notes:**

<sup>A</sup>Volume of LNAPL Recovered = % of LNAPL on 18" Sock x 17 ounces (based on manufacturer information indicating that each sock absorbs up to 17 ounces of petroleum-based liquid)

<sup>B</sup>Volume of LNAPL Recovered = % of LNAPL on 48" Sock x 95 ounces (based on manufacturer information indicating that each sock absorbs up to 95 ounces of petroleum-based liquid)

**Conclusions and Recommendations**

LNAPL was detected in MW-1 and RW-1 during the October 20, 2015 gauging event, at measured thicknesses of 0.02 and 0.03 feet, respectively. Measureable LNAPL was not detected in any of the monitoring or recovery wells during the December 18, 2015 gauging event. LNAPL recovery using oil-absorbent remediation socks in RW-1, RW-2, and RW-3 totaled approximately 142 ounces for the Q4 2015 reporting period.

Based on the findings from this reporting period, AKRF recommends the following:

- Continue LNAPL recovery in RW-1, RW-2, and RW-3 and quarterly liquid level gauging in all on-site recovery/monitoring wells.
- Conduct the next bi-annual groundwater sampling in March 2016.
- Coordinate with the New York City Department of Education (NYCDOE) to provide environmental oversight during their planned excavation and replacement of the UST fuel oil fill lines at the school. Environmental oversight should include assessing conditions beneath the fill lines and directing the contractor to remove contaminated soil (if observed) for off-site disposal, as feasible. Endpoint samples should be collected if appropriate.
- Following fill line removal (and potential contaminated soil removal), re-assess the proposed enhanced LNAPL recovery methods summarized in our Q2 2014 monitoring report to determine whether they are still applicable.

If you have any questions or require additional information, please contact me at 914-922-2362.

Sincerely yours,  
AKRF Engineering, P.C.



Rebecca A. Kinal, P.E.  
Vice President

cc: S. Kanaparthi, NYCSCA

Attachments:

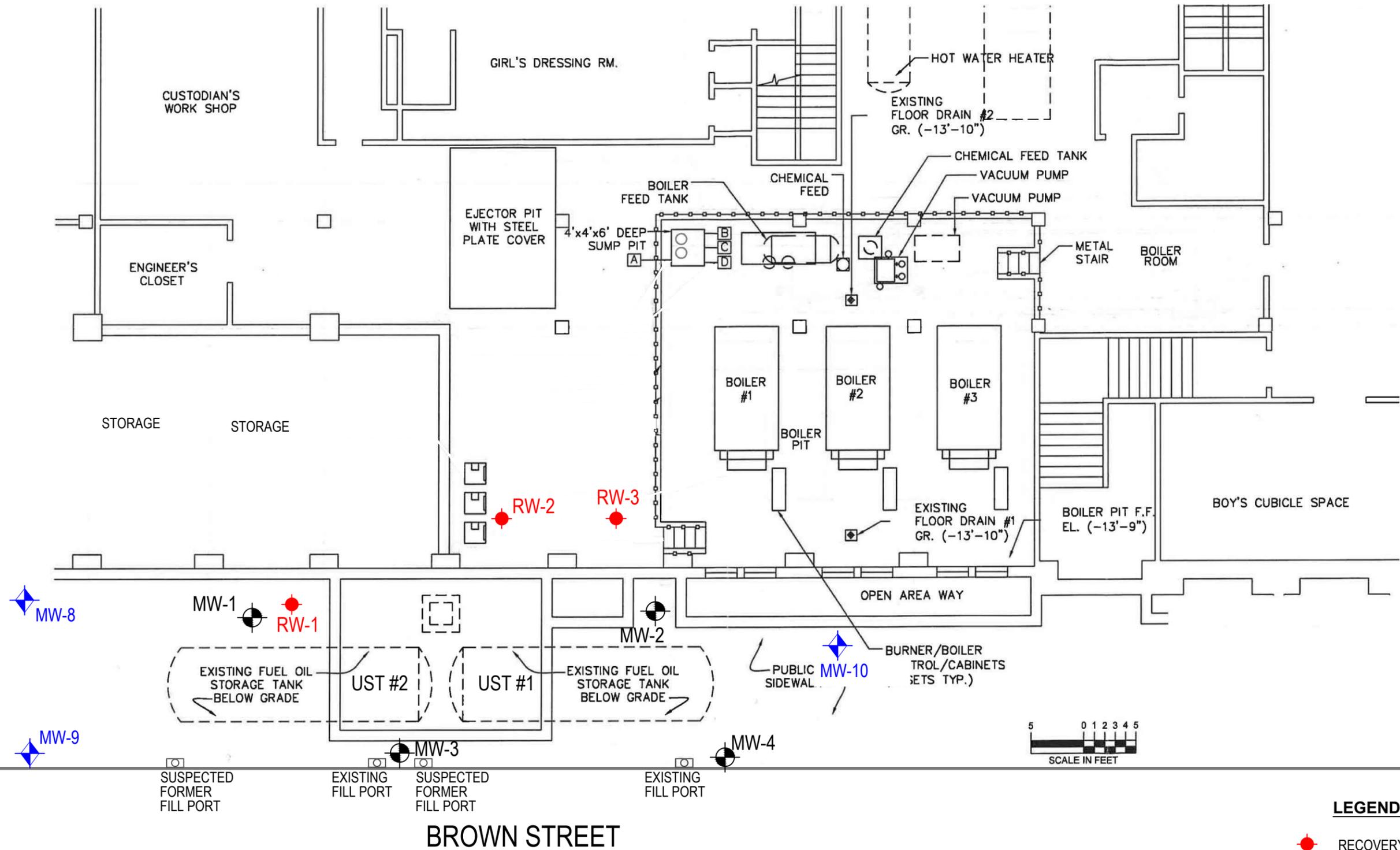
Figure 1 – Site Plan

Table 1 – Liquid Level Measurements

Attachment A – Groundwater Contour Maps

**FIGURE**

©2011 AKRF, Inc. Environmental Consultants M:\AKRF Project Files\86098 - 14K Supplemental SIFIGURES\Figures for Recovery Well Report\86098 Fig. 1 monitoring & recovery well locations.dwg



**LEGEND:**

- RECOVERY WELL
- MW-4 MONITORING WELL (SI)
- GB/MW-8 MONITORING WELL (SSI)



**AKRF**  
Environmental Consultants  
440 Park Avenue South, New York, NY 10016

**I.S. 14K**  
BROOKLYN, NEW YORK  
**MONITORING AND RECOVERY WELL LOCATIONS**

DATE	4.26.2013
PROJECT NO.	86098
SCALE	as shown
FIGURE	1

**TABLE**

**TABLE 1**  
**I.S. 14K**  
**2424 Batchelder Street, Brookly, NY**  
Liquid Level Monitoring Summary

Well ID	TOC Elev <sup>1</sup>	Date	DTW <sup>2</sup>	DTP <sup>3</sup>	LNAPL Thickness <sup>4</sup>	Water Table Elevation <sup>5,6</sup>
MW-1	9.94	1/30/2013	10.35	ND	ND	-0.41
	9.94	2/21/2013	10.20	ND	ND	-0.26
	9.94	3/21/2013	10.41	ND	ND	-0.47
	9.94	4/5/2013	10.20	ND	ND	-0.26
	9.94	4/12/2013	10.01	ND	ND	-0.07
	9.94	4/26/2013	10.22	ND	ND	-0.28
	9.94	5/17/2013	10.09	ND	ND	-0.15
	9.94	6/25/2013	9.95	ND	ND	-0.01
	9.94	8/7/2013	10.35	ND	ND	-0.41
	9.94	9/26/2013	10.18	ND	ND	-0.24
	9.94	10/10/2013	10.15	ND	ND	-0.21
	9.94	12/31/2013	10.35	ND	ND	-0.41
	9.94	3/27/2014	10.27	ND	ND	-0.33
	9.94	6/25/2014	9.96	ND	ND	-0.02
	9.94	10/31/2014	10.11	10.1	0.01	-0.17
	9.94	3/3/2015	NA	NA	NA	NA
	9.94	4/21/2015	10.15	ND	ND	-0.21
	9.94	7/10/2015	10.15	ND	ND	-0.21
	9.94	9/2/2015	10.18	ND	ND	-0.24
9.94	10/20/2015	10.00	9.98	0.02	-0.06	
9.94	12/18/2015	10.14	ND	ND	-0.20	
MW-2	10.15	1/30/2013	10.25	ND	ND	-0.10
	10.15	2/21/2013	10.25	ND	ND	-0.10
	10.15	3/21/2013	10.60	ND	ND	-0.45
	10.15	4/5/2013	10.49	ND	ND	-0.34
	10.15	4/12/2013	10.18	ND	ND	-0.03
	10.15	4/26/2013	10.43	ND	ND	-0.28
	10.15	5/17/2013	10.26	ND	ND	-0.11
	10.15	6/25/2013	10.04	ND	ND	0.11
	10.15	8/7/2013	10.30	ND	ND	-0.15
	10.15	9/26/2013	10.39	ND	ND	-0.24
	10.15	10/10/2013	10.38	ND	ND	-0.23
	10.15	12/31/2013	10.59	ND	ND	-0.44
	10.15	3/27/2014	10.42	ND	ND	-0.27
	10.15	6/25/2014	10.21	ND	ND	-0.06
	10.15	10/31/2014	10.30	ND	ND	-0.15
	10.15	3/3/2015	10.51	ND	ND	-0.36
	10.15	4/21/2015	10.37	ND	ND	-0.22
	10.15	7/10/2015	10.35	ND	ND	-0.20
	10.15	9/2/2015	10.40	ND	ND	-0.25
10.15	10/20/2015	10.21	ND	ND	-0.06	
10.15	12/18/2015	10.35	ND	ND	-0.20	

**TABLE 1**  
**I.S. 14K**  
**2424 Batchelder Street, Brooklyn, NY**  
Liquid Level Monitoring Summary

Well ID	TOC Elev <sup>1</sup>	Date	DTW <sup>2</sup>	DTP <sup>3</sup>	LNAPL Thickness <sup>4</sup>	Water Table Elevation <sup>5,6</sup>
MW-3	9.68	1/30/2013	10.12	ND	ND	-0.44
	9.68	2/21/2013	10.05	ND	ND	-0.37
	9.68	3/21/2013	10.20	ND	ND	-0.52
	9.68	4/5/2013	10.03	ND	ND	-0.35
	9.68	4/12/2013	10.00	ND	ND	-0.32
	9.68	4/26/2013	9.99	ND	ND	-0.31
	9.68	5/17/2013	9.85	ND	ND	-0.17
	9.68	6/25/2013	9.69	ND	ND	-0.01
	9.68	8/7/2013	9.91	ND	ND	-0.23
	9.68	9/26/2013	9.95	ND	ND	-0.27
	9.68	10/10/2013	9.93	ND	ND	-0.25
	9.68	12/31/2013	10.11	ND	ND	-0.43
	9.68	3/27/2014	10.02	ND	ND	-0.34
	9.68	6/25/2014	10.10	ND	ND	-0.42
	9.68	10/31/2014	9.85	ND	ND	-0.17
	9.68	3/3/2015	10.08	ND	ND	-0.40
	9.68	4/21/2015	9.90	ND	ND	-0.22
	9.68	7/10/2015	9.89	ND	ND	-0.21
	9.68	9/2/2015	9.92	ND	ND	-0.24
9.68	10/20/2015	9.75	ND	ND	-0.07	
9.68	12/18/2015	9.97	ND	ND	-0.29	
MW-4	9.7	1/30/2013	9.90	ND	ND	-0.20
	9.7	2/21/2013	9.80	ND	ND	-0.10
	9.7	3/21/2013	10.30	ND	ND	-0.60
	9.7	4/5/2013	10.06	ND	ND	-0.36
	9.7	4/12/2013	10.02	ND	ND	-0.32
	9.7	4/26/2013	10.02	ND	ND	-0.32
	9.7	5/17/2013	9.87	ND	ND	-0.17
	9.7	6/25/2013	9.73	ND	ND	-0.03
	9.7	8/7/2013	9.95	ND	ND	-0.25
	9.7	9/26/2013	9.99	ND	ND	-0.29
	9.7	10/10/2013	10.00	ND	ND	-0.30
	9.7	12/31/2013	10.11	ND	ND	-0.41
	9.7	3/27/2014	10.05	ND	ND	-0.35
	9.7	6/25/2014	9.76	ND	ND	-0.06
	9.7	10/31/2014	9.90	ND	ND	-0.20
	9.7	3/3/2015	10.11	ND	ND	-0.41
	9.7	4/21/2015	9.95	ND	ND	-0.25
	9.7	7/10/2015	9.99	ND	ND	-0.29
	9.7	9/2/2015	9.98	ND	ND	-0.28
9.7	10/20/2015	9.80	ND	ND	-0.10	
9.7	12/18/2015	9.69	ND	ND	0.01	

**TABLE 1**  
**I.S. 14K**  
**2424 Batchelder Street, Brookly, NY**  
Liquid Level Monitoring Summary

Well ID	TOC Elev <sup>1</sup>	Date	DTW <sup>2</sup>	DTP <sup>3</sup>	LNAPL Thickness <sup>4</sup>	Water Table Elevation <sup>5,6</sup>
MW-8	9.89	1/30/2013	10.33	ND	ND	-0.44
	9.89	2/21/2013	10.10	ND	ND	-0.21
	9.89	3/21/2013	10.28	ND	ND	-0.39
	9.89	4/5/2013	10.22	ND	ND	-0.33
	9.89	4/12/2013	10.29	ND	ND	-0.40
	9.89	4/26/2013	10.17	ND	ND	-0.28
	9.89	5/17/2013	10.04	ND	ND	-0.15
	9.89	6/25/2013	9.88	ND	ND	0.01
	9.89	8/7/2013	10.09	ND	ND	-0.20
	9.89	9/26/2013	10.13	ND	ND	-0.24
	9.89	10/10/2013	10.13	ND	ND	-0.24
	9.89	12/31/2013	10.30	ND	ND	-0.41
	9.89	3/27/2014	10.22	ND	ND	-0.33
	9.89	6/25/2014	9.85	ND	ND	0.04
	9.89	10/31/2014	10.04	ND	ND	-0.15
	9.89	3/3/2015	10.29	ND	ND	-0.40
	9.89	4/21/2015	10.10	ND	ND	-0.21
	9.89	7/10/2015	10.08	ND	ND	-0.19
	9.89	9/2/2015	10.10	10.05	0.05	-0.21
	9.89	10/20/2015	9.96	ND	ND	-0.07
9.89	12/18/2015	10.08	ND	ND	-0.19	
MW-9	9.51	1/30/2013	9.92	ND	ND	-0.41
	9.51	2/21/2013	9.85	ND	ND	-0.34
	9.51	3/21/2013	10.05	ND	ND	-0.54
	9.51	4/5/2013	9.85	ND	ND	-0.34
	9.51	4/12/2013	9.81	ND	ND	-0.30
	9.51	4/26/2013	9.80	ND	ND	-0.29
	9.51	5/17/2013	9.66	ND	ND	-0.15
	9.51	6/25/2013	9.51	ND	ND	0.00
	9.51	8/7/2013	9.73	ND	ND	-0.22
	9.51	9/26/2013	9.76	ND	ND	-0.25
	9.51	10/10/2013	9.77	ND	ND	-0.26
	9.51	12/31/2013	9.94	ND	ND	-0.43
	9.51	3/27/2014	9.85	ND	ND	-0.34
	9.51	6/25/2014	9.51	ND	ND	0.00
	9.51	10/31/2014	9.67	ND	ND	-0.16
	9.51	3/3/2015	NA	NA	NA	NA
	9.51	4/21/2015	9.72	ND	ND	-0.21
	9.51	7/10/2015	9.72	ND	ND	-0.21
	9.51	9/2/2015	9.74	ND	ND	-0.23
	9.51	10/20/2015	9.58	ND	ND	-0.07
9.51	12/18/2015	9.71	ND	ND	-0.20	

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**2424 Batchelder Street, Brookly, NY**  
Liquid Level Monitoring Summary

Well ID	TOC Elev <sup>1</sup>	Date	DTW <sup>2</sup>	DTP <sup>3</sup>	LNAPL Thickness <sup>4</sup>	Water Table Elevation <sup>5,6</sup>
MW-10	9.84	1/30/2013	10.30	ND	ND	-0.46
	9.84	2/21/2013	10.28	ND	ND	-0.44
	9.84	3/21/2013	10.51	ND	ND	-0.67
	9.84	4/5/2013	10.22	ND	ND	-0.38
	9.84	4/12/2013	10.07	ND	ND	-0.23
	9.84	4/26/2013	10.17	ND	ND	-0.33
	9.84	5/17/2013	10.02	ND	ND	-0.18
	9.84	6/25/2013	9.88	ND	ND	-0.04
	9.84	8/7/2013	10.04	ND	ND	-0.20
	9.84	9/26/2013	10.12	ND	ND	-0.28
	9.84	10/10/2013	10.11	ND	ND	-0.27
	9.84	12/31/2013	10.25	ND	ND	-0.41
	9.84	3/27/2014	10.31	ND	ND	-0.47
	9.84	6/25/2014	9.91	ND	ND	-0.07
	9.84	10/31/2014	10.04	ND	ND	-0.20
	9.84	3/3/2015	10.27	ND	ND	-0.43
	9.84	4/21/2015	10.08	ND	ND	-0.24
	9.84	7/10/2015	10.07	ND	ND	-0.23
	9.84	9/2/2015	10.12	ND	ND	-0.28
	9.84	10/20/2015	9.95	ND	ND	-0.11
9.84	12/18/2015	10.06	ND	ND	-0.22	
GT-1	10.52	1/30/2013	11.10	ND	ND	-0.58
	10.52	2/21/2013	11.05	ND	ND	-0.53
	10.52	3/21/2013	10.96	ND	ND	-0.44
	10.52	4/5/2013	10.95	ND	ND	-0.43
	10.52	4/12/2013	10.98	ND	ND	-0.46
	10.52	4/26/2013	NA	ND	ND	NA
	10.52	5/17/2013	10.75	ND	ND	-0.23
	10.52	6/25/2013	NA	NA	NA	NA
	10.52	8/7/2013	NA	NA	NA	NA
	10.52	9/26/2013	NA	NA	NA	NA
	10.52	10/10/2013	NA	NA	NA	NA
	10.52	12/31/2013	NA	NA	NA	NA
	10.52	3/27/2014	NA	NA	NA	NA
	10.52	6/25/2014	NA	NA	NA	NA
	10.52	10/31/2014	10.75	ND	ND	-0.23
	10.52	3/3/2015	NA	NA	NA	NA
	10.52	4/21/2015	10.86	ND	ND	-0.34
	10.52	7/10/2015	10.83	ND	ND	-0.31
	10.52	9/2/2015	10.85	ND	ND	-0.33
	10.52	10/20/2015	NA	NA	NA	NA
10.52	12/18/2015	10.82	ND	ND	-0.30	

**TABLE 1**  
**I.S. 14K**  
**2424 Batchelder Street, Brookly, NY**  
 Liquid Level Monitoring Summary

Well ID	TOC Elev <sup>1</sup>	Date	DTW <sup>2</sup>	DTP <sup>3</sup>	LNAPL Thickness <sup>4</sup>	Water Table Elevation <sup>5,6</sup>
RW-1	10.1	4/5/2013	10.50	ND	ND	-0.40
	10.1	4/12/2013	10.40	ND	ND	-0.30
	10.1	4/26/2013	10.42	ND	ND	-0.32
	10.1	5/17/2013	10.29	ND	ND	-0.19
	10.1	6/25/2013	10.13	ND	ND	-0.03
	10.1	8/7/2013	10.35	ND	ND	-0.25
	10.1	9/26/2013	10.44	ND	ND	-0.34
	10.1	10/10/2013	10.45	ND	ND	-0.35
	10.1	12/31/2013	10.57	10.4	0.17	-0.32
	10.1	3/27/2014	10.58	10.39	0.19	-0.31
	10.1	6/25/2014	9.96	9.9	0.06	0.19
	10.1	10/31/2014	10.60	10.55	0.05	-0.46
	10.1	3/3/2015	10.60	10.55	0.05	-0.46
	10.1	4/21/2015	10.37	ND	ND	NA
	10.1	7/10/2015	10.40	ND	ND	NA
	10.1	9/2/2015	10.35	10.3	0.05	-0.21
	10.1	10/20/2015	10.21	10.18	0.03	-0.08
10.1	12/18/2015	10.59	ND	ND	-0.49	
RW-2	3.94	4/5/2013	4.30	ND	ND	-0.36
	3.94	4/12/2013	4.23	ND	ND	-0.29
	3.94	4/26/2013	4.25	ND	ND	-0.31
	3.94	5/17/2013	4.12	ND	ND	-0.18
	3.94	6/25/2013	4.00	ND	ND	-0.06
	3.94	8/7/2013	4.15	ND	ND	-0.21
	3.94	9/26/2013	4.24	ND	ND	-0.30
	3.94	10/10/2013	4.23	ND	ND	-0.29
	3.94	12/31/2013	4.32	ND	ND	-0.38
	3.94	3/27/2014	4.29	ND	ND	-0.35
	3.94	6/25/2014	4.11	ND	ND	-0.17
	3.94	10/31/2014	4.13	4.08	0.05	-0.19
	3.94	3/3/2015	4.43	ND	ND	-0.49
	3.94	4/21/2015	4.22	ND	ND	-0.28
	3.94	7/10/2015	4.20	ND	ND	-0.26
	3.94	9/2/2015	4.20	4.15	0.05	-0.26
	3.94	10/20/2015	4.10	ND	ND	-0.16
3.94	12/18/2015	4.16	ND	ND	-0.22	

**TABLE 1**  
**I.S. 14K**  
**2424 Batchelder Street, Brookly, NY**  
Liquid Level Monitoring Summary

Well ID	TOC Elev <sup>1</sup>	Date	DTW <sup>2</sup>	DTP <sup>3</sup>	LNAPL Thickness <sup>4</sup>	Water Table Elevation <sup>5,6</sup>
RW-3	4.23	4/5/2013	4.61	ND	ND	-0.38
	4.23	4/12/2013	4.57	ND	ND	-0.34
	4.23	4/26/2013	4.56	ND	ND	-0.33
	4.23	5/17/2013	4.42	ND	ND	-0.19
	4.23	6/25/2013	4.27	ND	ND	-0.04
	4.23	8/7/2013	4.21	ND	ND	0.02
	4.23	9/26/2013	4.52	ND	ND	-0.29
	4.23	10/10/2013	4.55	ND	ND	-0.32
	4.23	12/31/2013	4.61	ND	ND	-0.38
	4.23	3/27/2014	4.55	ND	ND	-0.32
	4.23	6/25/2014	4.35	ND	ND	-0.12
	4.23	10/31/2014	4.44	4.39	0.05	-0.21
	4.23	3/3/2015	4.69	4.67	0.02	-0.46
	4.23	4/21/2015	4.48	ND	ND	-0.25
	4.23	7/10/2015	4.55		ND	-0.32
	4.23	9/2/2015	4.50	4.45	0.05	-0.27
	4.23	10/20/2015	4.41	ND	ND	-0.18
4.23	12/18/2015	4.50	ND	ND	-0.27	

**Notes:**

<sup>1</sup>Top of casing elevation (relative to an assumed Borough of Brooklyn Highway Datum)

<sup>2</sup>Depth to Water

<sup>3</sup>Depth to Product

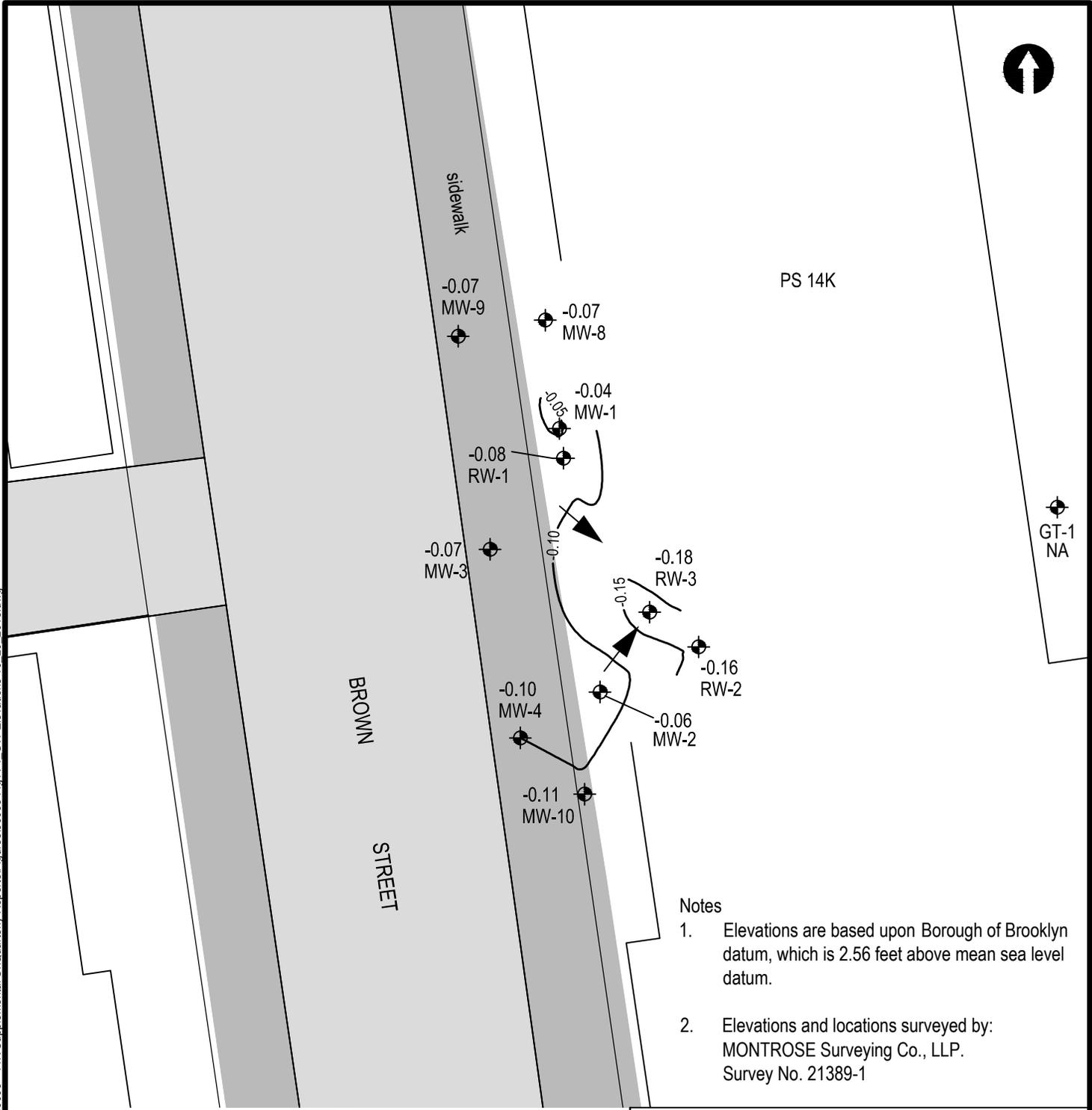
<sup>4</sup>LNAPL Thickness = DTW - DTP

<sup>5</sup>Water table elevation = TOC Elevation - DTW

<sup>6</sup>Corrected water table elevation (for wells containing LNAPL) = measured water table elevation + (free product thickness \* free product specific gravity of 0.9).

**ATTACHMENT A**  
**GROUNDWATER CONTOUR MAPS**

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GT-1  
NA

PS 14K

BROWN  
STREET

sidewalk

-0.07  
MW-9

-0.07  
MW-8

-0.04  
MW-1

-0.08  
RW-1

-0.07  
MW-3

-0.18  
RW-3

-0.16  
RW-2

-0.10  
MW-4

-0.06  
MW-2

-0.11  
MW-10

Notes

1. Elevations are based upon Borough of Brooklyn datum, which is 2.56 feet above mean sea level datum.
2. Elevations and locations surveyed by:  
MONTROSE Surveying Co., LLP.  
Survey No. 21389-1

**LEGEND:**

⊕ -0.07  
MW-8

WATER TABLE ELEVATION IN FEET  
MONITORING WELL

— -0.15 —

ELEVATION CONTOUR IN FEET



GROUNDWATER FLOW DIRECTION



**I.S. 14K**  
BROOKLYN, NEW YORK

**WATER TABLE ELEVATION  
CONTOURS 10/20/2015**



**Environmental Consultants**  
440 Park Avenue South, New York, N.Y. 10016

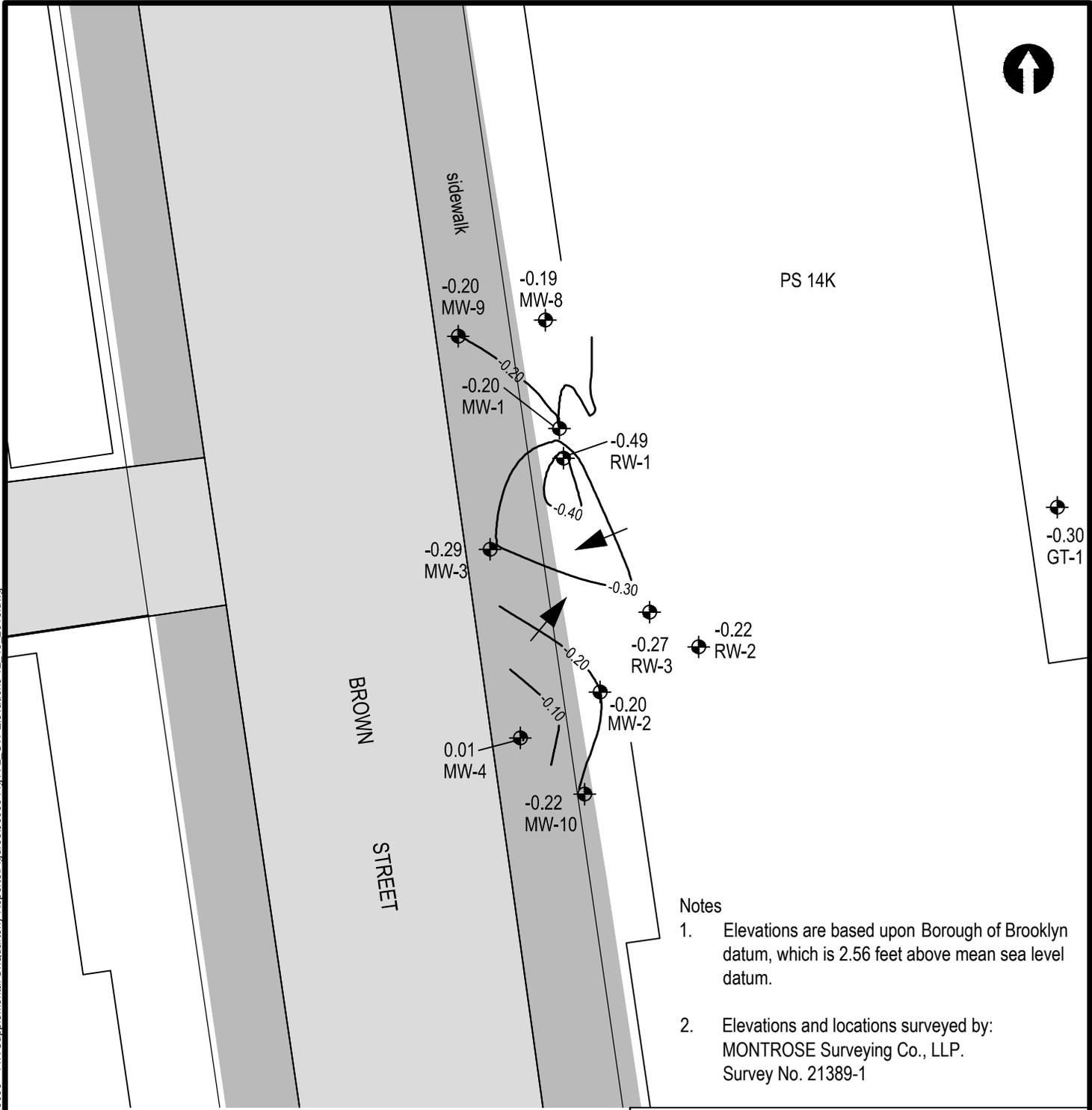
DATE  
**1/22/2016**

PROJECT No.  
**86098**

SCALE  
**as shown**

FIGURE  
**A-1**

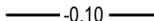
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- Notes
1. Elevations are based upon Borough of Brooklyn datum, which is 2.56 feet above mean sea level datum.
  2. Elevations and locations surveyed by:  
MONTROSE Surveying Co., LLP.  
Survey No. 21389-1



**LEGEND:**

-  -0.19 MW-8 WATER TABLE ELEVATION IN FEET MONITORING WELL
-  -0.10 ELEVATION CONTOUR IN FEET
-  GROUNDWATER FLOW DIRECTION

**I.S. 14K**  
BROOKLYN, NEW YORK

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**WATER TABLE ELEVATION  
CONTOURS 12/18/2015**



**Environmental Consultants**  
440 Park Avenue South, New York, N.Y. 10016

DATE  
**1/22/2016**

PROJECT No.  
**86098**

SCALE  
**as shown**

FIGURE  
**A-2**

