FPM group Engineering and Environmental Science

An Olgoonik Company

CORPORATE HEADQUARTERS
640 Johnson Avenue
Suite 101
Bohemia, NY 11716
631-737-6200
Fax 631-737-2410

June 26, 2023

Ms. Jasmine N. Stefansky
Remedial Bureau E, Section D
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7013

Re: **Well Installation Report**
Liberty Industrial Finishing Site NYSDEC #152108
500-550 Suffolk Avenue, Brentwood, NY
FPM File No. 1389g-22-05

Dear Ms. Stefansky:

Replacement groundwater monitoring wells have been installed at the above-referenced Site, as required by the New York State Department of Environmental Conservation (NYSDEC) and in accordance with prior discussions. This report documents the well installation and development procedures and well construction details.

The wells required to be replaced were onsite wells MW-2, MW-3, MW-4, MW-7, and MW-17. FPM Group, Ltd. (FPM) coordinated, observed, and documented the well installation process and conducted the well development. Well drilling and installation were performed by a well installation contractor, Aarco Environmental Services Corp. (Aarco), under direct supervision by FPM. All well installation was performed in accordance with applicable portions of the NYSDEC-approved Site Management Plan (SMP) for the Site. Surveying services were provided by Labcrew Engineering (Labcrew). Mr. Adam Carey from EA was onsite to observe the proceedings on behalf of the NYSDEC.

The locations of the replacement groundwater monitoring wells (MW-2A, MW-3A, MW-4A, MW-7A, and MW-17A) are shown on the attached Figure 1. They are close to the former well locations and were selected in consultation with Labcrew and the property owner to avoid new utility lines and new infrastructure constructed on Parcel B. The One-Call service was contacted prior to the onsite activities to mark out the utilities in the adjoining public street. Prior to the start of work FPM and the driller reviewed the utility markings in the street, sidewalk, and onsite to confirm that no utilities appeared to be present in the work area. No utilities were encountered during the work.

Well Installation and Development Procedures

Aarco utilized a Geoprobe 8150LS sonic rig to install each of the proposed wells to its targeted depth between April 17 and 19, 2023. Each well boring was advanced to one foot below the targeted depth following which a two-inch-diameter Schedule 40 PVC screen and casing were used to construct each well in its borehole. Shallow wells MW-2A, MW-3A, MW-4A, and MW-7A were each installed to approximately 55 feet below grade and deep well MW-17A was installed to approximately 100 feet below grade, as shown on Table 1 (attached). The screen intervals of the shallow wells were set from 35 to 55 feet below grade so as to span the water table. The screen of the deep well was set from 90 to 100 feet below grade. The borehole annulus around each screen interval was backfilled with clean #2 well gravel to approximately two feet above the top of the screen. A two-foot bentonite seal was placed above the gravel. The balance of each borehole to about one foot below grade was backfilled with soil cuttings that had originated from the borehole. A bentonite seal was placed above the borehole backfill. The top of each well casing was fitted with an expansion-fit lockable well plug. A flush-mount well box set in concrete was constructed above the top of each well. Table 1 (attached) lists the newly-installed wells, their

construction details, and additional information. Well construction logs are included in Attachment 1. A photolog (attached) shows the well installation activities.

An FPM qualified environmental professional (QEP) observed the well installation work and screened the soil cuttings for indications of potential contamination. No indications (staining, sheen, odor) of potential contamination were noted for any of the cuttings. Based on these observations, it was concluded that the cuttings did not appear contaminated and, accordingly, they were used as well borehole backfill as needed. Excess cuttings were placed on the ground surface in an undeveloped area on the south side of the Site.

The QEP conducted dust and organic vapor monitoring during part of the active well drilling as per the Community Air Monitoring Plan (CAMP) included in the SMP. All CAMP monitoring results recorded are summarized on the CAMP monitoring log in Attachment 1. It should be noted that the rented equipment for dust and organic vapor monitoring was not available during the first day of well installation and did not arrive onsite until late in the second day of well installation. Accordingly, it was decided to install the upgradient wells (MW-7A and MW-17A) first as these locations were unlikely to exhibit any impacts that could result in CAMP exceedances. No organic vapor readings were noted during any of the well drilling or installation activities, no significant dust levels were recorded, and no visible dust was observed. No exceedances of any CAMP action levels were noted and no complaints were received. A copy of the CAMP log is included in Appendix A.

Well development was conducted by the QEP using a submersible pump to evacuate each well of multiple casing volumes of groundwater until the parameters pH, specific conductivity, and temperature had stabilized and the turbidity was reduced to below 50 nephelometric turbidity units (NTU). The stability parameters were monitored and are documented on the well development logs in Attachment 1. No sheen, odor, or other indications suggestive of potential contamination were noted on any of the groundwater produced during the well development process. Accordingly, the well development water was discharged to the ground surface in the immediate vicinity of each well and allowed to infiltrate.

Following completion of well installation, a Labcrew surveyor measured the location and elevations of the top of casing and top of manhole for each well relative to the existing Site datum. The resulting information is noted on Table 1 and a copy of the survey is included in Attachment 1.

Summary

The former onsite monitoring wells MW-2, MW-3, MW-4, MW-7, and MW-17 have been replaced as required by the NYSDEC. The new wells MW-2A, MW-3A, MW-4A, MW-7A, and MW-17A are in approximately the same locations and have essentially the same configuration as the former wells. The wells have been developed and surveyed and are available for use.

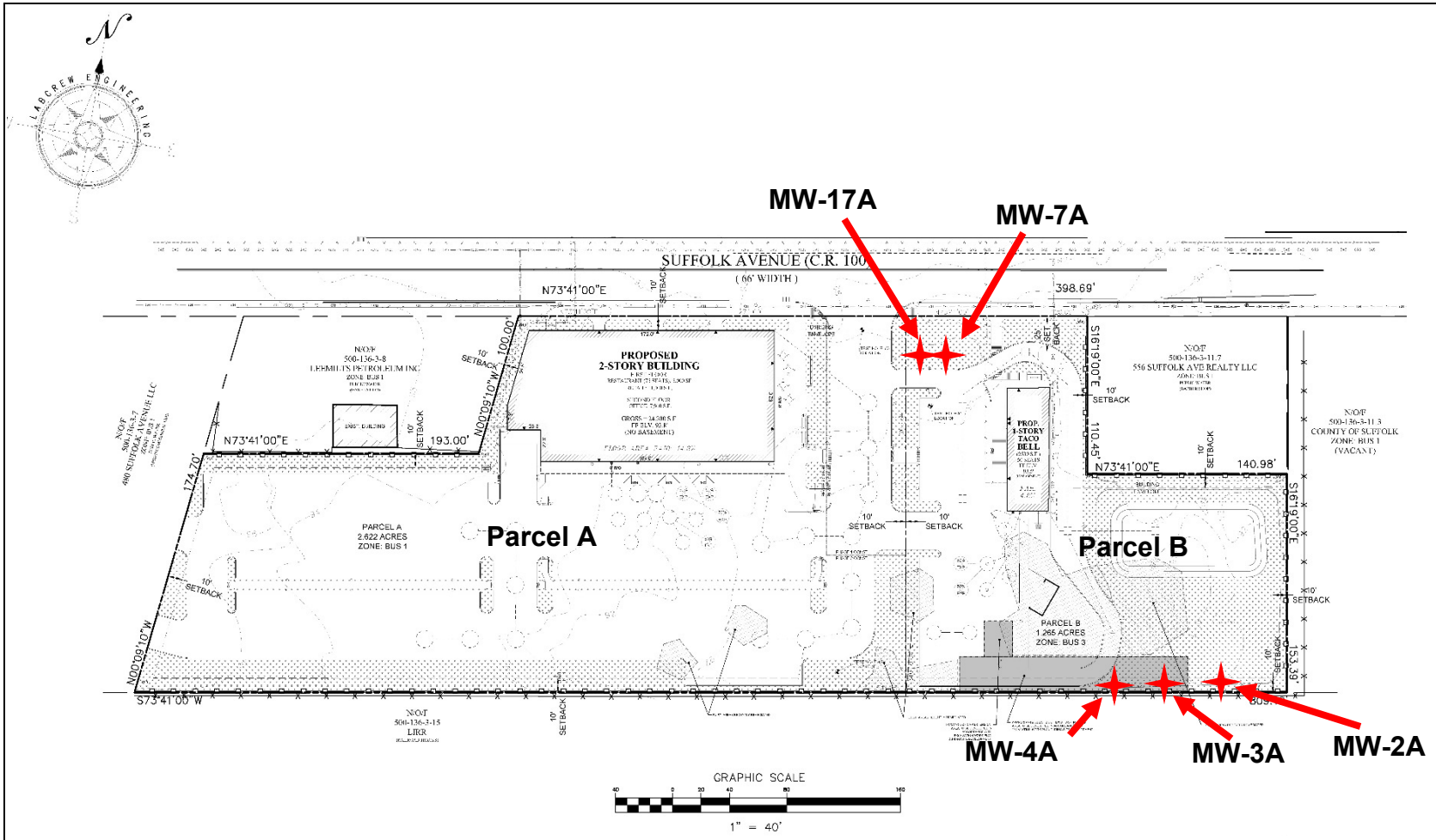
Very truly yours,

Stephanie O. Davis, PG
Senior Project Manager
Vice President

Attachment 1 – Well Construction and Development Logs, CAMP Monitoring Log, Well Survey, photolog
SOD/sod

S:\Liberty Industrial\Well installation\WellInstallationReport-LibertyIndFinishing.docx

FPM



FPM GROUP

FIGURE 1
REPLACEMENT MONITORING WELLS

550 Suffolk Avenue
Brentwood, New York

Drawn by: SOD Checked By: SOD Date: 4/25/2023

S:\Liberty Industrial\Well installation\Fig1-Replacement Well Locations.docx

FPM

Table 1
Replacement Well Construction Data
Liberty Industrial Finishing Site, #152108
500-550 Suffolk Avenue, Brentwood, NY

Well No.	Latitude	Longitude	Top of Manhole Elevation	Top of Casing Elevation	Total Well Depth (feet below TOC)	Well Screen Interval (feet below TOC)	Well Diameter (inches)	Screen Slot Size (inches)	Initial Depth to Water (feet below TOC) April 2023
MW-2A	40° 46' 43.44" N	73° 15' 13.15" W	92.53	92.26	55.12	35 to 55	2	0.02	46.88
MW-3A	40° 46' 43.33" N	73° 15' 13.46" W	92.62	92.29	55.20	35 to 55	2	0.02	46.93
MW-4A	40° 46' 43.24" N	73° 15' 13.73" W	92.31	91.98	54.51	35 to 55	2	0.02	46.59
MW-7A	40° 46' 44.95" N	73° 15' 16.27" W	93.21	92.93	54.87	35 to 55	2	0.02	47.36
MW-17A	40° 46' 44.91" N	73° 15' 16.42" W	93.26	93.01	99.21	90 to 100	2	0.02	52.45

Notes:

TOC = Top of casing

Elevations based on NAVD 1988

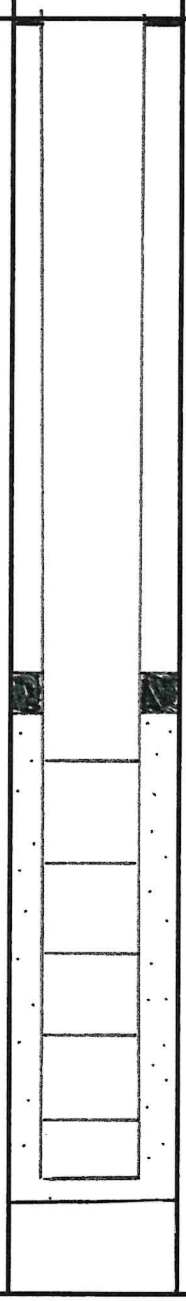
ATTACHMENT 1

- Well Construction Logs
- Well Development Logs
- CAMP Monitoring Log
- Well Survey
- Photolog

FPM GROUP
Bohemia, NY

MAP

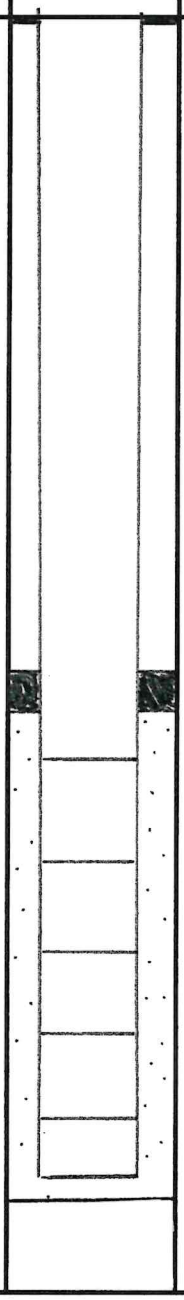
PROJECT NAME	550 Liberty Plaza, LLC	FPM JOB #			
SITE ADDRESS	550 Suffolk Ave				
BORING/WELL	MW-2A	TOTAL DEPTH	55	DIAMETER	2"
TOC ELEVATION		WATER LEVEL INITIAL		STATIC	
SCREEN DIA.	2"	LENGTH	20'	SLOT SIZE	20
CASING DIA.	2"	LENGTH	35'	TYPE	Schedule 40
DRILLING CO.	AARCO	DRILLING METHOD			Sonic
DRILLER	Dan	LOG BY	CD	DATE DRILLED	4/18/23

DEPTH (FT)	SAMPLE	OVA/PID (PPM)	WELL CONSTRUCTION	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (INTERVAL, RECOVERY, COLOR, MATRIX TYPE, MOISTURE CONTENT, COMMENTS)
4					6" manhole flush mount
8					0.5-1' bentonite grout
12					1-31' back filled with cuttings
16					31-33' bentonite grout
20					33-56' #2 Sand
24					0.5-35 2" Schedule 40 PVC
28					35-55 20 slot schedule 40 PVC
32					
36					
40					
44					
48					
52					
56					
60					

FPM GROUP
Bohemia, NY

MAP

PROJECT NAME	550 Liberty Plaza, LLC	FPM JOB #			
SITE ADDRESS	550 Suffolk Ave				
BORING/WELL	MW-3A	TOTAL DEPTH	55	DIAMETER	2"
TOC ELEVATION		WATER LEVEL INITIAL		STATIC	
SCREEN DIA.	2"	LENGTH	20'	SLOT SIZE	20
CASING DIA.	2"	LENGTH	35'	TYPE	Schedule 40
DRILLING CO.	AARCO	DRILLING METHOD			Sonic
DRILLER	Dan	LOG BY	CD	DATE DRILLED	4/18/23

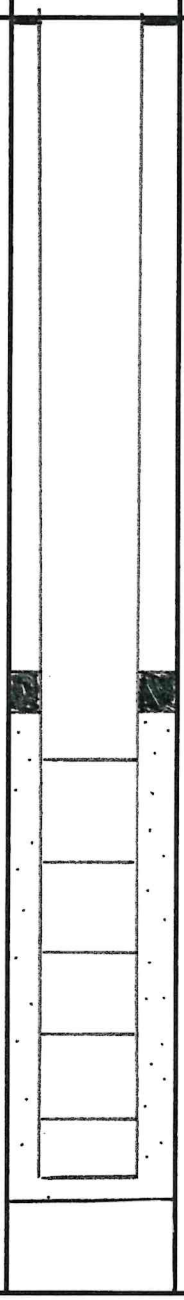
DEPTH (FT)	SAMPLE	OVA/PID (PPM)	WELL CONSTRUCTION	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (INTERVAL, RECOVERY, COLOR, MATRIX TYPE, MOISTURE CONTENT, COMMENTS)
4					6" manhole flush mount
8					0.5-1' bentonite grout
12					1-31' back filled with cuttings
16					31-33' bentonite grout
20					33-56' #2 Sand
24					0.5-35 2" Schedule 40 PVC
28					35-55 20 slot schedule 40 PVC
32					
36					
40					
44					
48					
52					
56					
60					

FPM GROUP

Bohemia, NY

MAP

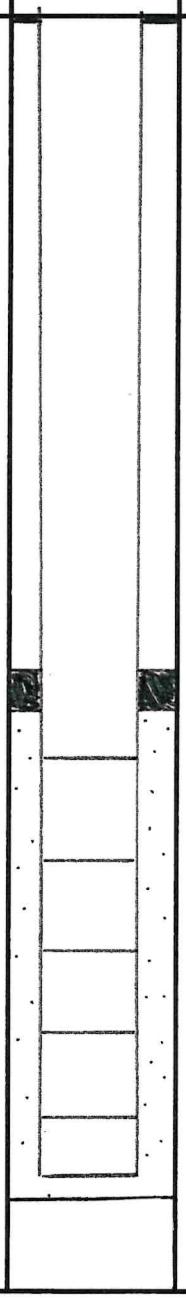
PROJECT NAME	550 Liberty Plaza, LLC	FPM JOB #			
SITE ADDRESS	550 Suffolk Ave				
BORING/WELL	MW-4A	TOTAL DEPTH	55	DIAMETER	2"
TOC ELEVATION		WATER LEVEL INITIAL		STATIC	
SCREEN DIA.	2"	LENGTH	20'	SLOT SIZE	20
CASING DIA.	2"	LENGTH	35'	TYPE	Schedule 40
DRILLING CO.	AARCO	DRILLING METHOD			Sonic
DRILLER	Dan	LOG BY	CD	DATE DRILLED	4/19/23

DEPTH (FT)	SAMPLE	OVA/PID (PPM)	WELL CONSTRUCTION	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (INTERVAL, RECOVERY, COLOR, MATRIX TYPE, MOISTURE CONTENT, COMMENTS)
4					6" manhole flush mount
8					0.5-1' bentonite grout
12					1-31' back filled with cuttings
16					31-33' bentonite grout
20					33-56' #2 Sand
24					0.5-35 2" Schedule 40 PVC
28					35-55 20 slot schedule 40 PVC
32					
36					
40					
44					
48					
52					
56					
60					

FPM GROUP
Bohemia, NY

MAP

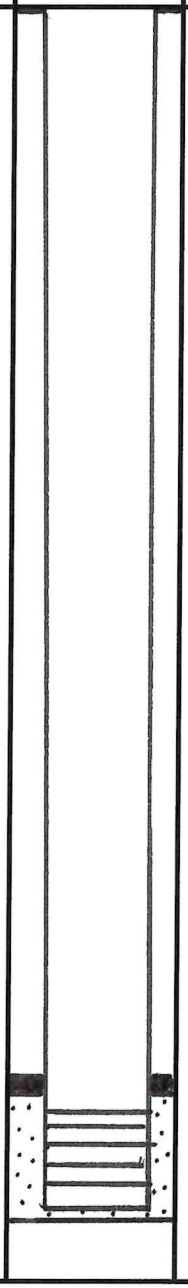
PROJECT NAME	550 Liberty Plaza, LLC		FPM JOB #		
SITE ADDRESS	550 Suffolk Ave				
BORING/WELL	MW-7A	TOTAL DEPTH	55	DIAMETER	2"
TOC ELEVATION		WATER LEVEL INITIAL		STATIC	
SCREEN DIA.	2"	LENGTH	20'	SLOT SIZE	20
CASING DIA.	2"	LENGTH	35'	TYPE	Schedule 40
DRILLING CO.	AARCO	DRILLING METHOD		Sonic	
DRILLER	Dan	LOG BY	CD	DATE DRILLED	4/17/23

DEPTH (FT)	SAMPLE	OVA/PID (PPM)	WELL CONSTRUCTION	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (INTERVAL, RECOVERY, COLOR, MATRIX TYPE, MOISTURE CONTENT, COMMENTS)
4					6" manhole flush mount
8					0.5-1' bentonite grout
12					1-31' back filled with cuttings
16					31-33' bentonite grout
20					33-56' #2 Sand
24					0.5-35 2" Schedule 40 PVC
28					35-55 20 slot schedule 40 PVC
32					
36					
40					
44					
48					
52					
56					
60					

FPM GROUP
Bohemia, NY

MAP

PROJECT NAME	550 Liberty Plaza, LLC	FPM JOB #			
SITE ADDRESS	550 Suffolk Ave				
BORING/WELL	MW-17A	TOTAL DEPTH	100	DIAMETER	2"
TOC ELEVATION		WATER LEVEL INITIAL		STATIC	
SCREEN DIA.	2"	LENGTH	10'	SLOT SIZE	20
CASING DIA.	2"	LENGTH	90'	TYPE	Schedule 40
DRILLING CO.	AARCO	DRILLING METHOD		Sonic	
DRILLER	Dan	LOG BY	CD	DATE DRILLED	4/17/23

DEPTH (FT)	SAMPLE	OVA/PID (PPM)	WELL CONSTRUCTION	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (INTERVAL, RECOVERY, COLOR, MATRIX TYPE, MOISTURE CONTENT, COMMENTS)
7					6" manhole flush mount 0.6-1' bentonite grout 1-86' back filled with cuttings 86-88' bentonite grout 88-101' #2 Sand 0.5-90' 2" Schedule 40 PVC 90-100' 2" 20 slot Schedule 40 PVC
14					
21					
28					
35					
42					
49					
56					
63					
70					
77					
84					
91					
98					
105					

WELL DEVELOPMENT DATA

Project: 550 Liberty Plaza

Location: _____

Well No.: MW-2A

Date and Time of Static Reading: 4/19/23 9:30

Amount of Water Injected during Drilling (gallons): ~20 gal

Pump Type and Pumping Rate: whale 1 gal/min

Additional Development Techniques: _____

TIME (HRS:MINS)	DEPTH TO WATER (FEET)	GALLONS PUMPED	pH	SPECIFIC CONDUCTIVITY (uS)	TEMPERATURE (°F)	TURBIDITY (NTU)
5	46.90	5	6.13	475	14.7	436
10	47.54	10	6.23	459	13.7	66
15	47.51	15	6.30	473	13.7	43.74
20	47.66	20	6.26	400	13.7	31.99

clients/Hydro Dept Forms/welldevform

46.88 Dw
55.12 D3

FPM

WELL DEVELOPMENT DATA

Project: 550 Liberty Plaza

Location: _____

Well No.: MW-3A

Date and Time of Static Reading: 4/19/23 10:00

Amount of Water Injected during Drilling (gallons): ~20 gal

Pump Type and Pumping Rate: Whale 1 gal/min

Additional Development Techniques: _____

TIME (HRS:MINS)	DEPTH TO WATER (FEET)	GALLONS PUMPED	pH	SPECIFIC CONDUCTIVITY (uS)	TEMPERATURE (°F)	TURBIDITY (NTU)
5	47.52	5	6.68	312	12.2	62
10	47.22	10	6.32	315	12.7	50
15	47.22	15	6.24	305	13.0	36.01
20	47.21	20	6.25	304	12.9	22.73

clients/Hydro Dept Forms/welldevform

46.93 DW
55.20 DB

FPM

WELL DEVELOPMENT DATA

Project: 550 Liberty Plaza

Location: _____

Well No.: MW-4A

Date and Time of Static Reading: 4/21/23 10:12

Amount of Water Injected during Drilling (gallons): ~ 20 gal

Pump Type and Pumping Rate: whale 1 gal/min

Additional Development Techniques: _____

TIME (HRS:MINS)	DEPTH TO WATER (FEET)	GALLONS PUMPED	pH	SPECIFIC CONDUCTIVITY (uS)	TEMPERATURE (°F)	TURBIDITY (NTU)
5	46.59	5	6.12	353	59.9	259
10	47.36	10	6.23	375	58.3	80
15	47.12	15	6.28	392	58.1	35.93
20	47.19	20	6.25	396	58.4	22.08
25						

clients/Hydro Dept Forms/welldevform

46.59 DW
54.51 DB

FPM

WELL DEVELOPMENT DATA

Project: 550 Liberty Plaza

Location: _____

Well No.: MW-7A

Date and Time of Static Reading: 4/19/23 7:53

Amount of Water Injected during Drilling (gallons): ~30gal

Pump Type and Pumping Rate: whale pump 1 gal/min

Additional Development Techniques: _____

TIME (HRS:MINS)	DEPTH TO WATER (FEET)	GALLONS PUMPED	pH	SPECIFIC CONDUCTIVITY (uS)	TEMPERATURE (°F)	TURBIDITY (NTU)
5	47.36	5	7.62	525	11.4	474
10	46.09	10	7.86	537	12.7	203
15	46.24	15	7.61	681	13.2	122
20	46.24	20	7.58	560	12.9	52
25	47.46	25	7.66	508	12.5	112
30	47.72	30	7.54	494	12.3	37.43
35	47.41	35	7.53	486	12.6	23.41

clients/Hydro Dept Forms/welldevform

47.36 DW

54.67 DB

FPM

WELL DEVELOPMENT DATA

Project: 550 Liberty Plaza

Location: _____

Well No.: MW-17A

Date and Time of Static Reading: 4/21/23 9:10

Amount of Water Injected during Drilling (gallons): ~60 gal

Pump Type and Pumping Rate: Whale 1 gal/min

Additional Development Techniques: _____

TIME (HRS:MINS)	DEPTH TO WATER (FEET)	GALLONS PUMPED	pH	SPECIFIC CONDUCTIVITY (uS)	TEMPERATURE (°F) C	TURBIDITY (NTU)
5	52.45	5	5.79	10.06 ms	13.6	358
10	53.96	10	5.66	11.39 ms	13.5	213
15	55.27	15	5.54	12.46 ms	13.3	61
20	55.79	20	5.47	9.33 ms	13.5	53
25	56.26	25	5.23	9.71 ms	13.2	35.96
30	56.39	30	5.19	7.89 ms	13.6	26.02
35	56.41	35	5.21	7.12 ms	13.4	23.11
40	56.44	40	5.19	7.08 ms	13.5	20.72

clients/Hydro Dept Forms/welldevform

52.45 DW
99.21 DB

FPM

Monitoring Personnel and Affilitation:
Regulatory Agency ID:
Date: 4/19/23

CAMP MONITORING LOG
550 LIBERTY PLAZA - WELL INSTALL

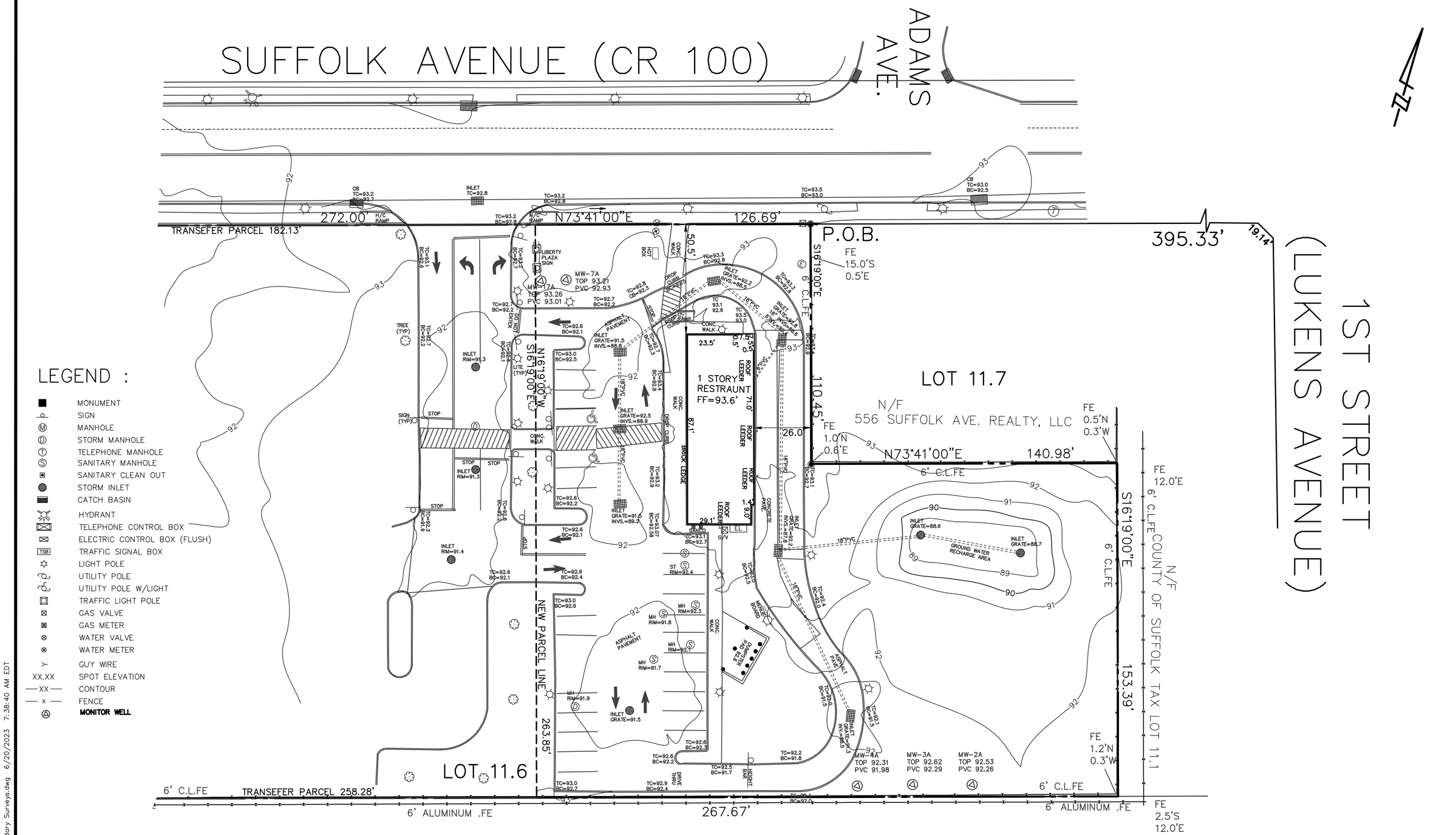
Monitoring Equipment and CAMP Trigger Levels	Organic Vapors	Dust	Noise
	1.0 ppm		

Time of Reading	Weather Conditions	Organic Vapor Readings (ppm)	Dust Readings (ug/m^3)	Noise Readings (dB)	Monitoring Location	Trigger Levels Exceedanced (Y/N)	Corrective Actions Taken (Y/N, describe if Y)
6:30		0.0	341	64	up wind	N	N
6:45			338	62			
7:00	57°F, NNE 6mph		349	76			
7:15			354	74			
7:30			350	74	down wind		
7:45			343	76			
8:00	50°F, S 5mph		355	72			
8:15			359	74			
8:30			363	66			
8:45			354	72			
9:00	49°F, SSW 5mph		360	76			
9:15			361	74			
9:30			359	72			
9:45			347	74			
10:00	45°F, Calm		350	66			
10:15			352	66			
10:30			348	66			
10:45			350	70			
11:00	45°F, Calm		349	72			
11:15			346	74			
11:30			348	72			

ppm: Parts Per Million

ug/m3 : Micro gram per cubic meter

dB: Decibel



LEGEND :

- MONUMENT
- SIGN
- MANHOLE
- STORM MANHOLE
- TELEPHONE MANHOLE
- SANITARY MANHOLE
- SANITARY CLEAN OUT
- STORM INLET
- CATCH BASIN
- HYDRANT
- TELEPHONE CONTROL BOX
- ELECTRIC CONTROL BOX (FLUSH)
- TRAFFIC SIGNAL BOX
- LIGHT POLE
- UTILITY POLE
- UTILITY POLE W/LIGHT
- TRAFFIC LIGHT POLE
- GAS VALVE
- GAS METER
- WATER VALVE
- WATER METER
- GUY WIRE
- XX.XX SPOT ELEVATION
- —XX— CONTOUR
- — x — FENCE
- **MONITOR WELL**

MTA LIRR

NOTES

1. ELEVATIONS BASED ON TOWN OF NAVD 1988– DATUM.CONVERTED FROM TOWN OF ISLIP BENCHMARK
2. SURVEYOR IS NOT RESPONSIBLE FOR ANY UNDERGROUND UTILITY LOCATIONS NOT SHOWN ON THIS SURVEY.

3. SURVEYOR IS NOT RESPONSIBLE FOR ANY UNWRITTEN OR UNRECORDED EASEMENTS OR CLAIMS OF WRITES.

DATE	DESCRIPTION
REVISIONS	

SUFFOLK COUNTY TAX MAP: DISTRICT 0500 ,SECTION 136 , BLOCK 3 ,p/o LOT 11.6

RUSSELL H. LEWIS Co.
LAND SURVEYOR
57 CONKLIN AVENUE, WHEATLEY HEIGHTS, NY 11798
TEL. No. (516) 474–3665

RUSSELL H. LEWIS, N.Y. L.S. #050265

FINAL SURVEY
FOR
TACO BELL SITE

SITUATED IN
BRENTWOOD, SUFFOLK COUNTY, NEW YORK

PROJECT NO.	MN820
DATE	JUNE 20,2023
SCALE	1"=30'
DRAWING NO.	FOLDER–21
SHEET	1 OF 1

P:\LandProjects\New York\NM820\dwg\sbnsv00\00021-Boundary Surveys.dwg 6/20/2023 7:38:40 AM EDT

Photolog of Monitoring Well Installation
April 17 to 19, 2023
Liberty Industrial Finishing Site, NYSDEC #152108
500-550 Suffolk Avenue, Brentwood, NY

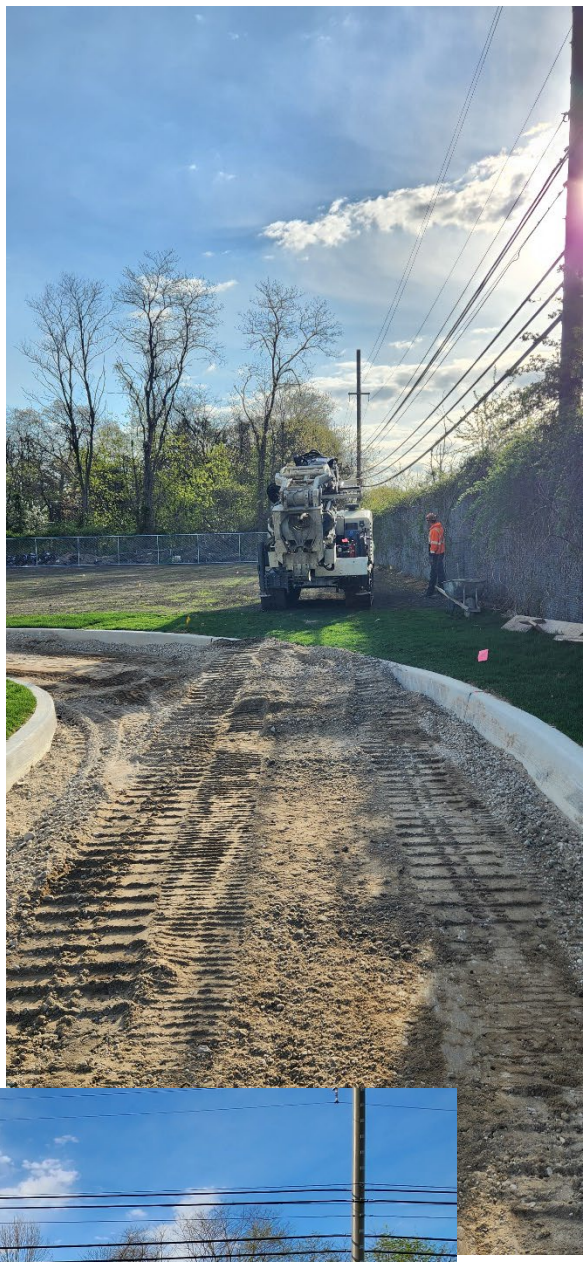
MW-7A/MW-17A Area

Above and Right: Setting up the sonic rig to install MW-7A and MW-17A on the north side of the site.

At right: Completed MW-17A prior to removal of cuttings and placement of protective manhole.

MW-2A to MW-4A Area, South Side of Site

At right: Mobilizing to the MW-2A, MW-3A, and MW-4A locations on the south side of the site.



Below: Drill rig and support truck set up on the south side of the site.

At left: MW-3A installed, prior to removal of excess cuttings and placement of protective manhole.