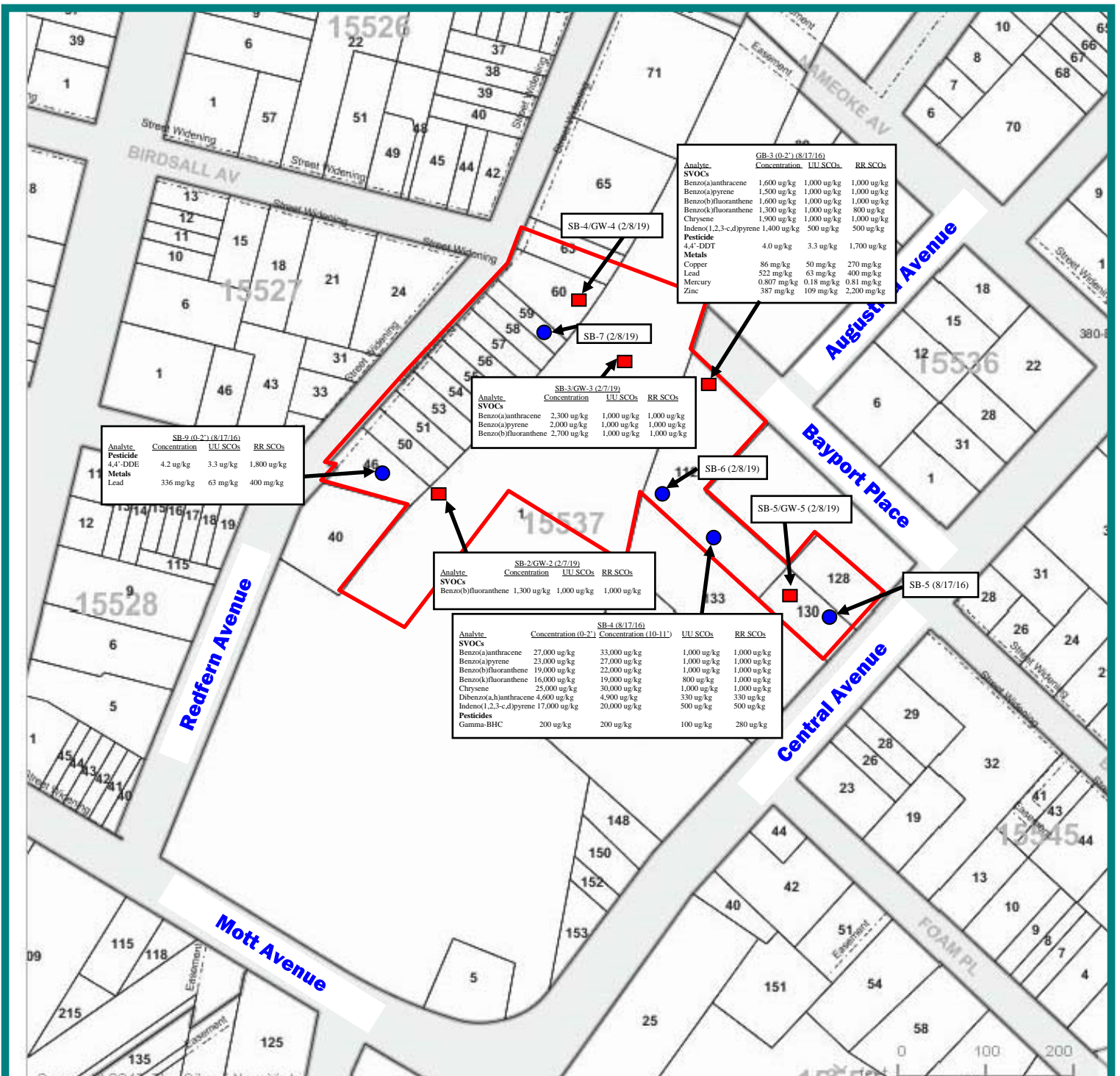


---

# **APPENDIX D**

## **Maps of Chemistry Exceedances**

---



SB-9 (0-2') (8/17/16)			
Analyte	Concentration	UU SCOs	RR SCOs
Pesticide			
4,4'-DDE	4.2 ug/kg	3.3 ug/kg	1,800 ug/kg
Metals			
Lead	336 mg/kg	63 mg/kg	400 mg/kg

GB-3 (0-2') (8/17/16)			
Analyte	Concentration	UU SCOs	RR SCOs
<b>SVOCs</b>			
Benzo(a)anthracene	1,600 ug/kg	1,000 ug/kg	1,000 ug/kg
Benzo(a)pyrene	1,500 ug/kg	1,000 ug/kg	1,000 ug/kg
Benzo(b)fluoranthene	1,600 ug/kg	1,000 ug/kg	1,000 ug/kg
Benzo(k)fluoranthene	1,300 ug/kg	1,000 ug/kg	800 ug/kg
Chrysene	1,900 ug/kg	1,000 ug/kg	1,000 ug/kg
Indeno(1,2,3-c,d)pyrene	1,400 ug/kg	500 ug/kg	500 ug/kg
<b>Pesticide</b>			
4,4'-DDT	4.0 ug/kg	3.3 ug/kg	1,700 ug/kg
<b>Metals</b>			
Copper	86 mg/kg	50 mg/kg	270 mg/kg
Lead	522 mg/kg	63 mg/kg	400 mg/kg
Mercury	0.807 mg/kg	0.18 mg/kg	0.81 mg/kg
Zinc	387 mg/kg	109 mg/kg	2,200 mg/kg

SB-3/GW-3 (2/7/19)			
Analyte	Concentration	UU SCOs	RR SCOs
<b>SVOCs</b>			
Benzo(a)anthracene	2,300 ug/kg	1,000 ug/kg	1,000 ug/kg
Benzo(a)pyrene	2,000 ug/kg	1,000 ug/kg	1,000 ug/kg
Benzo(b)fluoranthene	2,700 ug/kg	1,000 ug/kg	1,000 ug/kg

SB-2/GW-2 (2/7/19)			
Analyte	Concentration	UU SCOs	RR SCOs
<b>SVOCs</b>			
Benzo(b)fluoranthene	1,300 ug/kg	1,000 ug/kg	1,000 ug/kg

SB-4 (8/17/16)				
Analyte	Concentration (0-2')	Concentration (10-11')	UU SCOs	RR SCOs
<b>SVOCs</b>				
Benzo(a)anthracene	27,000 ug/kg	33,000 ug/kg	1,000 ug/kg	1,000 ug/kg
Benzo(a)pyrene	23,000 ug/kg	27,000 ug/kg	1,000 ug/kg	1,000 ug/kg
Benzo(b)fluoranthene	19,000 ug/kg	22,000 ug/kg	1,000 ug/kg	1,000 ug/kg
Benzo(k)fluoranthene	16,000 ug/kg	19,000 ug/kg	800 ug/kg	1,000 ug/kg
Chrysene	25,000 ug/kg	30,000 ug/kg	1,000 ug/kg	1,000 ug/kg
Dibenzo(a,h)anthracene	4,600 ug/kg	4,900 ug/kg	330 ug/kg	330 ug/kg
Indeno(1,2,3-c,d)pyrene	17,000 ug/kg	20,000 ug/kg	500 ug/kg	500 ug/kg
<b>Pesticides</b>				
Gamma-BHC	200 ug/kg	200 ug/kg	100 ug/kg	280 ug/kg

**LEGEND**

- Soil boring sample location
- Combined soil and groundwater sample location



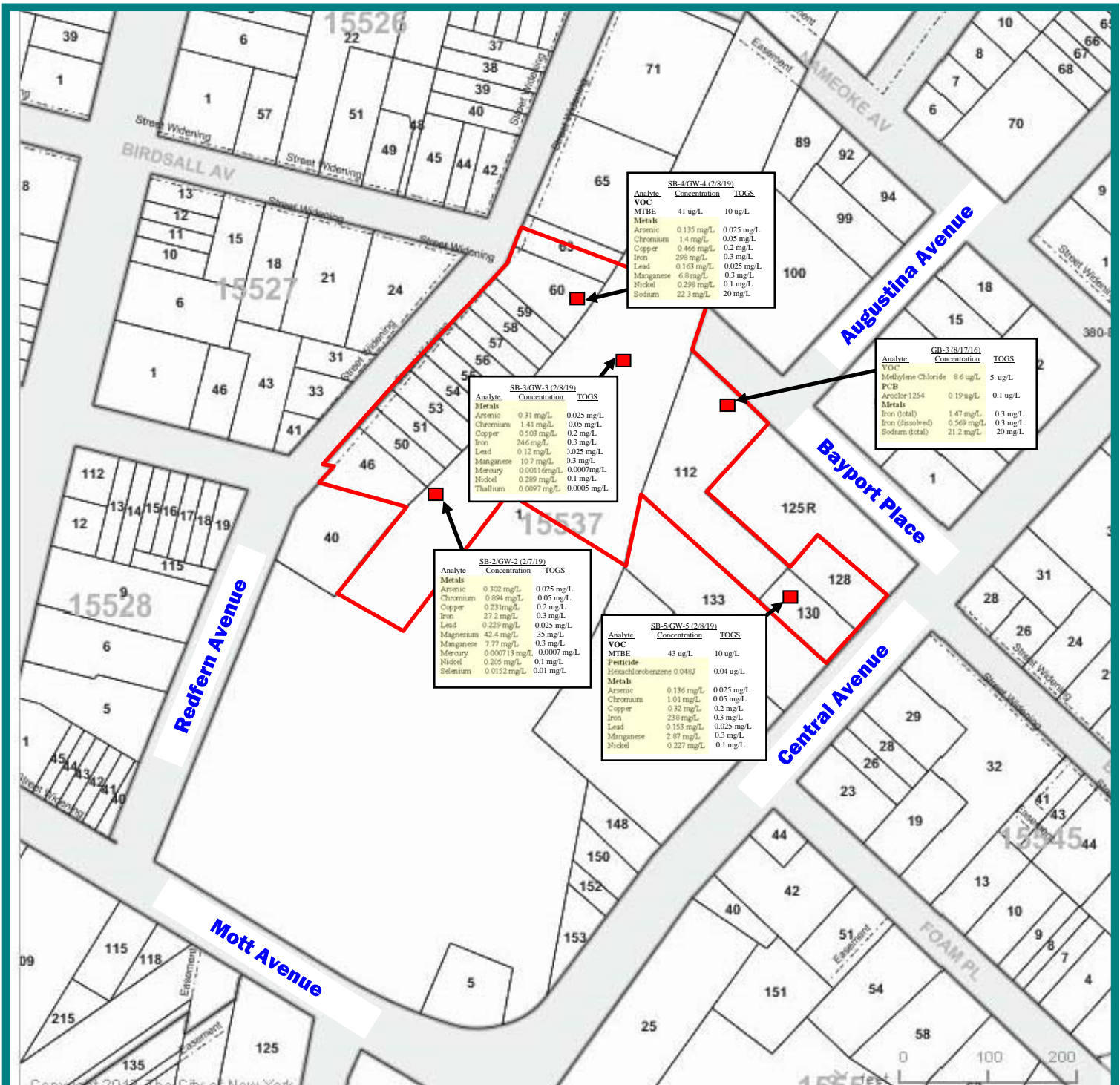
N

Adapted from NYCDOF Tax Map



**CA RICH CONSULTANTS, INC.**  
17 Dupont Street,  
Plainview, NY 11803

<b>TITLE:</b> Soil Exceedances Above Unrestricted Use SCOs 2016 and 2019		<b>DATE:</b> 7/2/2020
		<b>SCALE:</b> As Shown
<b>FIGURE:</b> 9	<b>Far Rockaway Project Phase 3 Development Far Rockaway, NY</b>	<b>DRAWN BY:</b> T.R.B.
<b>DRAWING:</b>		<b>APPR. BY:</b> J.T.C.



**LEGEND**

- Groundwater sample location (2016 and 2019)
- Shaded values also exceed 6 NY CRR Part 703.5.



**N**

Adapted from NYCDOF Tax Map



**CA RICH CONSULTANTS, INC.**  
17 Dupont Street,  
Plainview, NY 11803

**TITLE:**

**Map of Groundwater Exceedances Above TOGS 2016 and 2019**

**DATE:**

**7/2/2020**

**SCALE:**

**As Shown**

**FIGURE: 10**

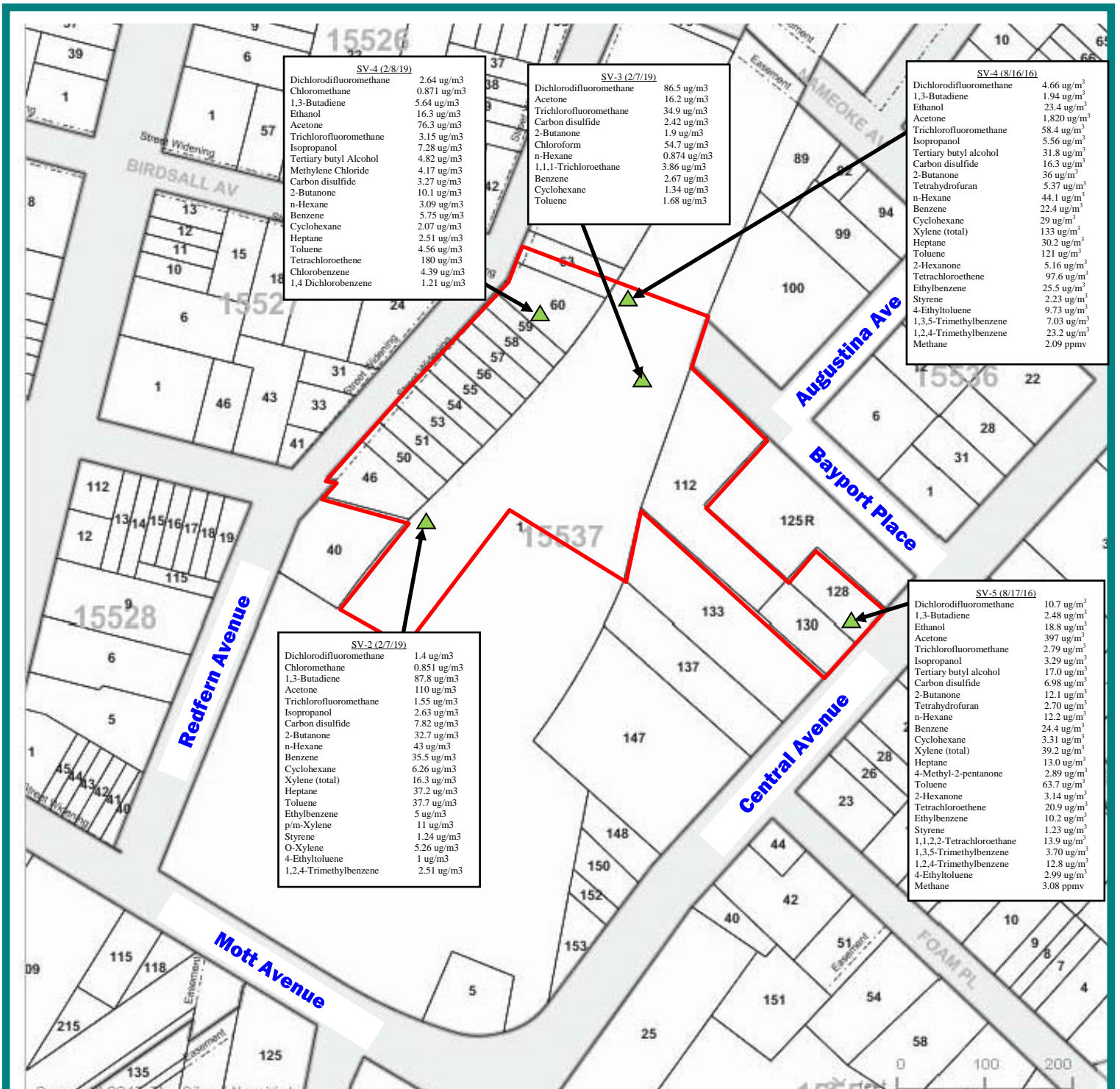
**Far Rockaway Project  
Phase 3 Development  
Far Rockaway, NY**

**DRAWN BY:**

**J.T.C.**

**APPR. BY:**

**R.J.I.**



**SV-4 (2/8/19)**

Dichlorodifluoromethane	2.64 ug/m <sup>3</sup>
Chloromethane	0.871 ug/m <sup>3</sup>
1,3-Butadiene	5.64 ug/m <sup>3</sup>
Ethanol	16.3 ug/m <sup>3</sup>
Acetone	76.3 ug/m <sup>3</sup>
Trichlorofluoromethane	3.15 ug/m <sup>3</sup>
Isopropanol	7.28 ug/m <sup>3</sup>
Tertiary butyl Alcohol	4.82 ug/m <sup>3</sup>
Methylene Chloride	4.17 ug/m <sup>3</sup>
Carbon disulfide	3.27 ug/m <sup>3</sup>
2-Butanone	10.1 ug/m <sup>3</sup>
n-Hexane	3.09 ug/m <sup>3</sup>
Benzene	5.75 ug/m <sup>3</sup>
Cyclohexane	2.07 ug/m <sup>3</sup>
Heptane	2.51 ug/m <sup>3</sup>
Toluene	4.56 ug/m <sup>3</sup>
Tetrachloroethene	180 ug/m <sup>3</sup>
Chlorobenzene	4.39 ug/m <sup>3</sup>
1,4-Dichlorobenzene	1.21 ug/m <sup>3</sup>

**SV-3 (2/7/19)**

Dichlorodifluoromethane	86.5 ug/m <sup>3</sup>
Acetone	16.2 ug/m <sup>3</sup>
Trichlorofluoromethane	34.9 ug/m <sup>3</sup>
Carbon disulfide	2.42 ug/m <sup>3</sup>
2-Butanone	1.9 ug/m <sup>3</sup>
Chloroform	54.7 ug/m <sup>3</sup>
n-Hexane	0.874 ug/m <sup>3</sup>
1,1,1-Trichloroethane	3.86 ug/m <sup>3</sup>
Benzene	2.67 ug/m <sup>3</sup>
Cyclohexane	1.34 ug/m <sup>3</sup>
Toluene	1.68 ug/m <sup>3</sup>

**SV-4 (8/16/16)**

Dichlorodifluoromethane	4.66 ug/m <sup>3</sup>
1,3-Butadiene	1.94 ug/m <sup>3</sup>
Ethanol	23.4 ug/m <sup>3</sup>
Acetone	1,820 ug/m <sup>3</sup>
Trichlorofluoromethane	58.4 ug/m <sup>3</sup>
Isopropanol	5.56 ug/m <sup>3</sup>
Tertiary butyl alcohol	31.8 ug/m <sup>3</sup>
Carbon disulfide	16.3 ug/m <sup>3</sup>
2-Butanone	36 ug/m <sup>3</sup>
Tetrahydrofuran	5.37 ug/m <sup>3</sup>
n-Hexane	44.1 ug/m <sup>3</sup>
Benzene	22.4 ug/m <sup>3</sup>
Cyclohexane	29 ug/m <sup>3</sup>
Xylene (total)	133 ug/m <sup>3</sup>
Heptane	30.2 ug/m <sup>3</sup>
Toluene	121 ug/m <sup>3</sup>
2-Hexanone	5.16 ug/m <sup>3</sup>
Tetrachloroethene	97.6 ug/m <sup>3</sup>
Ethylbenzene	25.5 ug/m <sup>3</sup>
Styrene	2.23 ug/m <sup>3</sup>
4-Ethyltoluene	9.73 ug/m <sup>3</sup>
1,3,5-Trimethylbenzene	7.03 ug/m <sup>3</sup>
1,2,4-Trimethylbenzene	23.2 ug/m <sup>3</sup>
Methane	2.09 ppmv

**SV-2 (2/7/19)**

Dichlorodifluoromethane	1.4 ug/m <sup>3</sup>
Chloromethane	0.851 ug/m <sup>3</sup>
1,3-Butadiene	87.8 ug/m <sup>3</sup>
Acetone	110 ug/m <sup>3</sup>
Trichlorofluoromethane	1.55 ug/m <sup>3</sup>
Isopropanol	2.63 ug/m <sup>3</sup>
Carbon disulfide	7.82 ug/m <sup>3</sup>
2-Butanone	32.7 ug/m <sup>3</sup>
n-Hexane	43 ug/m <sup>3</sup>
Benzene	35.5 ug/m <sup>3</sup>
Cyclohexane	6.26 ug/m <sup>3</sup>
Xylene (total)	16.3 ug/m <sup>3</sup>
Heptane	37.2 ug/m <sup>3</sup>
Toluene	37.7 ug/m <sup>3</sup>
Ethylbenzene	5 ug/m <sup>3</sup>
p/m-Xylene	11 ug/m <sup>3</sup>
Styrene	1.24 ug/m <sup>3</sup>
O-Xylene	5.26 ug/m <sup>3</sup>
4-Ethyltoluene	1 ug/m <sup>3</sup>
1,2,4-Trimethylbenzene	2.51 ug/m <sup>3</sup>

**SV-5 (8/17/16)**

Dichlorodifluoromethane	10.7 ug/m <sup>3</sup>
1,3-Butadiene	2.48 ug/m <sup>3</sup>
Ethanol	18.8 ug/m <sup>3</sup>
Acetone	397 ug/m <sup>3</sup>
Trichlorofluoromethane	2.79 ug/m <sup>3</sup>
Isopropanol	3.29 ug/m <sup>3</sup>
Tertiary butyl alcohol	17.0 ug/m <sup>3</sup>
Carbon disulfide	6.98 ug/m <sup>3</sup>
2-Butanone	12.1 ug/m <sup>3</sup>
Tetrahydrofuran	2.70 ug/m <sup>3</sup>
n-Hexane	12.2 ug/m <sup>3</sup>
Benzene	24.4 ug/m <sup>3</sup>
Cyclohexane	3.31 ug/m <sup>3</sup>
Xylene (total)	39.2 ug/m <sup>3</sup>
Heptane	13.0 ug/m <sup>3</sup>
4-Methyl-2-pentanone	2.89 ug/m <sup>3</sup>
Toluene	63.7 ug/m <sup>3</sup>
2-Hexanone	3.14 ug/m <sup>3</sup>
Tetrachloroethene	20.9 ug/m <sup>3</sup>
Ethylbenzene	10.2 ug/m <sup>3</sup>
Styrene	1.23 ug/m <sup>3</sup>
1,1,2,2-Tetrachloroethane	13.9 ug/m <sup>3</sup>
1,3,5-Trimethylbenzene	3.70 ug/m <sup>3</sup>
1,2,4-Trimethylbenzene	12.8 ug/m <sup>3</sup>
4-Ethyltoluene	2.99 ug/m <sup>3</sup>
Methane	3.08 ppmv

**LEGEND**

Soil vapor sample location



Adapted from NYCDOT Tax Map



**CA RICH CONSULTANTS, INC.**  
17 Dupont Street,  
Plainview, NY 11803

TITLE:

**Soil Vapor Detections 2016 & 2019**

DATE:

**7/7/2020**

SCALE:

**As Shown**

FIGURE:

**11**

**Far Rockaway Project  
Phase 3 Development  
Far Rockaway, NY**

DRAWN BY:

**T.R.B.**

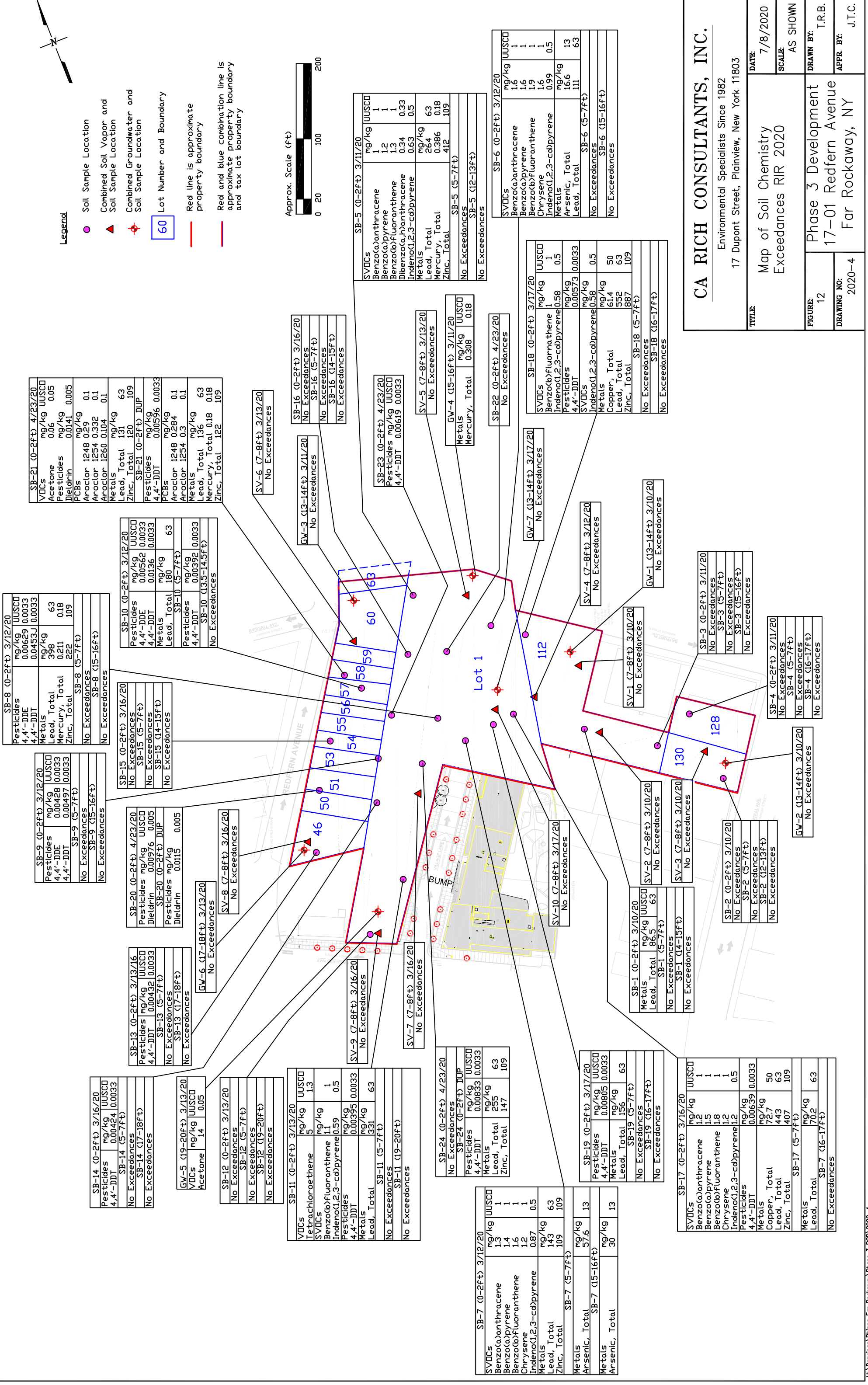
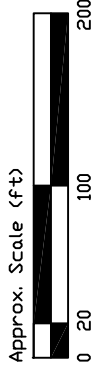
APPR. BY:

**J.T.C.**



**Legend**

- Soil Sample Location
- ▲ Combined Soil Vapor and Soil Sample Location
- ◆ Combined Groundwater and Soil Sample Location
- 60 Lot Number and Boundary
- Red line is approximate property boundary
- Red and blue combination line is approximate property boundary and tax lot boundary



SB-21 (0-2ft) 4/23/20	
VOCs	mg/kg UUSCO
Acetone	0.06 0.05
Pesticides	mg/kg
Dieldrin	0.0141 0.005
PCBs	mg/kg
Aroclor 1248	0.29 0.1
Aroclor 1254	0.332 0.1
Aroclor 1260	0.104 0.1
Metals	mg/kg
Lead, Total	131 63
Zinc, Total	120 109
SB-21 (0-2ft) DUP	
Pesticides	mg/kg
4,4'-DDT	0.00596 0.0033
PCBs	mg/kg
Aroclor 1248	0.284 0.1
Aroclor 1254	0.3 0.1
Metals	mg/kg
Lead, Total	136 63
Mercury, Total	0.18 0.18
Zinc, Total	122 109

SB-10 (0-2ft) 3/12/20	
Pesticides	mg/kg UUSCO
4,4'-DDE	0.00562 0.0033
4,4'-DDT	0.0136 0.0033
Metals	mg/kg
Lead, Total	180 63
SB-10 (5-7ft)	
Pesticides	mg/kg
4,4'-DDT	0.00392 0.0033
Metals	mg/kg
Lead, Total	135.5-14.5ft
No Exceedances	

SB-8 (0-2ft) 3/12/20	
Pesticides	mg/kg UUSCO
4,4'-DDE	0.00629 0.0033
4,4'-DDT	0.0453J 0.0033
Metals	mg/kg
Lead, Total	398 63
Mercury, Total	0.211 0.18
Zinc, Total	222 109
SB-8 (5-7ft)	
No Exceedances	
SB-8 (15-16ft)	
No Exceedances	

SB-9 (0-2ft) 3/12/20	
Pesticides	mg/kg UUSCO
4,4'-DDE	0.00428 0.0033
4,4'-DDT	0.00497 0.0033
SB-9 (5-7ft)	
No Exceedances	
SB-9 (15-16ft)	
No Exceedances	

SB-15 (0-2ft) 3/16/20	
No Exceedances	
SB-15 (5-7ft)	
No Exceedances	
SB-15 (14-15ft)	
No Exceedances	

SB-20 (0-2ft) 4/23/20	
Pesticides	mg/kg UUSCO
Dieldrin	0.00976 0.005
SB-20 (0-2ft) DUP	
Pesticides	mg/kg
Dieldrin	0.0115 0.005
SB-20 (7-8ft) 3/16/20	
No Exceedances	

SB-13 (0-2ft) 3/13/16	
Pesticides	mg/kg UUSCO
4,4'-DDT	0.00432 0.0033
SB-13 (5-7ft)	
No Exceedances	
SB-13 (17-18ft)	
No Exceedances	

SB-14 (0-2ft) 3/16/20	
Pesticides	mg/kg UUSCO
4,4'-DDT	0.00424 0.0033
SB-14 (5-7ft)	
No Exceedances	
SB-14 (17-18ft)	
No Exceedances	

GW-5 (19-20ft) 3/13/20	
VOCs	mg/kg UUSCO
Acetone	14 0.05
SB-12 (0-2ft) 3/13/20	
No Exceedances	
SB-12 (5-7ft)	
No Exceedances	
SB-12 (19-20ft)	
No Exceedances	

SB-11 (0-2ft) 3/13/20	
VOCs	mg/kg UUSCO
Tetrachloroethene	5 1.3
SVDcs	mg/kg
Benzo(a)anthracene	1.1 1
Benzo(b)fluoranthene	0.59 0.5
Pesticides	mg/kg
4,4'-DDT	0.00395 0.0033
Metals	mg/kg
Lead, Total	331 63
SB-11 (5-7ft)	
No Exceedances	
SB-11 (19-20ft)	
No Exceedances	

SB-24 (0-2ft) 4/23/20	
No Exceedances	
SB-24 (0-2ft) DUP	
Pesticides	mg/kg UUSCO
4,4'-DDT	0.00833 0.0033
Metals	mg/kg
Lead, Total	255 63
Zinc, Total	147 109

SB-7 (0-2ft) 3/12/20	
SVDcs	mg/kg UUSCO
Benzo(a)anthracene	1.3 1
Benzo(a)pyrene	1.4 1
Benzo(b)fluoranthene	1.6 1
Chrysene	1.2 1
Indeno(1,2,3-cd)pyrene	0.87 0.5
Metals	mg/kg
Lead, Total	143 63
Zinc, Total	109 109
SB-7 (5-7ft)	
Metals	mg/kg
Arsenic, Total	57.6 13
SB-7 (15-16ft)	
Metals	mg/kg
Arsenic, Total	30 13

SB-19 (0-2ft) 3/17/20	
Pesticides	mg/kg UUSCO
4,4'-DDT	0.00805 0.0033
Metals	mg/kg
Lead, Total	156 63
SB-19 (5-7ft)	
No Exceedances	
SB-19 (16-17ft)	
No Exceedances	

SB-17 (0-2ft) 3/16/20	
SVDcs	mg/kg UUSCO
Benzo(a)anthracene	1.2 1
Benzo(a)pyrene	1.5 1
Benzo(b)fluoranthene	1.8 1
Chrysene	1.2 1
Indeno(1,2,3-cd)pyrene	1.2 0.5
Pesticides	mg/kg
4,4'-DDT	0.00639 0.0033
Metals	mg/kg
Copper, Total	72.7 50
Lead, Total	443 63
Zinc, Total	407 109
SB-17 (5-7ft)	
Metals	mg/kg
Lead, Total	70.2 63
SB-7 (16-17ft)	
No Exceedances	

SB-16 (0-2ft) 3/16/20	
No Exceedances	
SB-16 (5-7ft)	
No Exceedances	
SB-16 (14-15ft)	
No Exceedances	

SB-23 (0-2ft) 4/23/20	
Pesticides	mg/kg UUSCO
4,4'-DDT	0.00619 0.0033
SB-5 (7-8ft) 3/13/20	
No Exceedances	

GW-4 (15-16ft) 3/11/20	
Metals	mg/kg UUSCO
Mercury, Total	0.308 0.18
SB-5 (12-13ft)	
No Exceedances	

SB-22 (0-2ft) 4/23/20	
No Exceedances	

SB-18 (0-2ft) 3/17/20	
SVDcs	mg/kg UUSCO
Benzo(b)fluoranthene	1 1
Indeno(1,2,3-cd)pyrene	0.58 0.5
Pesticides	mg/kg
4,4'-DDT	0.00573 0.0033
SVDcs	mg/kg
Indeno(1,2,3-cd)pyrene	0.58 0.5
Metals	mg/kg
Copper, Total	61.4 50
Lead, Total	552 63
Zinc, Total	887 109
SB-18 (5-7ft)	
No Exceedances	
SB-18 (16-17ft)	
No Exceedances	

SB-5 (0-2ft) 3/11/20	
SVDcs	mg/kg UUSCO
Benzo(a)anthracene	1 1
Benzo(a)pyrene	1.2 1
Benzo(b)fluoranthene	1.3 1
Dibenz(a,h)anthracene	0.34 0.33
Indeno(1,2,3-cd)pyrene	0.63 0.5
Metals	mg/kg
Lead, Total	264 63
Mercury, Total	0.386 0.18
Zinc, Total	412 109
SB-5 (5-7ft)	
No Exceedances	
SB-5 (12-13ft)	
No Exceedances	

**CA RICH CONSULTANTS, INC.**  
 Environmental Specialists Since 1982  
 17 Dupont Street, Plainview, New York 11803

**Map of Soil Chemistry Exceedances RIR 2020**

**DATE:** 7/8/2020  
**SCALE:** AS SHOWN  
**DRAWN BY:** T.R.B.  
**APPR. BY:** J.T.C.

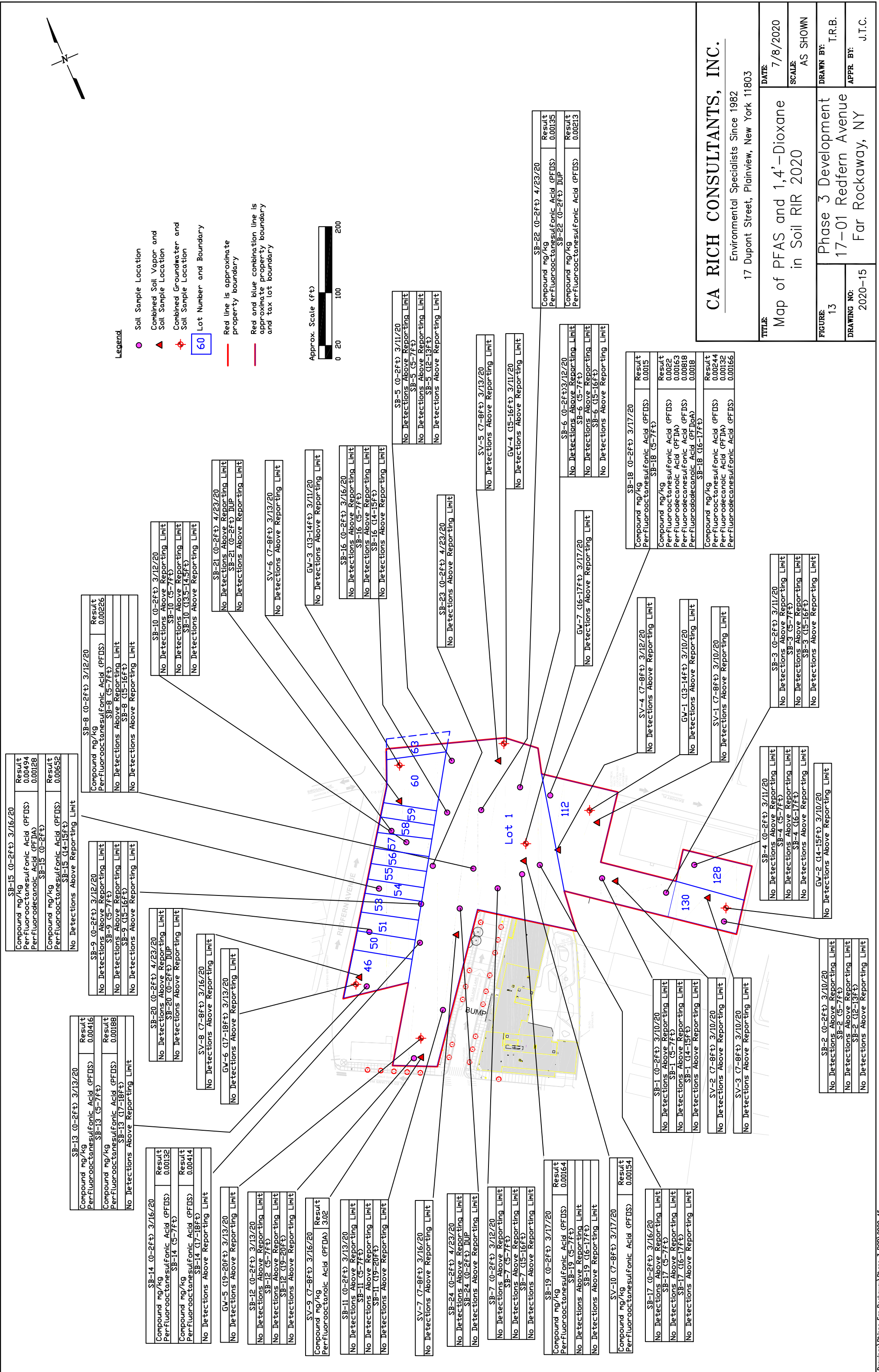
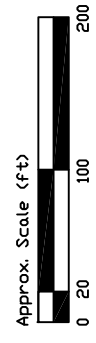
**FIGURE:** 12  
**DRAWING NO.:** 2020-4

**Phase 3 Development**  
 17-01 Redfern Avenue  
 Far Rockaway, NY



**Legend**

- Soil Sample Location
- ▲ Combined Soil Vapor and Soil Sample Location
- ◆ Combined Groundwater and Soil Sample Location
- 60 Lot Number and Boundary
- Red line is approximate property boundary
- Red and blue combination line is approximate property boundary and tax lot boundary



SB-15 (0-2ft) 3/16/20	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00494	
Perfluorodecanic Acid (PFDA)	0.00128	
SB-15 (0-2ft)	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00652	
SB-15 (4-15ft)	No Detections Above Reporting Limit	

SB-9 (0-2ft) 3/12/20	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00226	
SB-9 (5-7ft)	No Detections Above Reporting Limit	
SB-10 (15-16ft)	No Detections Above Reporting Limit	

SB-20 (0-2ft) 4/23/20	No Detections Above Reporting Limit	
SB-20 (0-2ft) DUP	No Detections Above Reporting Limit	
SV-8 (7-8ft) 3/16/20	No Detections Above Reporting Limit	
GW-6 (17-18ft) 3/13/20	No Detections Above Reporting Limit	

SB-13 (0-2ft) 3/13/20	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00416	
SB-13 (5-7ft)	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00188	
SB-13 (17-18ft)	No Detections Above Reporting Limit	

SB-14 (0-2ft) 3/16/20	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00132	
SB-14 (5-7ft)	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00414	
SB-14 (17-18ft)	No Detections Above Reporting Limit	
GW-5 (19-20ft) 3/13/20	No Detections Above Reporting Limit	

SB-12 (0-2ft) 3/13/20	No Detections Above Reporting Limit	
SB-12 (5-7ft)	No Detections Above Reporting Limit	
SB-12 (19-20ft)	No Detections Above Reporting Limit	
SV-9 (7-8ft) 3/16/20	Compound mg/kg	Result
Perfluorooctanoic Acid (PFDA)	3.02	

SB-11 (0-2ft) 3/13/20	No Detections Above Reporting Limit	
SB-11 (5-7ft)	No Detections Above Reporting Limit	
SB-11 (19-20ft)	No Detections Above Reporting Limit	
SV-7 (7-8ft) 3/16/20	No Detections Above Reporting Limit	

SB-24 (0-2ft) 4/23/20	No Detections Above Reporting Limit	
SB-24 (0-2ft) DUP	No Detections Above Reporting Limit	
SB-7 (0-2ft) 3/12/20	No Detections Above Reporting Limit	
SB-7 (5-7ft)	No Detections Above Reporting Limit	
SB-7 (15-16ft)	No Detections Above Reporting Limit	

SB-19 (0-2ft) 3/17/20	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00164	
SB-19 (5-7ft)	No Detections Above Reporting Limit	
SB-19 (16-17ft)	No Detections Above Reporting Limit	
SV-10 (7-8ft) 3/17/20	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00154	

SB-17 (0-2ft) 3/16/20	No Detections Above Reporting Limit	
SB-17 (5-7ft)	No Detections Above Reporting Limit	
SB-17 (16-17ft)	No Detections Above Reporting Limit	

SB-8 (0-2ft) 3/12/20	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00226	
SB-8 (5-7ft)	No Detections Above Reporting Limit	
SB-8 (15-16ft)	No Detections Above Reporting Limit	

SB-10 (0-2ft) 3/12/20	No Detections Above Reporting Limit	
SB-10 (5-7ft)	No Detections Above Reporting Limit	
SB-10 (13.5-14.5ft)	No Detections Above Reporting Limit	
SB-21 (0-2ft) 4/23/20	No Detections Above Reporting Limit	
SB-21 (0-2ft) DUP	No Detections Above Reporting Limit	

SV-6 (7-8ft) 3/13/20	No Detections Above Reporting Limit	
GW-3 (13-14ft) 3/11/20	No Detections Above Reporting Limit	
SB-16 (0-2ft) 3/16/20	No Detections Above Reporting Limit	
SB-16 (5-7ft)	No Detections Above Reporting Limit	
SB-16 (14-15ft)	No Detections Above Reporting Limit	

SB-23 (0-2ft) 4/23/20	No Detections Above Reporting Limit	
SV-5 (7-8ft) 3/13/20	No Detections Above Reporting Limit	
GW-4 (15-16ft) 3/11/20	No Detections Above Reporting Limit	
SB-6 (0-2ft) 3/12/20	No Detections Above Reporting Limit	
SB-6 (5-7ft)	No Detections Above Reporting Limit	
SB-6 (15-16ft)	No Detections Above Reporting Limit	

SB-5 (0-2ft) 3/11/20	No Detections Above Reporting Limit	
SB-5 (5-7ft)	No Detections Above Reporting Limit	
SB-5 (12-13ft)	No Detections Above Reporting Limit	

SV-5 (7-8ft) 3/13/20	No Detections Above Reporting Limit	
GW-4 (15-16ft) 3/11/20	No Detections Above Reporting Limit	
SB-22 (0-2ft) 4/23/20	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00135	
SB-22 (0-2ft) DUP	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00213	

SB-6 (0-2ft) 3/12/20	No Detections Above Reporting Limit	
SB-6 (5-7ft)	No Detections Above Reporting Limit	
SB-6 (15-16ft)	No Detections Above Reporting Limit	
SB-18 (0-2ft) 3/17/20	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.0015	
SB-18 (5-7ft)	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.0022	
Perfluorodecanic Acid (PFDA)	0.00163	
Perfluorodecane sulfonic Acid (PFDS)	0.00818	
Perfluorododecanic Acid (PFDoA)	0.0018	
SB-18 (16-17ft)	Compound mg/kg	Result
Perfluorooctanesulfonic Acid (PFOS)	0.00244	
Perfluorodecanic Acid (PFDA)	0.00132	
Perfluorodecane sulfonic Acid (PFDS)	0.00166	

SB-4 (0-2ft) 3/11/20	No Detections Above Reporting Limit	
SB-4 (5-7ft)	No Detections Above Reporting Limit	
SB-4 (16-17ft)	No Detections Above Reporting Limit	
GW-7 (16-17ft) 3/17/20	No Detections Above Reporting Limit	
SV-4 (7-8ft) 3/12/20	No Detections Above Reporting Limit	
GW-1 (13-14ft) 3/10/20	No Detections Above Reporting Limit	
SV-1 (7-8ft) 3/10/20	No Detections Above Reporting Limit	

SB-3 (0-2ft) 3/11/20	No Detections Above Reporting Limit	
SB-3 (5-7ft)	No Detections Above Reporting Limit	
SB-3 (15-16ft)	No Detections Above Reporting Limit	
GW-2 (14-15ft) 3/10/20	No Detections Above Reporting Limit	

SB-4 (0-2ft) 3/11/20	No Detections Above Reporting Limit	
SB-4 (5-7ft)	No Detections Above Reporting Limit	
SB-4 (16-17ft)	No Detections Above Reporting Limit	
GW-2 (14-15ft) 3/10/20	No Detections Above Reporting Limit	

SB-2 (0-2ft) 3/10/20	No Detections Above Reporting Limit	
SB-2 (5-7ft)	No Detections Above Reporting Limit	
SB-2 (12-13ft)	No Detections Above Reporting Limit	

**CA RICH CONSULTANTS, INC.**  
 Environmental Specialists Since 1982  
 17 Dupont Street, Plainview, New York 11803

**TITLE:** Map of PFAS and 1,4'-Dioxane in Soil RIR 2020

**DATE:** 7/8/2020

**SCALE:** AS SHOWN

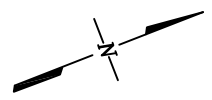
**DRAWN BY:** T.R.B.

**APPR. BY:** J.T.C.

**FIGURE:** 13

**DRAWING NO.:** 2020-15

**Phase 3 Development**  
 17-01 Redfern Avenue  
 Far Rockaway, NY



MW-6/GW-6 4/23/20  
No Exceedances

MW-5/GW-5 4/23/20  
No Exceedances

MW-3/GW-3 4/22/20		
SVOCs ug/L	Result	TOGS
Benzo(a)pyrene	0.02J	0.002
Benzo(b)fluoranthene	0.04J	0.002
Benzo(k)fluoranthene	0.01J	0.002
Indeno(1,2,3-cd)pyrene	0.02J	0.002
Total Metals ug/L	Result	TOGS
Iron	2470	600

MW-4/GW-4 4/22/20		
SVOCs ug/L	Result	TOGS
Benzo(b)fluoranthene	0.02J	0.002
Benzo(k)fluoranthene	0.01J	0.002
Pesticides ug/L	Result	TOGS
Dieldrin	0.006J	0.004

MW-7/GW-7 4/22/20		
VOCs ug/L	Result	TOGS
Tetrachloroethene	5.9	5
SVOCs ug/L	Result	TOGS
Benzo(a)anthracene	0.05J	0.002
Benzo(a)pyrene	0.04J	0.002
Benzo(b)fluoranthene	0.07J	0.002
Benzo(k)fluoranthene	0.02J	0.002
Chrysene	0.03J	0.002

MW-1/GW-1 4/24/20		
SVOCs ug/L	Result	TOGS
Benzo(b)fluoranthene	0.02J	0.002
Pesticides ug/L	Result	TOGS
Dieldrin	0.015J	0.004
Chlordane	0.532	0.05

MW-2/GW-2 4/23/20		
SVOCs ug/L	Result	TOGS
Benzo(a)anthracene	0.03J	0.002
Benzo(a)pyrene	0.03J	0.002
Benzo(b)fluoranthene	0.04J	0.002
Benzo(k)fluoranthene	0.01J	0.002
Chrysene	0.03J	0.002
Indeno(1,2,3-cd)pyrene	0.02J	0.002
Total Metals ug/L	Result	TOGS
Iron	2380	600

**Legend**

- Monitoring Well Location
- Red line is approximate property boundary
- Red and blue combination line is approximate property boundary and tax lot boundary

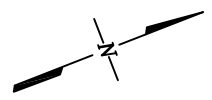
Approx. Scale (ft)



**CA RICH CONSULTANTS, INC.**

Environmental Specialists Since 1982  
17 Dupont Street, Plainview, New York 11803

<b>TITLE:</b> Map of Groundwater Chemistry Exceedances RIR 2020		<b>DATE:</b> 7/7/2020
<b>FIGURE:</b> 14		<b>SCALE:</b> As Shown
<b>DRAWING NO.:</b> 2020-10	<b>Phase 3 Development</b> 17-01 Redfern Avenue Far Rockaway, NY	<b>DRAWN BY:</b> T.R.B.
		<b>APPR. BY:</b> J.T.C.



MW-6/GW-6 4/23/20	
Compound ug/L	Result
Perfluorobutanoic Acid (PFBA)	0.0108
Perfluoropentanoic Acid (PFPeA)	0.0204
Perfluorobutanesulfonic Acid (PFBS)	0.000603
Perfluorohexanoic Acid (PFHxA)	0.0158
Perfluoroheptanoic Acid (PFHpA)	0.0126
Perfluorohexanesulfonic Acid (PFHxS)	0.00375
Perfluorooctanoic Acid (PFDA)	0.0355
Perfluoroheptanesulfonic Acid (PFHpS)	ND
Perfluorononanoic Acid (PFNA)	0.00346
Perfluorooctanesulfonic Acid (PFOS)	0.0503
Perfluorodecanoic Acid (PFDA)	0.000968J
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND
1,4-Dioxane	0.0393J

MW-3/GW-3 4/22/20	
Compound ug/L	Result
Perfluorobutanoic Acid (PFBA)	0.0123
Perfluoropentanoic Acid (PFPeA)	0.0328
Perfluorobutanesulfonic Acid (PFBS)	0.015
Perfluorohexanoic Acid (PFHxA)	0.0264
Perfluoroheptanoic Acid (PFHpA)	0.0143
Perfluorohexanesulfonic Acid (PFHxS)	0.00606
Perfluorooctanoic Acid (PFDA)	0.0327
Perfluoroheptanesulfonic Acid (PFHpS)	ND
Perfluorononanoic Acid (PFNA)	0.00373
Perfluorooctanesulfonic Acid (PFOS)	0.0341
Perfluorodecanoic Acid (PFDA)	0.00162J

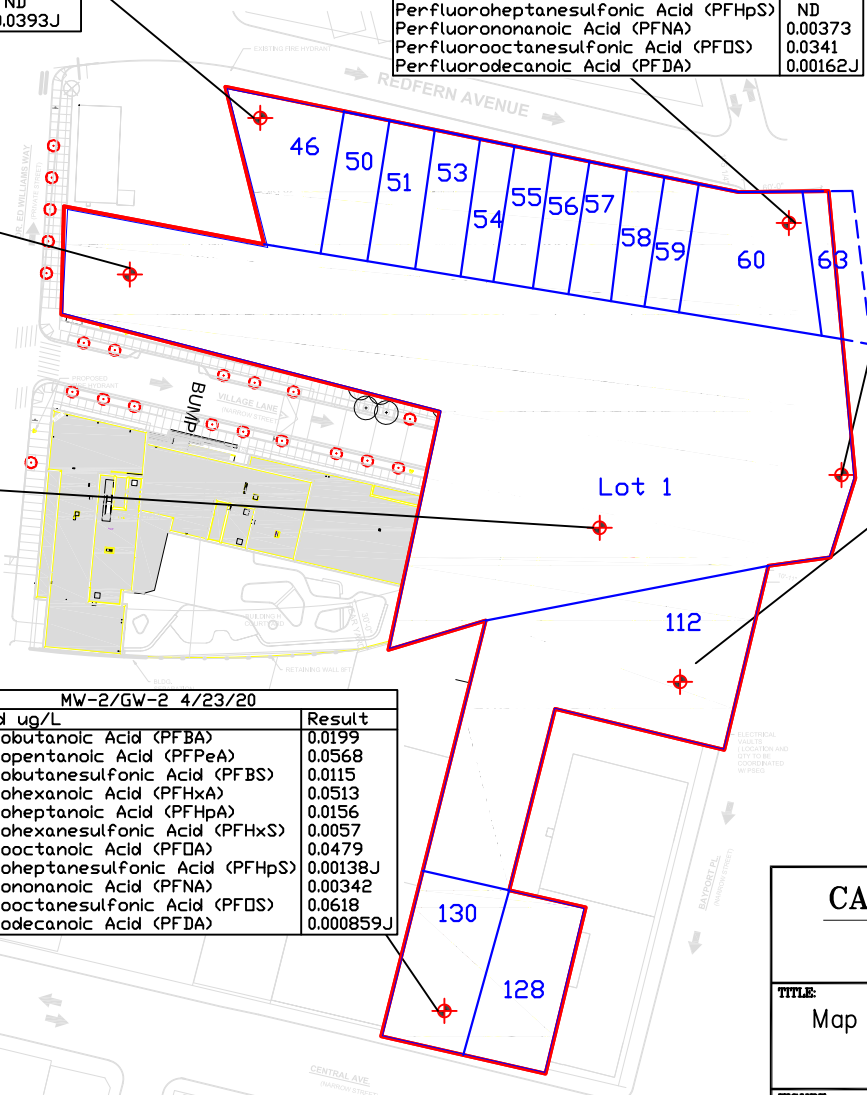
MW-4/GW-4 4/22/20	
Compound ug/L	Result
Perfluorobutanoic Acid (PFBA)	0.0184
Perfluoropentanoic Acid (PFPeA)	0.0394
Perfluorobutanesulfonic Acid (PFBS)	0.00692
Perfluorohexanoic Acid (PFHxA)	0.0346
Perfluoroheptanoic Acid (PFHpA)	0.0168
Perfluorohexanesulfonic Acid (PFHxS)	0.00557
Perfluorooctanoic Acid (PFDA)	0.0557
Perfluoroheptanesulfonic Acid (PFHpS)	ND
Perfluorononanoic Acid (PFNA)	0.00562
Perfluorooctanesulfonic Acid (PFOS)	0.031
Perfluorodecanoic Acid (PFDA)	0.00109J

MW-5/GW-5 4/23/20	
Compound ug/L	Result
Perfluorobutanoic Acid (PFBA)	0.0189
Perfluoropentanoic Acid (PFPeA)	0.0624
Perfluorobutanesulfonic Acid (PFBS)	0.00574
Perfluorohexanoic Acid (PFHxA)	0.0536
Perfluoroheptanoic Acid (PFHpA)	0.03
Perfluorohexanesulfonic Acid (PFHxS)	0.00284
Perfluorooctanoic Acid (PFDA)	0.044
Perfluoroheptanesulfonic Acid (PFHpS)	ND
Perfluorononanoic Acid (PFNA)	0.00304
Perfluorooctanesulfonic Acid (PFOS)	0.0252
Perfluorodecanoic Acid (PFDA)	0.00126J
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND

MW-1/GW-1 4/24/20	
Compound ug/L	Result
Perfluorobutanoic Acid (PFBA)	0.0182
Perfluoropentanoic Acid (PFPeA)	0.0443
Perfluorobutanesulfonic Acid (PFBS)	0.00462
Perfluorohexanoic Acid (PFHxA)	0.0385
Perfluoroheptanoic Acid (PFHpA)	0.016
Perfluorohexanesulfonic Acid (PFHxS)	0.00375
Perfluorooctanoic Acid (PFDA)	0.0646
Perfluoroheptanesulfonic Acid (PFHpS)	ND
Perfluorononanoic Acid (PFNA)	0.0112
Perfluorooctanesulfonic Acid (PFOS)	0.0436
Perfluorodecanoic Acid (PFDA)	0.00339
1,4-Dioxane	0.18

MW-7/GW-7 4/22/20	
Compound ug/L	Result
Perfluorobutanoic Acid (PFBA)	0.0267
Perfluoropentanoic Acid (PFPeA)	0.0722
Perfluorobutanesulfonic Acid (PFBS)	0.00807
Perfluorohexanoic Acid (PFHxA)	0.101
Perfluoroheptanoic Acid (PFHpA)	0.0268
Perfluorohexanesulfonic Acid (PFHxS)	0.00871
Perfluorooctanoic Acid (PFDA)	0.172
Perfluoroheptanesulfonic Acid (PFHpS)	0.00499
Perfluorononanoic Acid (PFNA)	0.00685
Perfluorooctanesulfonic Acid (PFOS)	0.0489
Perfluorodecanoic Acid (PFDA)	0.00117J
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.0029

MW-2/GW-2 4/23/20	
Compound ug/L	Result
Perfluorobutanoic Acid (PFBA)	0.0199
Perfluoropentanoic Acid (PFPeA)	0.0568
Perfluorobutanesulfonic Acid (PFBS)	0.0115
Perfluorohexanoic Acid (PFHxA)	0.0513
Perfluoroheptanoic Acid (PFHpA)	0.0156
Perfluorohexanesulfonic Acid (PFHxS)	0.0057
Perfluorooctanoic Acid (PFDA)	0.0479
Perfluoroheptanesulfonic Acid (PFHpS)	0.00138J
Perfluorononanoic Acid (PFNA)	0.00342
Perfluorooctanesulfonic Acid (PFOS)	0.0618
Perfluorodecanoic Acid (PFDA)	0.000859J



**Legend**

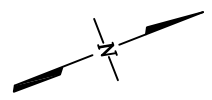
- Monitoring Well Location
- 60 Lot Number and Boundary
- Red line is approximate property boundary
- Red and blue combination line is approximate property boundary and tax lot boundary

Approx. Scale (ft)

**CA RICH CONSULTANTS, INC.**  
 Environmental Specialists Since 1982  
 17 Dupont Street, Plainview, New York 11803

<b>TITLE:</b> Map of PFAS and 1,4'-Dioxane in Groundwater RIR 2020		<b>DATE:</b> 7/7/2020	
<b>FIGURE:</b> 15		<b>SCALE:</b> As Shown	
<b>DRAWING NO.:</b> 2020-11		<b>DRAWN BY:</b> T.R.B.	
		<b>APPR. BY:</b> J.T.C.	





SV-9 3/17/20	
VOCs	ug/m <sup>3</sup>
Dichlorodifluoromethane	1.45
1,3-Butadiene	0.518
Ethanol	11.6
Acetone	501
Trichlorofluoromethane	3.88
Isopropanol	6.17
Tertiary butyl Alcohol	5.12
Carbon disulfide	5.33
2-Butanone	85.2
Chloroform	1.07
n-Hexane	4.55
Benzene	1.69
Cyclohexane	2.26
Heptane	12.3
Toluene	35
Tetrachloroethene	48.4
Ethylbenzene	11.2
p/m-Xylene	48.2
o-Xylene	20
4-Ethyltoluene	3.17
1,3,5-Trimethylbenzene	4.27
1,2,4-Trimethylbenzene	14.3
2-Hexanone	44.7

SV-8 3/17/20	
VOCs	ug/m <sup>3</sup>
Dichlorodifluoromethane	1.91
Ethanol	15.4
Acetone	881
Trichlorofluoromethane	13.9
Isopropanol	4.01
Tertiary butyl Alcohol	4.3
Carbon disulfide	0.626
2-Butanone	109
Chloroform	10.3
n-Hexane	3.52
Benzene	1.39
Cyclohexane	1.89
Heptane	11.5
Toluene	32.8
Tetrachloroethene	14.5
Ethylbenzene	10.7
p/m-Xylene	45.6
o-Xylene	18.7
4-Ethyltoluene	2.77
1,3,5-Trimethylbenzene	4.05
1,2,4-Trimethylbenzene	13.2
2-Hexanone	59

SV-7 3/17/20	
VOCs	ug/m <sup>3</sup>
Dichlorodifluoromethane	7.27
Ethanol	10.3
Acetone	815
Trichlorofluoromethane	96.7
Isopropanol	23.4
Tertiary butyl Alcohol	3.79
Carbon disulfide	2.38
2-Butanone	38.6
Chloroform	1.11
n-Hexane	2.34
Benzene	1.63
Cyclohexane	1.75
Heptane	9.47
Toluene	35
Tetrachloroethene	746
Ethylbenzene	11
p/m-Xylene	46.9
o-Xylene	19.2
4-Ethyltoluene	2.78
1,3,5-Trimethylbenzene	3.84
1,2,4-Trimethylbenzene	12
2-Hexanone	17.2

SV-6 3/17/20	
VOCs	ug/m <sup>3</sup>
Dichlorodifluoromethane	7.66
1,3-Butadiene	2.03
Acetone	1360
Trichlorofluoromethane	73.1
Isopropanol	13.6
Tertiary butyl Alcohol	5.18
2-Butanone	55.2
Chloroform	13.8
n-Hexane	4.86
Benzene	2.93
Cyclohexane	1.69
2,2,4-Trimethylpentane	3.87
Heptane	12.5
Toluene	43
Tetrachloroethene	102
Ethylbenzene	12.3
p/m-Xylene	50.8
o-Xylene	19.9
4-Ethyltoluene	2.96
1,3,5-Trimethylbenzene	3.97
1,2,4-Trimethylbenzene	12.4
2-Hexanone	21.9

SV-5 3/17/20	
VOCs	ug/m <sup>3</sup>
Dichlorodifluoromethane	9.54
Ethanol	25.8
Acetone	1560
Trichlorofluoromethane	495
Isopropanol	17.9
Tertiary butyl Alcohol	6.61
Carbon disulfide	2.69
2-Butanone	173
n-Hexane	4.79
Benzene	3.77
Cyclohexane	2.54
Heptane	11.5
Toluene	30.3
Tetrachloroethene	6.43
Ethylbenzene	10.1
p/m-Xylene	42.3
o-Xylene	17.8
4-Ethyltoluene	2.63
1,3,5-Trimethylbenzene	3.84
1,2,4-Trimethylbenzene	12.7
2-Hexanone	93

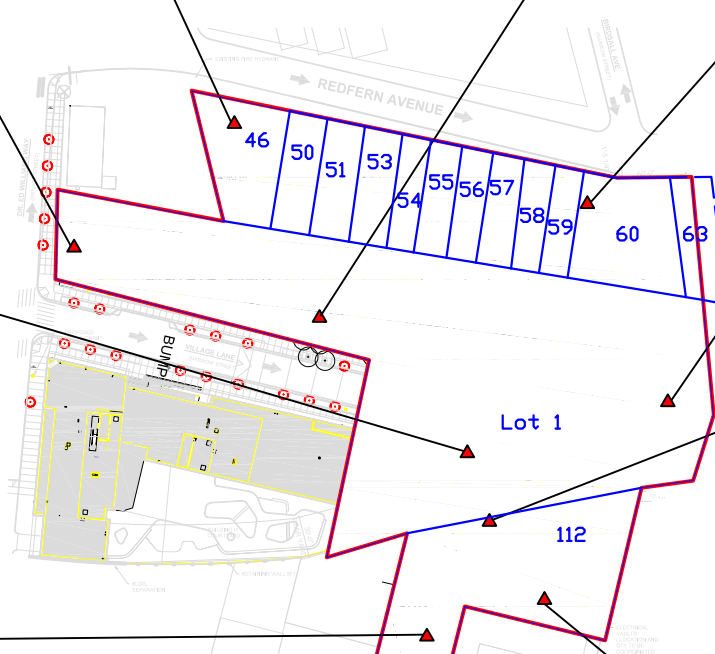
SV-4 3/17/20	
VOCs	ug/m <sup>3</sup>
Dichlorodifluoromethane	2.87
Acetone	953
Trichlorofluoromethane	12.1
Isopropanol	2.42
Tertiary butyl Alcohol	4.18
2-Butanone	39.2
n-Hexane	2.25
Benzene	1.56
Cyclohexane	1.66
Heptane	8.4
Toluene	30.8
Tetrachloroethene	10.8
Ethylbenzene	10.6
p/m-Xylene	48.2
o-Xylene	19.5
4-Ethyltoluene	3.12
1,3,5-Trimethylbenzene	4.13
1,2,4-Trimethylbenzene	13.3
2-Hexanone	15.1

SV-10 3/18/20	
VOCs	ug/m <sup>3</sup>
Dichlorodifluoromethane	10.2
1,3-Butadiene	0.524
Ethanol	22
Acetone	786
Trichlorofluoromethane	106
Isopropanol	4.1
Tertiary butyl Alcohol	5.06
Carbon disulfide	13.4
2-Butanone	77.9
n-Hexane	8.71
Benzene	11.8
Cyclohexane	26.6
Heptane	8.11
Toluene	21.4
1,1,1-Trichloroethane	13.8
Ethylbenzene	6.34
p/m-Xylene	26.5
o-Xylene	10.9
4-Ethyltoluene	1.96
1,3,5-Trimethylbenzene	2.73
1,2,4-Trimethylbenzene	9.49
2-Hexanone	24.2

SV-2 3/17/20	
VOCs	ug/m <sup>3</sup>
Dichlorodifluoromethane	5.14
Ethanol	11.6
Acetone	10.5
Trichlorofluoromethane	24.8
Isopropanol	9.46
2-Butanone	1.65
Tetrahydrofuran	7.28
Benzene	4.38
Toluene	27.3
Tetrachloroethene	22
Chlorobenzene	3.91

SV-3 3/17/20	
VOCs	ug/m <sup>3</sup>
Dichlorodifluoromethane	1.75
Ethanol	22
Acetone	48
Trichlorofluoromethane	1.24
Isopropanol	91.2
Tertiary butyl Alcohol	2.1
Methylene chloride	2.21
2-Butanone	15.2
Ethyl Acetate	18.3
Chloroform	10.9
Tetrahydrofuran	76.4
n-Hexane	5.96
Benzene	51.4
Heptane	1.74
Toluene	257
Tetrachloroethene	7.32
Chlorobenzene	2.4
Ethylbenzene	6.34
p/m-Xylene	8.69
o-Xylene	1.67
1,4-Dichlorobenzene	1.96
2-Hexanone	1.28

SV-1 3/18/20	
VOCs	ug/m <sup>3</sup>
Dichlorodifluoromethane	2.55
Ethanol	10.2
Acetone	29.2
Trichlorofluoromethane	7.87
Isopropanol	21.4
Carbon disulfide	0.791
2-Butanone	5.22
Ethyl Acetate	2.9
Chloroform	0.986
Tetrahydrofuran	21.3
n-Hexane	4.86
Benzene	22.3
Heptane	2.88
Toluene	122
Chlorobenzene	16.8
Ethylbenzene	3.58
p/m-Xylene	5.65
o-Xylene	1.17
1,4-Dichlorobenzene	2



**Legend**

- ▲ Soil Vapor Sample Location
- 60 Lot Number and Boundary
- Red line is approximate property boundary
- Red and blue combination line is approximate property boundary and tax lot boundary

Approx. Scale (ft)

**CA RICH CONSULTANTS, INC.**  
Environmental Specialists Since 1982  
17 Dupont Street, Plainview, New York 11803

<b>TITLE:</b> Map of Soil Vapor Chemistry Results RIR 2020		<b>DATE:</b> 7/7/2020
<b>FIGURE:</b> 16		<b>SCALE:</b> As Shown
<b>DRAWING NO:</b> 2020-2		<b>DRAWN BY:</b> T.R.B.
Phase 3 Development 17-01 Redfern Avenue Far Rockaway, NY		<b>APPR. BY:</b> J.T.C.