

Source: USGS 7.5' Quadrangle, San Leandro/Oakland East, California, 2015



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Site Location Map
 9400-9500 International Boulevard
 Oakland, California

Figure
1

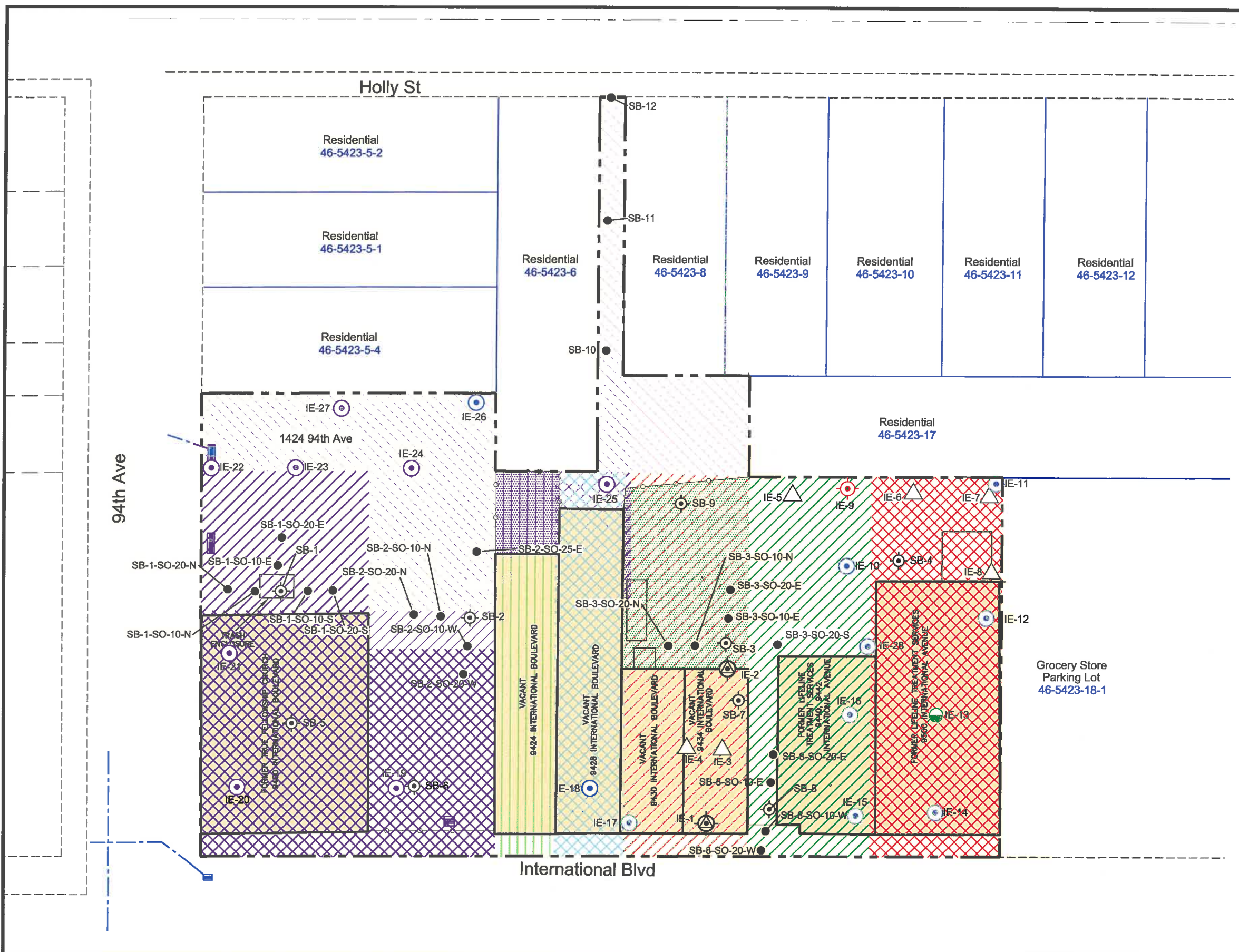
LEGEND:

- — — — — Approximate site boundary
- — ○ — ○ — Fence
- — — — — Outside Structure/Shed
- — — — — Site Building
- — — — — City Right-of-Way
- ▨ Unpaved Surface
- SB-2 ⊕ Boring location (ARS, Inc. 2015)
- SB-2-SO-20-W ● Step-out sample location (ARS, Inc. 2015)
- IE-8 △ Soil gas sampling location (Iris 2015)
- IE-2 ⊕ Soil, soil gas, and groundwater sampling location (Iris 2015)
- ⊕ Soil sampling location (Iris 2016)
- ⊕ Soil and groundwater sampling location (Iris 2016)
- ⊕ Soil, soil gas, and groundwater sampling location (Iris 2016)
- — — — — APN Boundary
- 46-5423-23 Assessor Parcel Number (APN)
- — — — — Storm drain
- Storm drain grate

Assessor's Parcel Number

- ▨ 046-5423-002-02
- ▨ 046-5423-02-02
- ▨ 046-5423-01-01
- ▨ 046-5423-001-01
- ▨ 046-5423-019
- ▨ 046-5423-018-02
- ▨ 046-5423-022
- ▨ 046-5423-020
- ▨ 046-5423-021
- ▨ 046-5423-007

Note: Parcel data from Old Republic Title Company, Title Order No. 1117005622-JM, Preliminary report dated May 22, 2014

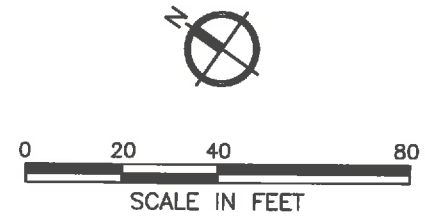
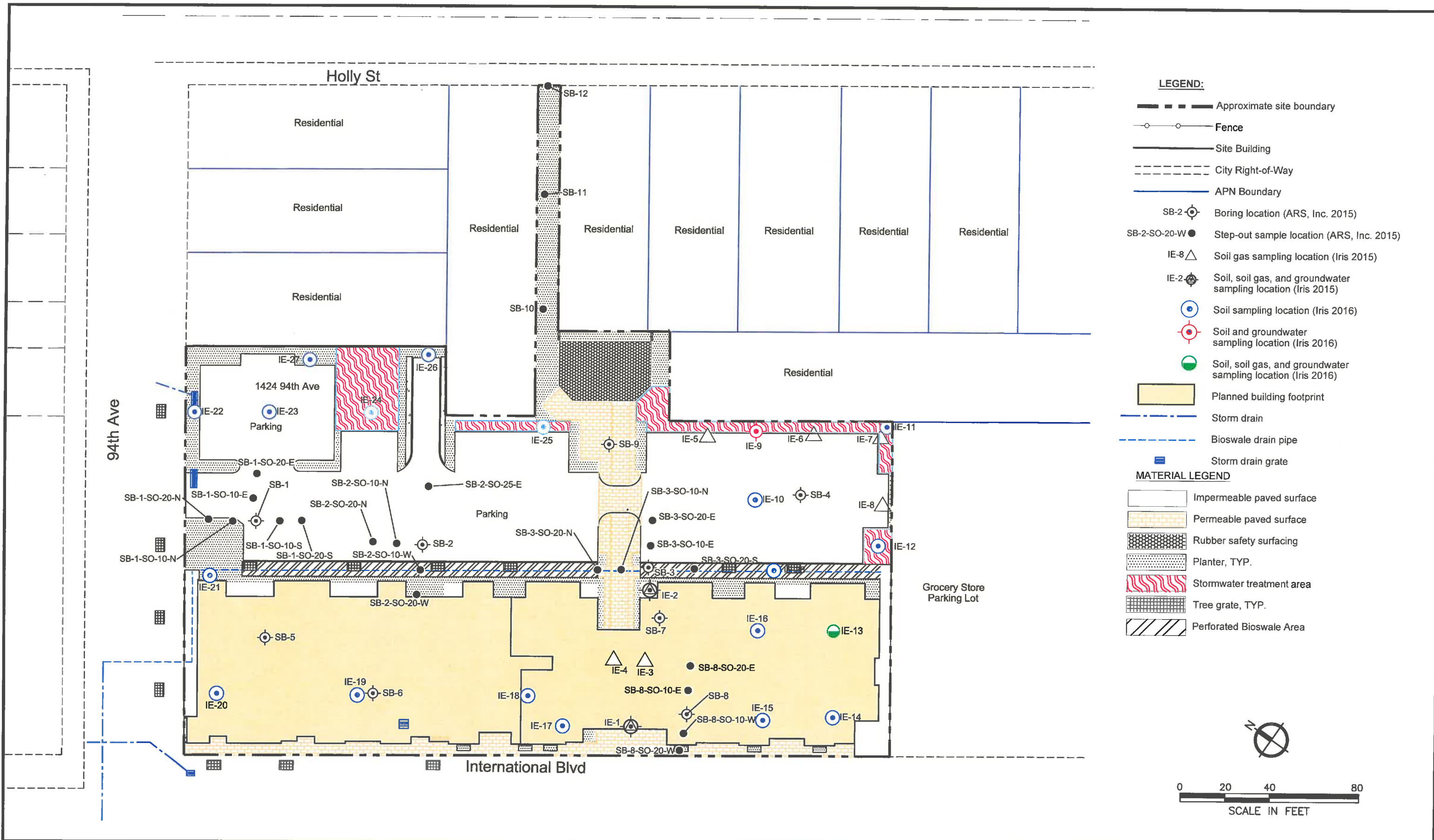


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Site Plan and Historical Boring Locations
 9400-9500 International Boulevard
 Oakland, California

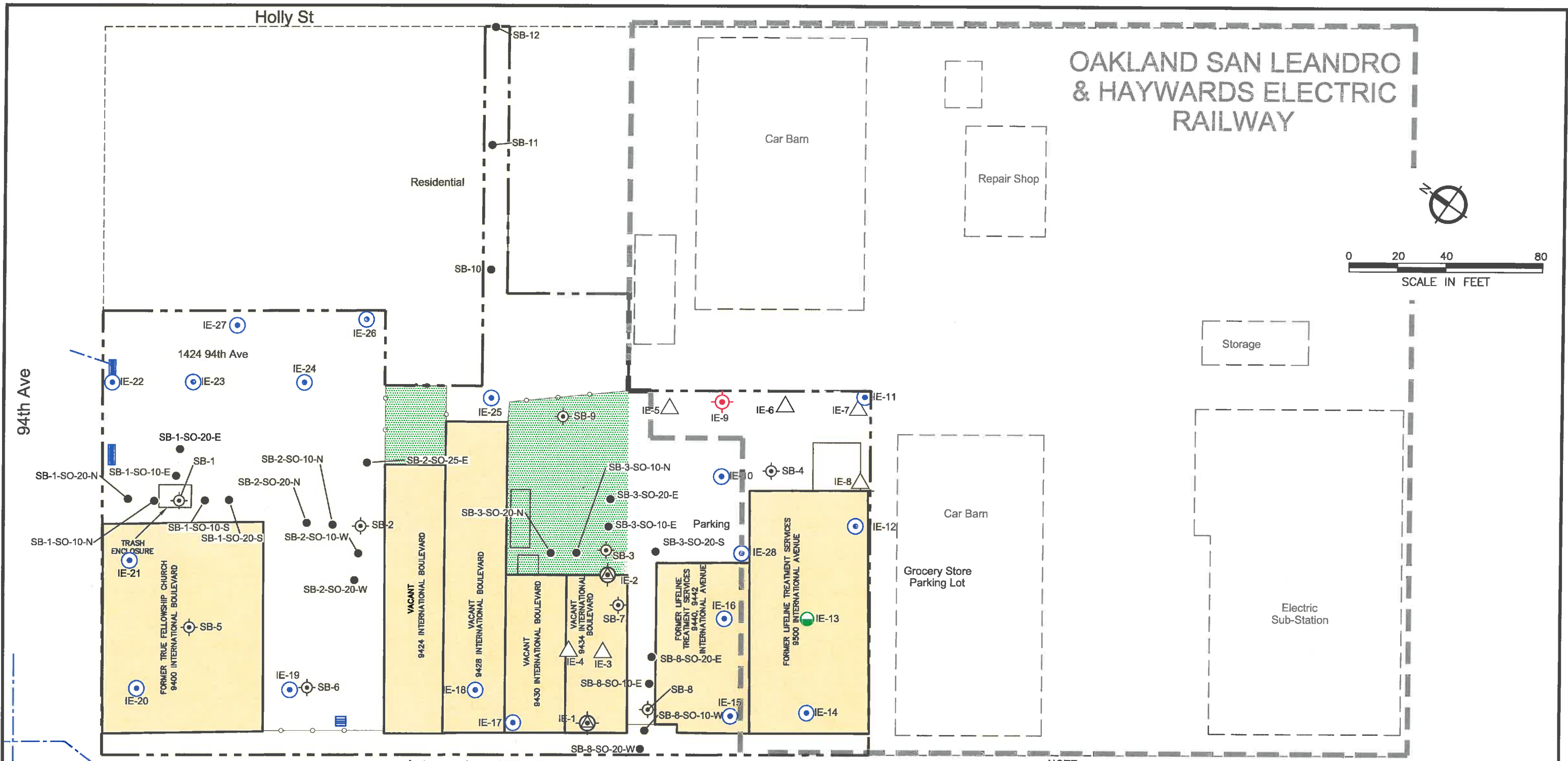
Figure
2



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Proposed Building and Historical Boring Locations
 9400-9500 International Boulevard
 Oakland, California

Figure
3



NOTE:
 Building and property layout of former Oakland San Leandro & Haywards Electric Railway referenced from the 1925 Certified Sanborn Map

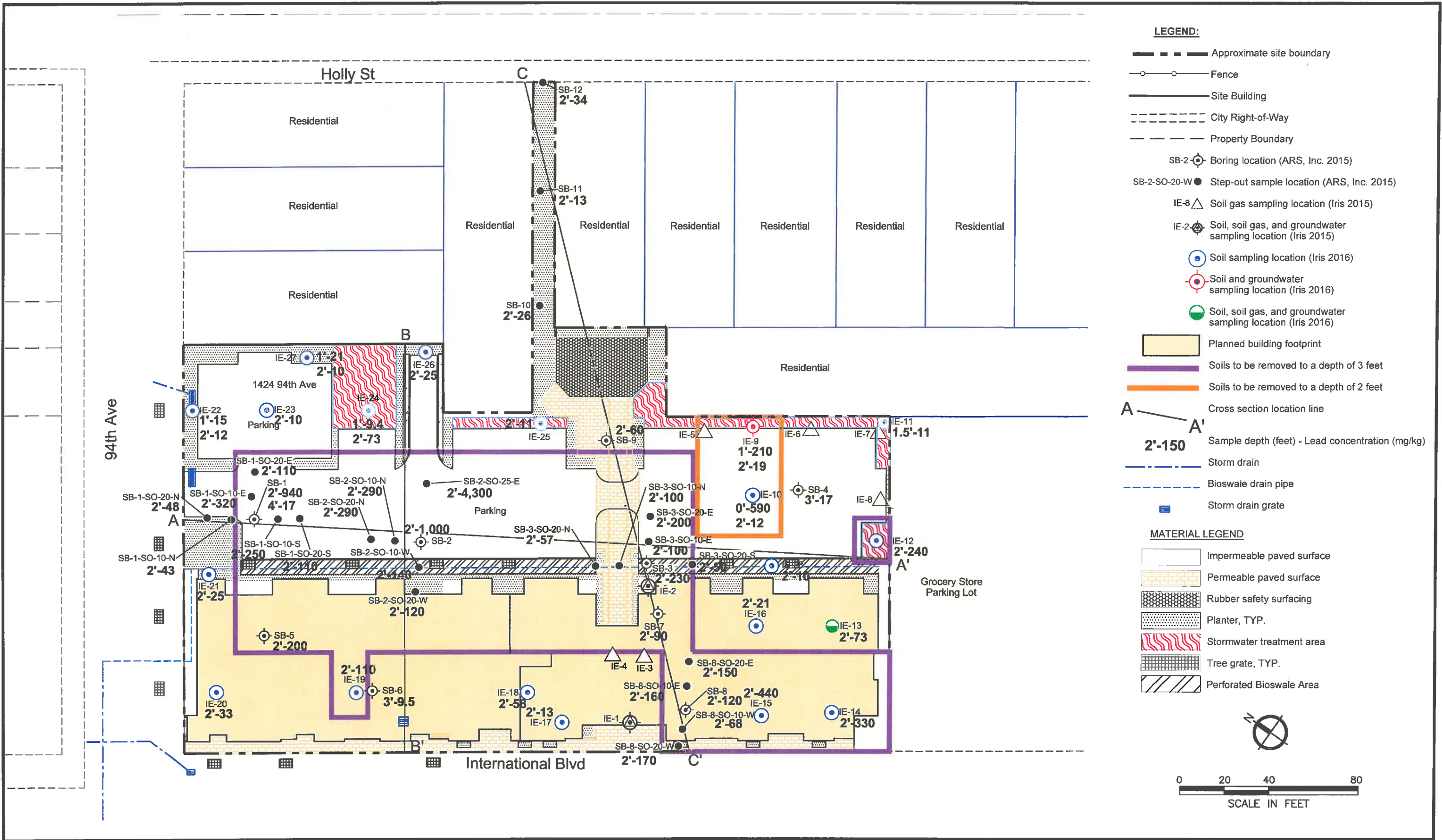
LEGEND:

- Approximate site boundary
- - - - - City Right-of-Way
- - - - - Fence
- Outside Structure/Shed
- Site Building
- - - - - Unpaved Surface
- APN Boundary
- SB-2 Boring location (ARS, Inc. 2015)
- SB-2-SO-20-W Step-out sample location (ARS, Inc. 2015)
- IE-8 Soil gas sampling location (Iris 2015)
- IE-2 Soil, soil gas, and groundwater sampling location (Iris 2015)
- Soil sampling location (Iris 2016)
- Soil and groundwater sampling location (Iris 2016)
- Soil, soil gas, and groundwater sampling location (Iris 2016)
- Approximate location of historic railyard features
- Approximate boundary of historic railyard
- Storm drain
- Storm drain grate

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Layout of Former Oakland San Leandro & Haywards Electric Railway
 9400-9500 International Boulevard
 Oakland, California

Figure
4



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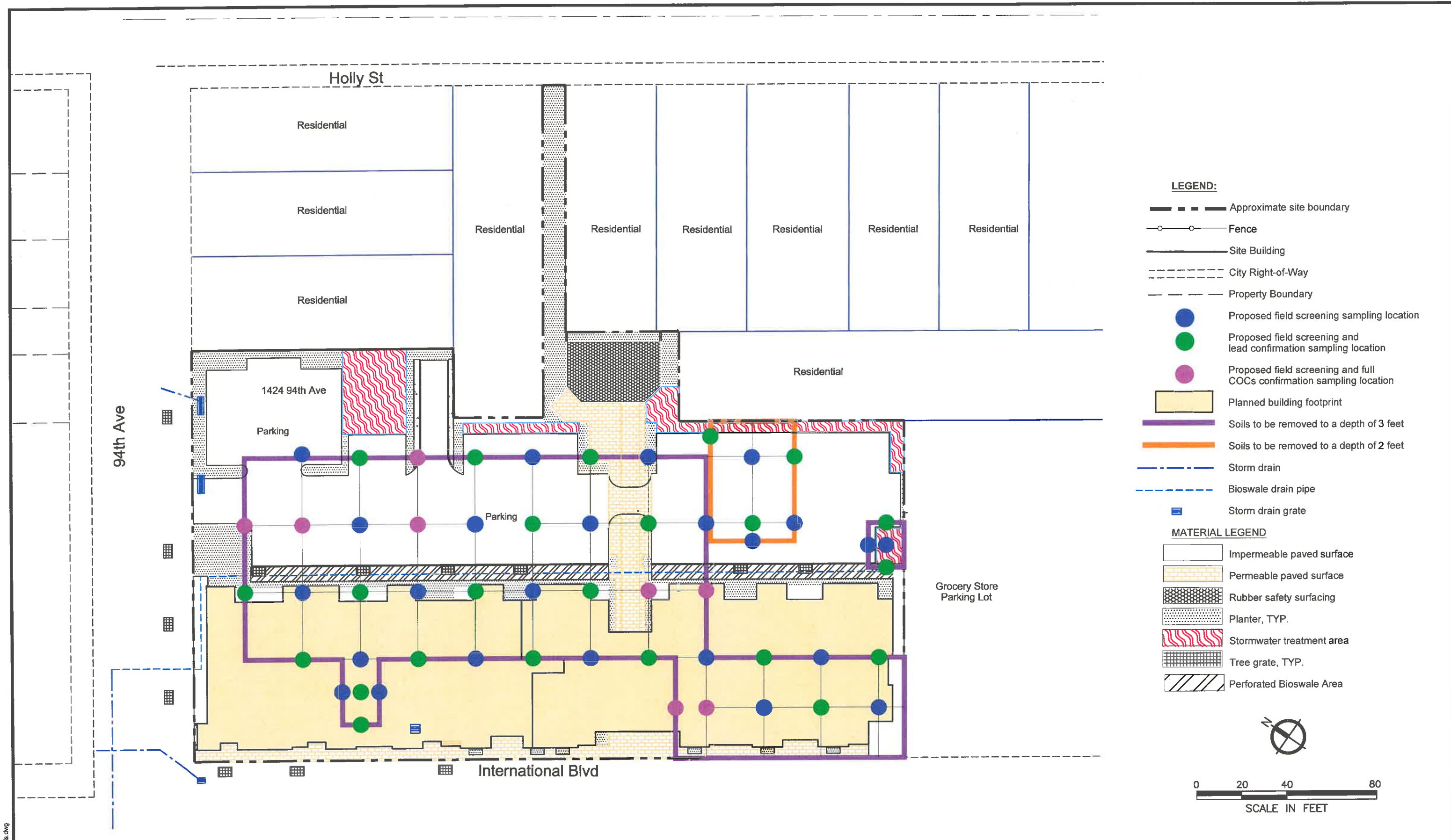
Proposed Excavation Area
 9400-9500 International Boulevard
 Oakland, California

Figure
6

Drafter: EC

Date: 04/25/16

Contract Number: 15-1325A



Remedial Action Plan for Lead Excavation
 9400-9500 International Boulevard
 Oakland, California

Table 1. Site Parcel Summary Table

Site Address APN	Current Property Description ¹	Property History ²		Historic Borings		Proposed Borings	
		Related Dates	Description	ID	Rationale	ID	Rationale
9400 International Boulevard 046-5432-002-02 046-5423-02-02 046-5423-01-01 046-5423-001-01	Vacant	2012	True Fellowship Church		SB-1 staining observed, within historic trash enclosure	IE-19 / IE-20 /	delineate
		2000	Bethlehem Christian Center	SB-1-SO-10-S / SB-1-SO-10- E / SB-1-SO-20-S / SB-1-SO- 20-E / SB-1-SO-10-N / SB-1- SO-20-N / SB-1-F-4.0	delineate horizontal and lateral extent of lead from SB-1	IE-21 / IE-22 / IE-23 / IE-24 / IE-26 / IE-27	lead in soil
		1992-1996	Kragen Auto Parts		SB-5 within future building footprint		
		1933-1986	Bank of America/other bank	SB-2, SB-6 SB-2-SO-10-N / SB-2-SO-10- W / SB-2-SO-25-E / SB-2-SO- 20-N / SB-2-SO-20-W	within future building footprint, possible staining observed, historic vehicle storage delineate SB-2 lead extent		
9424 International Boulevard 046-5423-021	Vacant	1998-2008	Apartments			IE-18 and IE-	delineate
		1967	Café			25	lead in soil
		1950	Office Machines				
		1945	Locksmith				
9428 International Boulevard 046-5423-022	Vacant	1998-2008	Apartments and office space				
		1938	Key System Works				
9430 International Boulevard 046-5423-020	Vacant	2006	Beauty Salon	SB-3-SO-20-N	delineate SB-3 lead extent	IE-17	delineate
		1980-1992	Apostolic Faith Church				lead in soil
		1967-1975	Tavern				
		1945-1950	Attorney's Office				
		1938	Furniture Shop				

Table 1. Site Parcel Summary Table

Site Address APN	Current Property Description ¹	Property History ²		Historic Borings		Proposed Borings			
		Related Dates	Description	ID	Rationale	ID	Rationale		
9434 International Boulevard 046-5423-020	Vacant	2000-2010	Resturant	IE-1-S-GW-SG / IE-2-S-GW- SG / IE-3-SG	site-specific soil, groundwater, and soil gas characterization of former dry cleaners	SB-3	possible observed staining or debris		
		1986	Second Timothy Baptist Church						
		1950-1970	Elmhurst Cleaners & Laundrette						
		1945	Gateway Radio Co. and					SB-3-SO-10-E / SB-3-SO-10- N / SB-3-SO-20-E / SB-3-SO- SB-3	delineate lateral extent of lead from
		1943	Modern Home, Inc.					20-S	
		1943	Pentecostal church					SB-7	within future building footprint, possible staining observed
		1925	Meat Sales					SB-9	observed debris
9440, 9442 International Boulevard 046-5423-019	Vacant	2003-2015	Lifeline Treatment Services	IE-5-SG	site-specific soil gas characterization of former former railyard	SB-8	within future building footprint, possible staining observed		
		1986	Beauty Salon						
		1955-1975	Credit union					SB-8-SO-10-E / SB-8-SO-20- W / SB-8-SO-20-E / SB-8-SO- SB-8	delineate lateral extent of lead from
		1920-1943	Barber & cigars						
9500 International Boulevard 046-5423-018-02	Vacant	2003-2015	Lifeline Treatment Services	IE-6-SG / IE-7-SG / IE-8-SG	site-specific soil gas characterization of former former railyard	SB-4	possible staining, soil characterization		
		1992	Do Drop Inn						
		1986	Motorcycle Club						
		1970-1975	Credit Union						
		1962-1967	Furniture and Carpet Store						
1950-1955	Billiards Hall								
NA / 046-5423-007	Access Road / Parking Lot	1950 to current	Access Road / Parking Lot	SB-10 / SB-11 / SB-12	delineate lead in soil				

Notes:

¹ All parcels will be redeveloped into a residential apartments and ground-floor community and retail spaces

² Property history pulled from Phase I Environmental Site Assessment, 9400-9500 International Boulevard, Oakland, California and Iris Environmental's FOIA file review request

Table 2. Soil Sampling Summary Table

Sample ID	Sample Date	Approximate Top of Boring Elevation (ft msl)	Approximate Sample Depth (ft bgs)	Approximate Sample Elevation (ft msl)	Soil (mg/kg)										Leachate (mg/L)	
					Lead EPA Method 6010B	CAM-17 Metals EPA Method 6020	TPH-d and TPH-mo EPA Method 8015B	Organochlorine Pesticides EPA Method 8081A	VOCs EPA Method 8260B	SVOCs EPA Method 8270C	TPH-g EPA Method 8015Bm	PAHs EPA Method 8270C	PCBs EPA Method 8082	Asbestos EPA Method 600 PLM	TCLP / WET Metals	
SB-2-SO-10-N	8/17/15	26	2	24	x											
SB-2-SO-20-N	8/17/15	26	2	24	x											
SB-2-SO-10-W	8/17/15	26	2	24	x											
SB-2-SO-20-W	8/17/15	26	2	24	x											
SB-2-SO-25-E	8/17/15	27	2	25	x											
SB-3-SO-10-E	8/17/15	27	2	25	x											
SB-3-SO-20-E	8/17/15	26	2	24	x											
SB-3-SO-10-N	8/17/15	26	2	24	x											
SB-3-SO-20-N	8/17/15	26	2	24	x											
SB-3-SO-20-S	8/17/15	26	2	24	x											
SB-8-SO-10-W	8/17/15	26	2	24	x											
SB-8-SO-20-W	8/17/15	25	2	23	x											
SB-8-SO-10-E	8/17/15	26	2	24	x											
SB-8-SO-20-E	8/17/15	26	2	24	x											
SB-10-2.0	8/17/15	27	2	25	x											
SB-11-2.0	8/17/15	27	2	25	x											
SB-12-2.0	8/17/15	26	2	24	x											
IE-1-5.0	10/20/15	26	5	21						x						
IE-2-5.0	10/20/15	26	5	21						x						
IE-9-1.0	4/8/16	26	1	25	x											
IE-9-2.0	4/8/16	26	2	24	x											
IE-10-0.0	4/8/16	25	0	25	x											
IE-10-2.0	4/8/16	25	2	23	x											
IE-11-1.5	4/8/16	27	1.5	25	x											
IE-12-2.0	4/8/16	26	2	24	x											
IE-13-2.0	4/8/16	26	2	24	x											
IE-14-2.0	4/8/16	26	2	24	x											
IE-15-2.0	4/8/16	25	2	23	x											
IE-16-2.0	4/8/16	26	2	24	x											
IE-17-2.0	4/8/16	25	2	23	x											
IE-18-2.0	4/8/16	26	2	24	x											
IE-19-2.0	4/8/16	26	2	24	x											
IE-20-2.0	4/8/16	25	2	23	x											
IE-21-2.0	4/8/16	25	2	23	x											

Table 2. Soil Sampling Summary Table

Sample ID	Sample Date	Approximate Top of Boring Elevation (ft msl)	Approximate Sample Depth (ft bgs)	Approximate Sample Elevation (ft msl)	Soil (mg/kg)										Leachate (mg/L)	
					Lead EPA Method 6010B	CAM-17 Metals EPA Method 6020	TPH-d and TPH-mo EPA Method 8015B	Organochlorine Pesticides EPA Method 8081A	VOCs EPA Method 8260B	SVOCs EPA Method 8270C	TPH-g EPA Method 8015Bm	PAHs EPA Method 8270C	PCBs EPA Method 8082	Asbestos EPA Method 600 PLM	TCLP / WET Metals	
IE-22-1.0	4/8/16	26	1	25	x											
IE-22-2.0	4/8/16	26	2	24	x											
IE-23-2.0	4/8/16	26	2	24	x											
IE-24-1.0	4/8/16	26	1	25	x											
IE-24-2.0	4/8/16	26	2	24	x											
IE-25-2.0	4/8/16	27	2	25	x											
IE-26-2.0	4/8/16	26	2	24	x											
IE-27-1.0	4/8/16	26	1	25	x											
IE-27-2.0	4/8/16	26	2	24	x											
IE-28-2.0	4/8/16	26	2	24	x											

Notes:

x Sampled analyzed for header compounds

Definitions:

ft = feet

bgs = below ground surface

msl = mean sea level

Table 3. Groundwater and Soil Gas Sampling Summary Table

Sample ID	Sample Date	Approximate Top of Boring Elevation (ft msl)	Approximate Sample Depth (ft bgs)	Approximate Sample Elevation (ft msl)	Groundwater	Soil Gas
					($\mu\text{g/L}$)	($\mu\text{g/m}^3$)
					VOCs EPA Method 8260B	VOCs EPA Method TO-15
IE-1-GW	10/20/15	26	10	16	x	
IE-2-GW	10/20/15	26	11.5	14	x	
IE-9-GW	4/8/15	26	11	15	x	
IE-13-GW	4/3/11/15	26	23	3	x	
IE-1-SG	10/20/15	26	5	21		x
IE-2-SG	10/20/15	26	5	21		x
IE-3-SG	10/20/15	26	5	21		x
IE-4-SG	10/20/15	26	5	21		x
IE-5-SG	10/20/15	26	5	21		x
IE-6-SG	10/20/15	26	5	21		x
IE-7-SG	10/20/15	26	5	21		x
IE-8-SG	10/20/15	26	5	21		x
IE-13-SG	4/11/16	26	5	21		x

Notes:

x Sampled analyzed for header compounds

Definitions:

ft = feet

bgs = below ground surface

msl = mean sea level

Table 4. Comparison of Soil Sampling Results to Residential Environmental Screening Levels

Sample ID	Sample Date	Approximate Sample Elevation (ft msl)	Lead	Other Metals			TPH	Organochlorine Pesticides
			RWQCB Residential ESL	Arsenic	Cobalt	Mercury	Motor Oil	Chlordane
			80 (mg/kg)	11 (mg/kg)	23 (mg/kg)	13 (mg/kg)	RWQCB Odor Level 100 (mg/kg)	RWQCB Residential ESL 0.48 (mg/kg)
Soils to be Removed								
SB1-2'	7/2/15	24	940	14	10	0.47	140	0.84
SB2-2'	7/2/15	25	1,000	4.5	9.5	15	560	--
SB3-2'	7/2/15	25	230	14	9.9	0.29	41	< 0.12
SB5-2'	7/2/15	24	200	--	--	--	< 5.0	--
SB7-2'	7/2/15	24	90	--	--	--	17	< 0.025
SB8-2'	7/2/15	24	120	7.3	29	0.13	70	--
SB-1-SO-10-S	8/17/15	24	250	--	--	--	--	--
SB-1-SO-10-E	8/17/15	24	320	--	--	--	--	--
SB-2-SO-10-N	8/17/15	25	290	--	--	--	--	--
SB-2-SO-10-W	8/17/15	25	140	--	--	--	--	--
SB-2-SO-25-E	8/17/15	25	4,300	--	--	--	--	--
SB-8-SO-10-E	8/17/15	24	160	--	--	--	--	--
SB-3-SO-10-E	8/17/15	25	100	--	--	--	--	--
SB-3-SO-10-N	8/17/15	24	100	--	--	--	--	--
SB-1-SO-20-S	8/17/15	24	110	--	--	--	--	--
SB-1-SO-20-E	8/17/15	24	110	--	--	--	--	--
SB-2-SO-20-N	8/17/15	25	290	--	--	--	--	--
SB-2-SO-20-W	8/17/15	24	120	--	--	--	--	--
SB-8-SO-20-W	8/17/15	23	170	--	--	--	--	--
SB-8-SO-20-E	8/17/15	24	150	--	--	--	--	--
SB-3-SO-20-E	8/17/15	24	200	--	--	--	--	--
IE-9-1.0	4/8/16	25	210	--	--	--	--	--
IE-10-0.0	4/8/16	25	590	--	--	--	--	--
IE-12-2.0	4/8/16	24	240	--	--	--	--	--
IE-14-2.0	4/8/16	24	330	--	--	--	--	--
IE-15-2.0	4/8/16	23	440	--	--	--	--	--
IE-19-2.0	4/8/16	24	110	--	--	--	--	--
Soils to Remain in Place								
SB1-6'	7/2/15	20	9.6	--	--	--	< 5.0	--
SB1-10'	7/2/15	16	8.7	--	--	--	< 5.0	--
SB2-6'	7/2/15	20	9.7	--	--	--	< 5.0	--
SB2-10'	7/2/15	16	--	--	--	--	--	--
SB3-6'	7/2/15	20	12	--	--	--	< 5.0	< 0.025
SB3-10'	7/2/15	16	--	--	--	--	--	--
SB4-3'	6/24/15	23	17	8	7.2	0.055	< 5.0	--
SB4-6'	6/24/15	20	8.3	--	--	--	< 5.0	--
SB4-10'	6/24/15	16	6.4	--	--	--	< 5.0	--
SB5-6'	7/2/15	20	12	--	--	--	< 5.0	--
SB5-10'	7/2/15	16	--	--	--	--	--	--
SB6-3'	6/24/15	23	9.5	--	--	--	< 5.0	--
SB6-6'	6/24/15	20	11	8.1	12	0.055	< 5.0	--
SB6-10'	6/24/15	16	7.1	--	--	--	< 5.0	--
SB7-6'	7/2/15	20	11	--	--	--	< 5.0	< 0.025
SB7-10'	7/2/15	16	--	--	--	--	--	--
SB8-6'	7/2/15	20	15	--	--	--	< 5.0	--
SB8-10'	7/2/15	16	--	--	--	--	--	--
SB9-2'	7/2/15	25	60	--	--	--	15	< 0.025
SB9-6'	7/2/15	21	9.3	--	--	--	< 5.0	--
SB9-10'	7/2/15	17	8.4	--	--	--	< 5.0	--
SB-1-SO-10-N	8/17/15	24	43	--	--	--	--	--
SB-8-SO-10-W	8/17/15	24	68	--	--	--	--	--
SB-1-SO-20-N	8/17/15	24	48	--	--	--	--	--
SB-3-SO-20-N	8/17/15	24	57	--	--	--	--	--
SB10-2.0'	8/17/15	25	26	--	--	--	--	--
SB11-2.0'	8/17/15	25	13	--	--	--	--	--
SB12-2.0'	8/17/15	24	34	--	--	--	--	--
SB1-F-4.0'	8/17/15	22	17	--	--	--	--	--
SB-3-SO-20-S	8/17/15	24	50	--	--	--	--	--
IE-1-5.0	10/20/15	21	--	--	--	--	--	--

Table 4. Comparison of Soil Sampling Results to Residential Environmental Screening Levels

Sample ID	Sample Date	Approximate Sample Elevation (ft msl)	Lead	Other Metals			TPH	Organochlorine Pesticides
			RWQCB Residential ESL	Arsenic	Cobalt	Mercury	Motor Oil	Chlordane
			80 (mg/kg)	11 (mg/kg)	23 (mg/kg)	13 (mg/kg)	RWQCB Odor Level 100 (mg/kg)	RWQCB Residential ESL 0.48 (mg/kg)
Soils to Remain in Place, continued								
IE-2-5.0	10/20/15	21	--	--	--	--	--	--
IE-9-2.0	4/8/16	24	19	--	--	--	--	--
IE-10-2.0	4/8/16	23	12	--	--	--	--	--
IE-11-1.5	4/8/16	24	11	--	--	--	--	--
IE-13-2.0	4/8/16	24	73	--	--	--	--	--
IE-16-2.0	4/8/16	24	21	--	--	--	--	--
IE-17-2.0	4/8/16	23	13	--	--	--	--	--
IE-18-2.0	4/8/16	24	58	--	--	--	--	--
IE-20-2.0	4/8/16	23	33	--	--	--	--	--
IE-21-2.0	4/8/16	23	25	--	--	--	--	--
IE-22-1.0	4/8/16	25	15	--	--	--	--	--
IE-22-2.0	4/8/16	24	12	--	--	--	--	--
IE-23-2.0	4/8/16	24	10	--	--	--	--	--
IE-24-1.0	4/8/16	25	9.4	--	--	--	--	--
IE-24-2.0	4/8/16	24	73	--	--	--	--	--
IE-25-2.0	4/8/16	25	11	--	--	--	--	--
IE-26-2.0	4/8/16	24	25	--	--	--	--	--
IE-27-1.0	4/8/16	25	21	--	--	--	--	--
IE-27-2.0	4/8/16	24	10	--	--	--	--	--
IE-28-2.0	4/8/16	24	10	--	--	--	--	--

Notes:

- Soil sampling results are compared to San Francisco Bay Regional Water Quality Control Board (RWQCB) residential shallow soil Environmental Screening human health risk (ESLs Table S-1) Levels (ESLs) for evaluation of direct exposure or RWQCB odor nuisance levels (ESLs Table S-4)
- Arsenic soil sampling results are compared to the established background threshold value of 11 mg/kg for arsenic (Duverge 2011)
- Analytical results reported by McCampbell Analytical in Pittsburg, California and Curtis & Tompkins Laboratories in Berkeley, California.

Definitions:

- ft = feet
- msl = mean sea level
- mg/kg = milligrams per kilogram
- = Not Analyzed

 = Sample exceeds respective RWQCB residential ESL from Table B-2, or background level for arsenic

<5.0 = Not detected at or above the laboratory reporting limit of 5.0 µg/L

Table 5. Comparison of Groundwater Sampling Results to Environmental Screening Levels

Analyte	Direct Exposure Human Health Risk		Vapor Intrusion Risk		Groundwater Sampling Results			
	Protective Screening Level	Screening Level Source	Protective Screening Levels	Screening Level Source	IE-1-GW 10/20/15	IE-2-GW 10/20/15	IE-09-GW 4/9/15	IE-13-GW 4/11/15
	(µg/L)		(µg/L)		(µg/L)	(µg/L)	(µg/L)	(µg/L)
Acetone	14,065	ESL- DW	22,597,943	OSWER VISL	<10	<10	<200	<100
Benzene	0.15	ESL- DW	1.1	ESL-VI	<0.50	<0.50	<1.0	<5.0
Bromobenzene	62	USEPA	620	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Bromodichloromethane	0.12	ESL- DW	0.9	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Bromoform	2.88	ESL- DW	117	OSWER VISL	<1.0	<1.0	<2.0	<10
Bromomethane (methyl bromide)	7.55	ESL- DW	17.4	OSWER VISL	<1.0	<1.0	<2.0	<10
2-Butanone (methyl ethyl ketone)	5,565	ESL- DW	2,241,987	OSWER VISL	<10	<10	<20	<100
n-Butylbenzene	290	HHRA Note 3	--	--	<0.50	<0.50	<1.0	<5.0
sec-Butylbenzene	590	HHRA Note 3	--	--	<0.50	11	<1.0	<5.0
tert-Butylbenzene	690	USEPA	--	--	<0.50	1.1	<1.0	<5.0
Carbon disulfide	810	USEPA	1,240	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Carbon tetrachloride	0.10	ESL- DW	0.2	ESL-VI	<0.50	<0.50	<1.0	<5.0
Chlorobenzene	70	ESL- DW	410	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Chlorobromomethane (bromochloromethane)	83	USEPA	0.88	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Chlorodibromomethane (dibromochloromethane)	0.70	ESL- DW	3.25	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Chloroethane (ethyl chloride)	20,857	ESL- DW	22,985	OSWER VISL	<1.0	<1.0	<2.0	<10
Chloroform	0.23	ESL- DW	0.81	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Chloromethane (methyl chloride)	188	ESL- DW	260	OSWER VISL	<1.0	<1.0	<2.0	<10
2-Chlorotoluene	240	USEPA	--	--	<0.50	<0.50	<1.0	<5.0
4-Chlorotoluene	250	USEPA	--	--	<0.50	<0.50	<1.0	<5.0
Cumene (isopropylbenzene)	450	USEPA	887	OSWER VISL	<0.50	8.8	<1.0	<5.0
Cymene (p-isopropyltoluene)	--	--	--	--	<0.50	<0.50	<1.0	<5.0
1,2-Dibromo-3-chloropropane	0.001	ESL- DW	0.03	OSWER VISL	<2.0	<2.0	<4.0	<20
1,2-Dibromoethane (ethylene dibromide)	0.007	ESL- DW	0.18	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Dibromomethane (methylene bromide)	8.30	USEPA	0.18	OSWER VISL	<0.50	<0.50	<1.0	<5.0
1,2-Dichlorobenzene	100	ESL- DW	2,658	OSWER VISL	<0.50	<0.50	<1.0	<5.0
1,3-Dichlorobenzene	600	ESL- DW	--	--	<0.50	<0.50	<1.0	<5.0
1,4-Dichlorobenzene	0.48	ESL- DW	2.59	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Dichlorodifluoromethane (Freon 12)	200	USEPA	7.44	OSWER VISL	<1.0	<1.0	<2.0	<10
1,1-Dichloroethane (1,1-DCA)	2.75	ESL- DW	7.64	OSWER VISL	<0.50	<0.50	<1.0	<5.0
1,2-Dichloroethane (1,2-DCA)	0.17	ESL- DW	2.24	OSWER VISL	<0.50	<0.50	<1.0	<5.0
1,1-Dichloroethene (1,1-DCE)	6	ESL- DW	170	ESL-VI	<0.50	<0.50	<1.0	<5.0
cis-1,2-Dichloroethene (cis-1,2-DCE)	6	ESL- DW	110	ESL-VI	<0.50	<0.50	<1.0	<5.0
trans-1,2-Dichloroethene (trans-1,2-DCE)	10	ESL- DW	940	ESL-VI	<0.50	<0.50	<1.0	<5.0

Table 5. Comparison of Groundwater Sampling Results to Environmental Screening Levels

Analyte	Direct Exposure Human Health Risk		Vapor Intrusion Risk		Groundwater Sampling Results			
	Protective Screening Level	Screening Level Source	Protective Screening Levels	Screening Level Source	IE-1-GW 10/20/15	IE-2-GW 10/20/15	IE-09-GW 4/9/15	IE-13-GW 4/11/15
	(µg/L)		(µg/L)		(µg/L)	(µg/L)	(µg/L)	(µg/L)
Dichloromethane (methylene chloride)	2.74	ESL- DW	48	ESL-VI	<10	<10	<20	<100
1,2-Dichloropropane	0.44	ESL- DW	2.4	OSWER VISL	<0.50	<0.50	<1.0	<5.0
1,3-Dichloropropane	110	HHRA Note 3	--	--	<0.50	<0.50	<1.0	<5.0
2,2-Dichloropropane	--	--	--	--	<0.50	<0.50	<1.0	<5.0
1,1-Dichloropropene	--	--	4.8	OSWER VISL	<0.50	<0.50	<1.0	<5.0
cis-1,3-Dichloropropene	0.47	USEPA	3.8	ESL-VI	<0.50	<0.50	<1.0	<5.0
trans-1,3-Dichloropropene	0.47	USEPA	3.8	ESL-VI	<0.50	<0.50	<1.0	<5.0
Ethylbenzene	1.49	ESL- DW	3.49	OSWER VISL	<0.50	1.9	<1.0	<5.0
Hexachlorobutadiene	0.14	ESL- DW	0.3	OSWER VISL	<2.0	<2.0	<4.0	<20
2-Hexanone (methyl butyl ketone)	38	USEPA	8,213	OSWER VISL	<10	<10	<20	<100
Methyl tert-butyl ether (MTBE)	5	ESL- DW	450	OSWER VISL	0.60	1.7	<1	<5.0
4-Methyl-2-pentanone (methyl isobutyl ketone)	120	ESL- DW	554,648	ESL-VI	<10	<10	<20	<100
Naphthalene	0.12	ESL- DW	5	OSWER VISL	<2.0	4.2	<4.0	<20
n-Propylbenzene	660	USEPA	8,213	OSWER VISL	<0.50	3.9	<1.0	<5.0
Styrene	0.50	ESL- DW	9,278	OSWER VISL	<0.50	<0.50	<1.0	<5.0
1,1,1,2-Tetrachloroethane	0.57	ESL- DW	3.7	OSWER VISL	<0.50	<0.50	<1.0	<5.0
1,1,2,2-Tetrachloroethane	0.08	ESL- DW	3.23	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Tetrachloroethene (PCE)	0.06	ESL- DW	3	ESL-VI	<0.50	<0.50	<1.0	6.3
Toluene	40	ESL- DW	3,600	ESL-VI	<0.50	<0.50	<1.0	<5.0
1,2,3-Trichlorobenzene	7	USEPA	--	--	<0.50	<0.50	<1.0	<5.0
1,2,4-Trichlorobenzene	1.13	ESL- DW	36	OSWER VISL	<0.50	<0.50	<1.0	<5.0
1,1,1-Trichloroethane (1,1,1-TCA)	200	ESL- DW	200	ESL-VI	<0.50	<0.50	<1.0	<5.0
1,1,2-Trichloroethane (1,1,2-TCA)	0.28	ESL- DW	5.2	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Trichloroethene (TCE)	0.71	ESL- DW	1.2	OSWER VISL	<0.50	<0.50	<1.0	<5.0
Trichlorofluoromethane (Freon 11)	1,700	HHRA Note 3	184	OSWER VISL	<1.0	<1.0	<2.0	<10
1,2,3-Trichloropropane	0.000	HHRA Note 3	--	--	<0.50	<0.50	<1.0	<5.0
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	55,000	USEPA	184	OSWER VISL	<2.0	<2.0	<4.0	<20
1,2,4-Trimethylbenzene	15	USEPA	29	OSWER VISL	<0.50	<0.50	<1.0	<5.0
1,3,5-Trimethylbenzene	120	USEPA	--	--	<0.50	<0.50	<1.0	<5.0
Vinyl acetate	410	USEPA	9,986	OSWER VISL	<10	<10	<20	<10
Vinyl chloride	0.04	ESL- DW	0.1	ESL-VI	<0.50	<0.50	<1.0	<5.0
m-, p-Xylene	20	ESL- DW	355	OSWER VISL	<0.50	<0.50	<1.0	<5.0
o-Xylene	190	USEPA	493	OSWER VISL	<0.50	<0.50	<1.0	<5.0

Table 5. Comparison of Groundwater Sampling Results to Environmental Screening Levels

Analyte	Direct Exposure Human Health Risk		Vapor Intrusion Risk		Groundwater Sampling Results			
	Protective Screening Level	Screening Level Source	Protective Screening Levels	Screening Level Source	IE-1-GW	IE-2-GW	IE-09-GW	IE-13-GW
	(µg/L)		(µg/L)		(µg/L)	(µg/L)	(µg/L)	(µg/L)
					10/20/15	10/20/15	4/9/15	4/11/15

Notes:


- (1) ESL-DW = San Francisco Bay Regional Water Quality Control Board (RWQCB) residential shallow groundwater Environmental Screening Levels (ESLs) for evaluation of direct exposure human health risk (ESLs W-1)
- (2) HHRA Note 3 = DTSC's Office of Human and Ecological Risk (HERO) Human Health Risk Assessment (HHRA) Note Number 3 residential Screening Levels
- (3) USEPA = United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) for tap water
- (4) ESL-VI = RWQCB's residential shallow groundwater ESLs for evaluation of vapor intrusion (ESLs Table W-3)
- (5) OSWER VISL = USEPA's Office of Solid Waste and Emergency Response (OSWER) Vapor Intrusion Screening Levels (VISLs) for target groundwater concentration for residential vapor intrusion considerations using TCR = 1E-6 or THQ=1
- (6) Analytical results reported by Curtis & Tompkins Laboratories in Berkeley, California.


Definitions:

µg/L = micrograms per liter

<1.7 = not detected at or above the laboratory reporting limit of 1.7 µg/L

-- = regulatory screening level not established

 = shaded cells exceeds protective levels for direct exposure

 = outlined cells exceeds protective levels for vapor intrusion


 = shaded and outlined cells exceed both protective levels for direct exposure and vapor intrusion

Table 6. Comparison of Soil Gas Sampling Results to Environmental Screening Levels

Analyte	Vapor Intrusion Risk		Soil Gas Sampling Results								
	Protective Screening Levels	Screening Level	IE-1-SG	IE-2-SG	IE-3-SG	IE-4-SG	IE-5-SG	IE-6-SG	IE-7-SG	IE-8-SG	IE-13-SG
	(µg/m3)	Source	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)
Acetone	16,000,000	ESL-VI	13	<9.4	17	<8.1	22	31	20	32	130
Acrolein	--	ESL-VI	<9.4	<9.0	<9.2	<7.8	<17	<17	<19	<7.8	<8.6
Benzene	48	ESL-VI	<3.3	<3.1	4.4	<2.7	<5.8	11	<6.5	5.0	9.8
Benzyl chloride	--	ESL-VI	<5.3	<5.1	<5.2	<4.4	<9.4	<9.5	<11	<4.4	<4.9
Bromodichloromethane	38	ESL-VI	<6.8	<6.6	<6.7	<5.7	<12	<12	<14	<5.7	<6.3
Bromoform	1,300	ESL-VI	<11	<10	<10	<8.8	<19	<19	<21	<8.8	<9.7
Bromomethane	2,600	ESL-VI	<4.0	<3.8	<3.9	<3.3	<7.1	<7.1	<7.9	<3.3	<3.6
1,3-Butadiene	--	ESL-VI	<2.3	<2.2	<2.2	<1.9	<4.0	<4.1	<4.5	<1.9	10
2-Butanone	2,600,000	ESL-VI	<3.0	<2.9	3.2	<2.5	<5.4	5.5	<6.0	7.9	49.0
Carbon disulfide	365,000	USEPA	32	100	18	<2.7	<5.7	<5.7	<6.3	12	18
Carbon tetrachloride	33	ESL-VI	<6.4	<6.2	<6.3	<5.4	<11	<12	<13	<5.4	<5.9
Chlorobenzene	26,000	ESL-VI	<4.7	<4.5	<4.6	<3.9	<8.4	<8.5	<9.3	<3.9	<4.3
Chlorodibromomethane	--	ESL-VI	<8.7	<8.4	<8.5	<7.3	<16	<16	<17	<7.3	<8
Chloroethane	5,200,000	ESL-VI	<2.7	<2.6	<2.6	<2.3	<4.8	<4.9	<5.4	<2.3	<2.5
Chloroform	61	ESL-VI	<5.0	<4.8	<4.9	<4.2	<8.9	<9.0	<9.9	<4.2	<4.6
Chloromethane	47,000	ESL-VI	<2.1	<2.0	<2.1	<1.8	<3.8	<3.8	<4.2	<1.8	2.3
Cyclohexane	3,150,000	USEPA	<3.5	<3.4	<3.4	<2.9	<6.3	8.1	<7.0	3.1	3.4
1,2-Dibromoethane	2	ESL-VI	<7.8	<7.6	<7.7	<6.6	<14	<14	<16	<6.6	<7.2
1,2-Dichlorobenzene	100,000	ESL-VI	<6.1	<5.9	<6.0	<5.1	<11	<11	<12	<5.1	<5.7
1,3-Dichlorobenzene	--	ESL-VI	<6.1	<5.9	<6.0	<5.1	<11	<11	<12	<5.1	<5.7
1,4-Dichlorobenzene	130	ESL-VI	<6.1	<5.9	<6.0	<5.1	<11	<11	<12	<5.1	<5.7
Dichlorodifluoromethane	--	ESL-VI	<5.0	<4.9	<4.9	<4.2	<9.0	<9.1	<10	<4.2	<4.6
1,1-Dichloroethane	880	ESL-VI	<4.1	<4.0	<4.0	<3.5	<7.4	<7.4	<8.2	<3.5	<3.8
1,2-Dichloroethane	54	ESL-VI	<4.1	<4.0	<4.0	<3.5	<7.4	<7.4	<8.2	<3.5	<3.8

Table 6. Comparison of Soil Gas Sampling Results to Environmental Screening Levels

Analyte	Vapor Intrusion Risk		Soil Gas Sampling Results								
	Protective Screening Levels	Screening Level	IE-1-SG	IE-2-SG	IE-3-SG	IE-4-SG	IE-5-SG	IE-6-SG	IE-7-SG	IE-8-SG	IE-13-SG
	(µg/m3)	Source	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	10/20/15 (µg/m3)	4/11/16 (µg/m3)
1,1-Dichloroethene	37,000	ESL-VI	<4.0	<3.9	<4.0	<3.4	<7.2	<7.3	<8.0	<3.4	<3.7
cis-1,2-Dichloroethene	4,200	ESL-VI	<4.0	<3.9	<4.0	<3.4	<7.2	<7.3	<8.0	<3.4	<3.7
trans-1,2-Dichloroethene	31,000	ESL-VI	<4.0	<3.9	<4.0	<3.4	<7.2	<7.3	<8.0	<3.4	<4.3
1,2-Dichloropropane	140	ESL-VI	<4.7	<4.6	<4.6	<4.0	<8.4	<8.5	<9.4	<4.0	<4.3
cis-1,3-Dichloropropene	88	ESL-VI	<4.6	<4.5	<4.5	<3.9	<8.3	<8.4	<9.2	<3.9	<4.3
trans-1,3-Dichloropropene	88	ESL-VI	<4.6	<4.5	<4.5	<3.9	<8.3	<8.4	<9.2	<3.9	<4.3
1,2-Dichloro-1,1,2,2-tetrafluoroethane	--	ESL-VI	<7.1	<6.9	<7.0	<6.0	<13	<13	<14	<6.0	<6.6
Ethyl acetate	--	ESL-VI	<3.7	<3.5	<3.6	<3.1	<6.6	<6.6	<7.3	<3.1	<3.4
Ethylbenzene	560	ESL-VI	<4.4	<4.3	<4.3	<3.7	<7.9	<8.0	<8.8	<3.7	<4.1
4-Ethyltoluene	--	ESL-VI	<5.0	<4.8	<4.9	<4.2	<9.0	<9.0	<10	<4.2	<4.6
Heptane	365,000	USEPA	<4.2	<4.0	<4.1	<3.5	<7.5	<7.5	<8.3	4.4	13.0
Hexachlorobutadiene	64	ESL-VI	<11	<11	<11	<9.1	<19	<20	<22	<9.1	<10
Hexane	--	ESL-VI	<3.6	<3.5	<3.5	<3.0	<6.4	<6.5	<7.2	<3.0	5.5
2-Hexanone	--	ESL-VI	<4.2	<4.0	<4.1	<3.5	<7.5	<7.5	<8.3	<3.5	<3.9
Methyl tert-butyl ether	5,400	ESL-VI	<3.7	<3.6	<3.6	<3.1	<6.6	<6.6	<7.3	<3.1	<3.4
Methylene chloride	1,400	ESL-VI	<3.5	<3.4	7.2	<3.0	<6.3	<6.4	<7.1	<3.0	<3.3
4-Methyl-2-pentanone	1,600,000	ESL-VI	<4.2	<4.0	<4.1	<3.5	7.6	<7.5	13	7.8	<3.9
Naphthalene	41	ESL-VI	<21	<21	<21	<18	<38	<39	<43	<18	<20
Styrene	470,000	ESL-VI	<4.3	<4.2	<4.3	<3.6	<7.8	<7.8	<8.6	<3.6	<4
1,1,2,2-Tetrachloroethane	24	ESL-VI	<7.0	<6.8	<6.9	<5.9	<13	<13	<14	<5.9	<6.5
Tetrachloroethene	240	ESL-VI	<6.9	<6.7	<6.8	<5.8	<12	<12	<14	<5.8	<6.4
Tetrahydrofuran	None	ESL-VI	<3.0	<2.9	<2.9	<2.5	<5.4	<5.4	<6.0	<2.5	<2.8
Toluene	160,000	ESL-VI	4.1	<3.7	4.1	<3.2	<6.9	7.8	<7.7	6.1	8.5

Table 6. Comparison of Soil Gas Sampling Results to Environmental Screening Levels

Analyte	Vapor Intrusion Risk		Soil Gas Sampling Results								
	Protective Screening Levels	Screening Level	IE-1-SG	IE-2-SG	IE-3-SG	IE-4-SG	IE-5-SG	IE-6-SG	IE-7-SG	IE-8-SG	IE-13-SG
	($\mu\text{g}/\text{m}^3$)	Source	10/20/15 ($\mu\text{g}/\text{m}^3$)	10/20/15 ($\mu\text{g}/\text{m}^3$)	10/20/15 ($\mu\text{g}/\text{m}^3$)	10/20/15 ($\mu\text{g}/\text{m}^3$)	10/20/15 ($\mu\text{g}/\text{m}^3$)	10/20/15 ($\mu\text{g}/\text{m}^3$)	10/20/15 ($\mu\text{g}/\text{m}^3$)	10/20/15 ($\mu\text{g}/\text{m}^3$)	4/11/16 ($\mu\text{g}/\text{m}^3$)
1,2,4-Trichlorobenzene	1,000	ESL-VI	<7.6	<7.3	<7.4	<6.3	<14	<14	<15	<6.3	<7
1,1,1-Trichloroethane	520,000	ESL-VI	<5.6	<5.4	<5.5	<4.7	<10	<10	<11	<4.7	<5.1
1,1,2-Trichloroethane	88	ESL-VI	<5.6	<5.4	<5.5	<4.7	<10	<10	<11	<4.7	<5.1
Trichloroethene	340	ESL-VI	<5.5	<5.3	<5.4	<4.6	<9.8	<9.9	<11	<4.6	<5.1
Trichlorofluoromethane	--	ESL-VI	<5.7	<5.5	<5.6	<4.8	<10	<10	<11	<4.8	<5.3
1,1,2-Trichloro-1,2,2-trifluoroethane	--	ESL-VI	<7.8	<7.5	<7.7	<6.6	<14	<14	<16	<6.6	<7.2
1,2,4-Trimethylbenzene	--	ESL-VI	<5.0	<4.8	<4.9	<4.2	<9.0	<9.0	<10	<4.2	<4.6
1,3,5-Trimethylbenzene	--	ESL-VI	<5.0	<4.8	<4.9	<4.2	<9.0	<9.0	<10	<4.2	<4.6
Vinyl acetate	--	ESL-VI	<3.6	<3.5	<3.5	<3.0	<6.4	<6.5	<7.1	<3.0	<3.3
Vinyl chloride	18	ESL-VI	<2.6	<2.5	<2.6	<2.2	<4.7	<4.7	<5.2	<2.2	<2.4
o-Xylene	52,000	ESL-VI	<4.4	<4.3	<4.3	<3.7	<7.9	<8.0	<8.8	<3.7	<4.1
m-,p-Xylene	52,000	ESL-VI	<4.4	<4.3	<4.3	<3.7	<7.9	<8.0	<8.8	<3.7	4.3

Notes:

- (1) ESL-VI = RWQCB's soil gas ESLs for evaluation of vapor intrusion at residential properties (ESLs Table SG-1)
- (2) USEPA = USEPA's RSLs for residential indoor air with DTSCs HHRA Note 3 sub-slab/soil gas attenuation factor

Definitions:

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

<1.7 = Not detected at or above the laboratory reporting limit of 1.7 $\mu\text{g}/\text{m}^3$

-- = regulatory screening level not established