
Appendix A.7

Air Quality

Mobile Screening Analysis

Intersections	Increment (Total)					CO Screening		Truck Increment ¹				Auto Increment ²				Intersection Fugitive Dust Type	Increment (Truck Equivalence)					p.m. Screening		
	a.m.	Midday	p.m.	Sat Midday	Max	Threshold	Result	a.m.	Midday	p.m.	Sat Midday	a.m.	Midday	p.m.	Sat Midday		a.m.	Midday	p.m.	Sat Midday	Max	Threshold	Result	
Prototypical Site 2 (Long Island City)																								
1	42nd Road & Crescent St	-	33	-	-	33	160	Pass	-	0	-	-	-	33	-	-	3	-	1.5	-	-	1.5	23	Pass
2	42nd Road & 27th St	-	35	-	-	35	160	Pass	-	0	-	-	-	35	-	-	2	-	7.0	-	-	7.0	20	Pass
3	42nd Road & Hunter St/28th St	-	48	-	-	48	160	Pass	-	0	-	-	-	48	-	-	2	-	9.5	-	-	9.5	20	Pass
4	42nd Road & Jackson Ave	-	45	-	-	45	160	Pass	-	0	-	-	-	45	-	-	3	-	2.0	-	-	2.0	23	Pass
5	Queens Plaza S & Jackson Ave	-	43	-	-	43	160	Pass	-	0	-	-	-	43	-	-	3	-	1.9	-	-	1.9	23	Pass
6	Queens Plaza S & 28th St	-	29	-	-	29	160	Pass	-	0	-	-	-	29	-	-	3	-	1.3	-	-	1.3	23	Pass
7	Queens Plaza S & 27th St	-	34	-	-	34	160	Pass	-	0	-	-	-	34	-	-	3	-	1.5	-	-	1.5	23	Pass
8	Queens Plaza S & Crescent St	-	33	-	-	33	160	Pass	-	0	-	-	-	33	-	-	3	-	1.5	-	-	1.5	23	Pass
Prototypical Site 3 (Jamaica)																								
1	Jamaica Ave & Sutphin Blvd	42	72	63	24	72	170	Pass	1	1	0	0	41	71	63	24	3	2.1	3.4	2.8	1.1	3.4	23	Pass
2	Jamaica Ave & 147th Place	26	67	48	18	67	170	Pass	1	1	0	0	25	66	48	18	3	1.4	3.2	2.1	0.8	3.2	23	Pass
3	Jamaica Ave & 148th St	37	83	50	16	83	170	Pass	1	1	0	0	36	82	50	16	3	1.9	3.9	2.2	0.7	3.9	23	Pass
4	Jamaica Ave & 149th St	10	15	4	-1	15	170	Pass	0	0	0	0	10	15	4	-1	3	0.4	0.7	0.2	0.0	0.7	23	Pass
5	Jamaica Ave & 150th St	18	27	15	3	27	170	Pass	1	0	0	0	17	27	15	3	3	1.1	1.2	0.7	0.1	1.2	23	Pass
6	Archer Ave & 143 St	37	67	62	30	67	170	Pass	1	1	0	0	36	66	62	30	3	1.9	3.2	2.7	1.3	3.2	23	Pass
7	Archer Ave & Sutphin Blvd	83	127	127	59	127	170	Pass	3	1	0	0	80	126	127	59	3	4.5	5.9	5.6	2.6	5.9	23	Pass
8	Archer Ave & 147th Place	77	128	125	56	128	170	Pass	3	1	0	0	74	127	125	56	3	4.2	5.9	5.5	2.5	5.9	23	Pass
9	Archer Ave & 148th St	57	110	110	40	110	170	Pass	2	1	0	0	55	109	110	40	3	3.1	5.1	4.8	1.8	5.1	23	Pass
10	Archer Ave & 149th St	36	64	64	26	64	170	Pass	1	1	0	0	35	63	64	26	3	1.9	3.1	2.8	1.1	3.1	23	Pass
11	Archer Ave & 150th St	32	59	57	20	59	170	Pass	1	0	0	0	31	59	57	20	3	1.7	2.6	2.5	0.9	2.6	23	Pass
12	94th Ave & 143rd St	36	53	61	27	61	170	Pass	1	0	0	0	35	53	61	27	3	1.9	2.3	2.7	1.2	2.7	23	Pass
13	94th Ave & Sutphin Blvd	23	40	38	18	40	170	Pass	1	0	0	0	22	40	38	18	3	1.3	1.8	1.7	0.8	1.8	23	Pass
14	94th Ave & 150th St	31	47	45	20	47	170	Pass	1	0	0	0	30	47	45	20	3	1.6	2.1	2.0	0.9	2.1	23	Pass
Prototypical Site 5 (Downtown Brooklyn)																								
1	Flatbush Ave Ex & Dekalb Ave	-	37	-	-	37	140	Pass	-	0	-	-	-	37	-	-	3	-	1.6	-	-	1.6	23	Pass
2	Flatbush Ave Ex & Fulton St & Nevins St	-	56	-	-	56	140	Pass	-	0	-	-	-	56	-	-	3	-	2.5	-	-	2.5	23	Pass
Prototypical Site (Williamsburg)																								
1	N 5th St & Wythe Ave	-	35	27	-	35	170	Pass	-	0	0	-	-	35	27	-	1	-	8.8	6.8	-	8.8	13	Pass
2	N 5th St & Berry St	-	27	28	-	28	170	Pass	-	0	0	-	-	27	28	-	1	-	6.8	7.0	-	7.0	13	Pass
3	N 8th St & Berry St	-	32	25	-	32	170	Pass	-	0	0	-	-	32	25	-	1	-	8.0	6.3	-	8.0	13	Pass
4	N 8th St & Wythe Ave	-	32	25	-	32	170	Pass	-	0	0	-	-	32	25	-	1	-	8.0	6.3	-	8.0	13	Pass
5	N 7th St & Wythe Ave	-	32	25	-	32	170	Pass	-	0	0	-	-	32	25	-	1	-	8.0	6.3	-	8.0	13	Pass

Notes:

- 1) Assuming the project-generated trucks are HDDV3 (Class 3 Heavy-Duty Diesel Vehicles [10,001-14,000 lbs. GVWR]).
- 2) Assuming the project-generated autos are LDGT1 (Light-Duty Gasoline Trucks 1 [0-6,000 lbs. GVWR, 0-3750 lbs. LVW]).

Truck Equivalence Ratios

		Truck Equivalence		
Fugitive Dust Type		per truck	per auto	Threshold
1	Paved road < 5000 veh/day	0.630	0.482	13
2	Collector roads	0.428	0.199	20
3	Principal and minor arterials	0.317	0.044	23
4	Expressways and limited access roads	0.317	0.044	23

Truck Equivalence Ratios

Emission Model	Speed (mph)	PM ₁₀ Emission Factor (g/mi)	PM _{2.5} Emission Factor ^{1,2} (g/mi)	Reduction
Mobile6.2	15	0.78	0.29	48%
MOVES2014a	13.2	-	0.15	

Notes:

1) Per EPA's AP-42, the ratio of PM_{2.5}/PM₁₀ emissions is 25%-37%. For conservative purposes, a ratio of 37% was assumed.

2) Per consultation with DCP, an agreement was reached that the mobile source screening worksheet on Page 17-12 of the current CEQR Technical Manual utilizes very conservative assumptions for estimating PM_{2.5} emission factors, including over-predicted vehicular emissions from the outdated Mobile6.2 emission simulation model.

Based on the comparison above, we assumed the calculated truck equivalence based on the current CEQR TM Mobile Screening can be reduced by approximately 48%.

Figure A.6-1 #2 Fuel Oil HVAC Screening Analysis for Prototypical Site 1

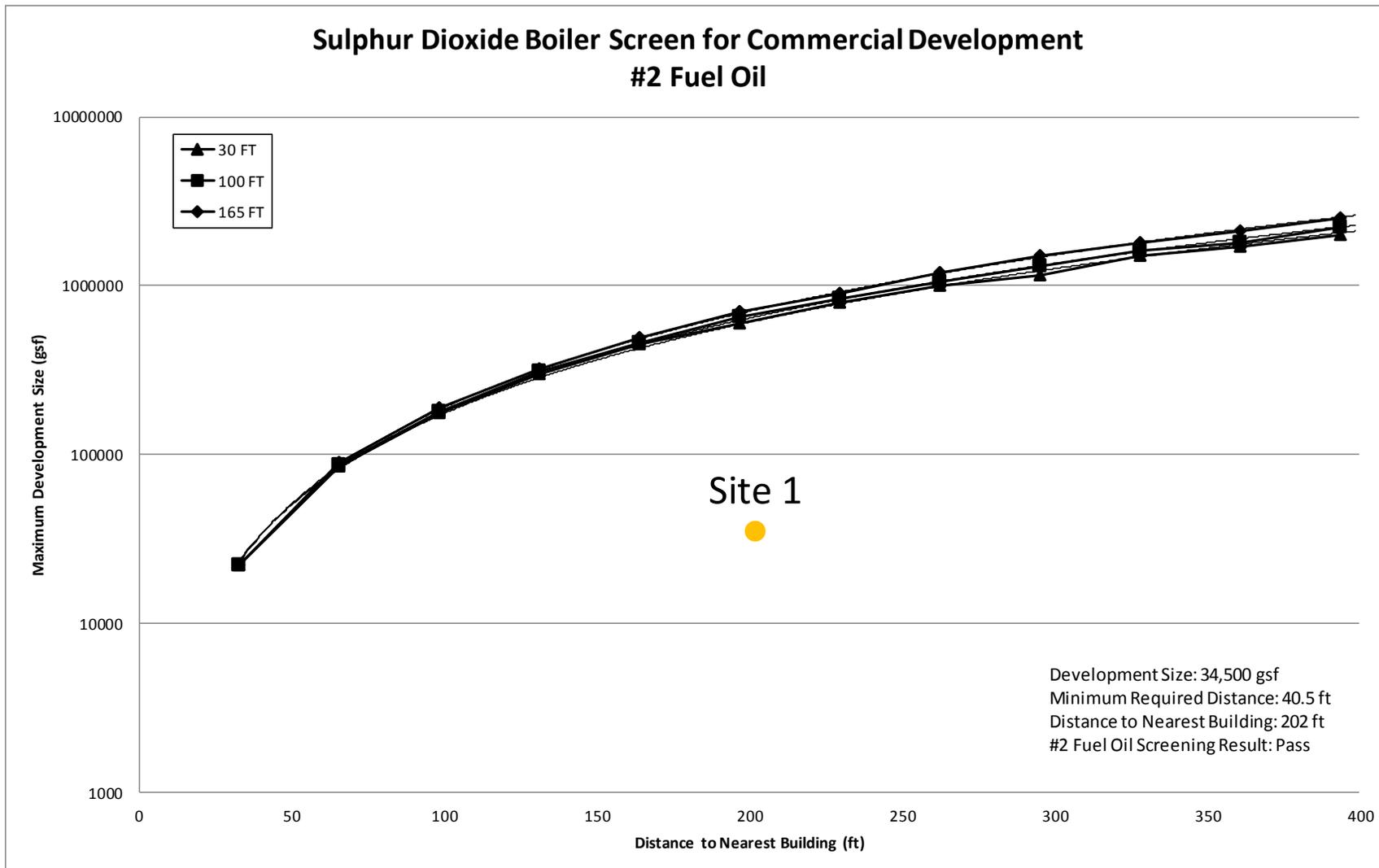


Figure A.6-2 #2 Fuel Oil HVAC Screening Analysis for Prototypical Sites 3a and 3b (Cumulative)

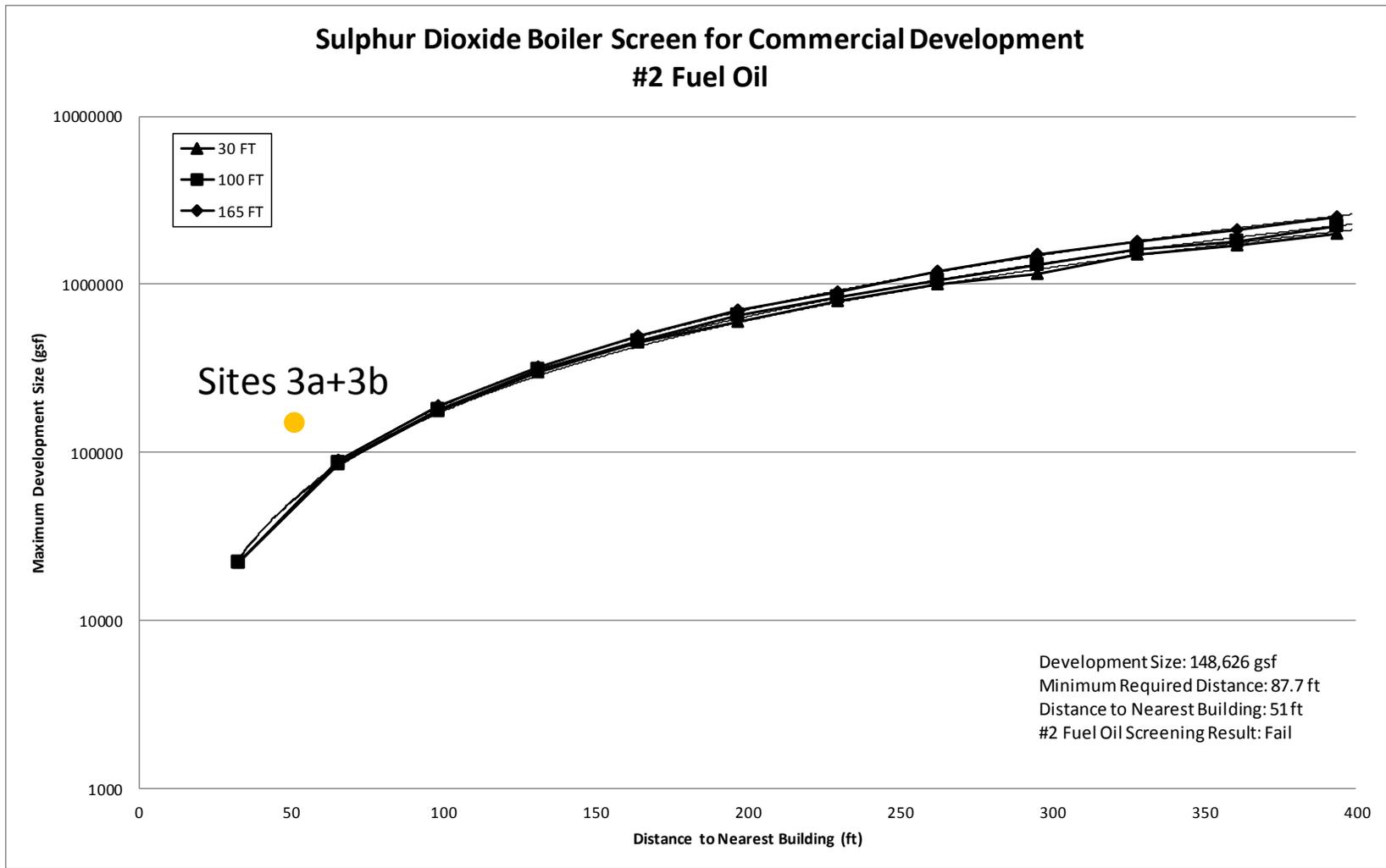


Figure A.6-3 #2 Fuel Oil HVAC Screening Analysis for Prototypical Site 3c (cumulative)

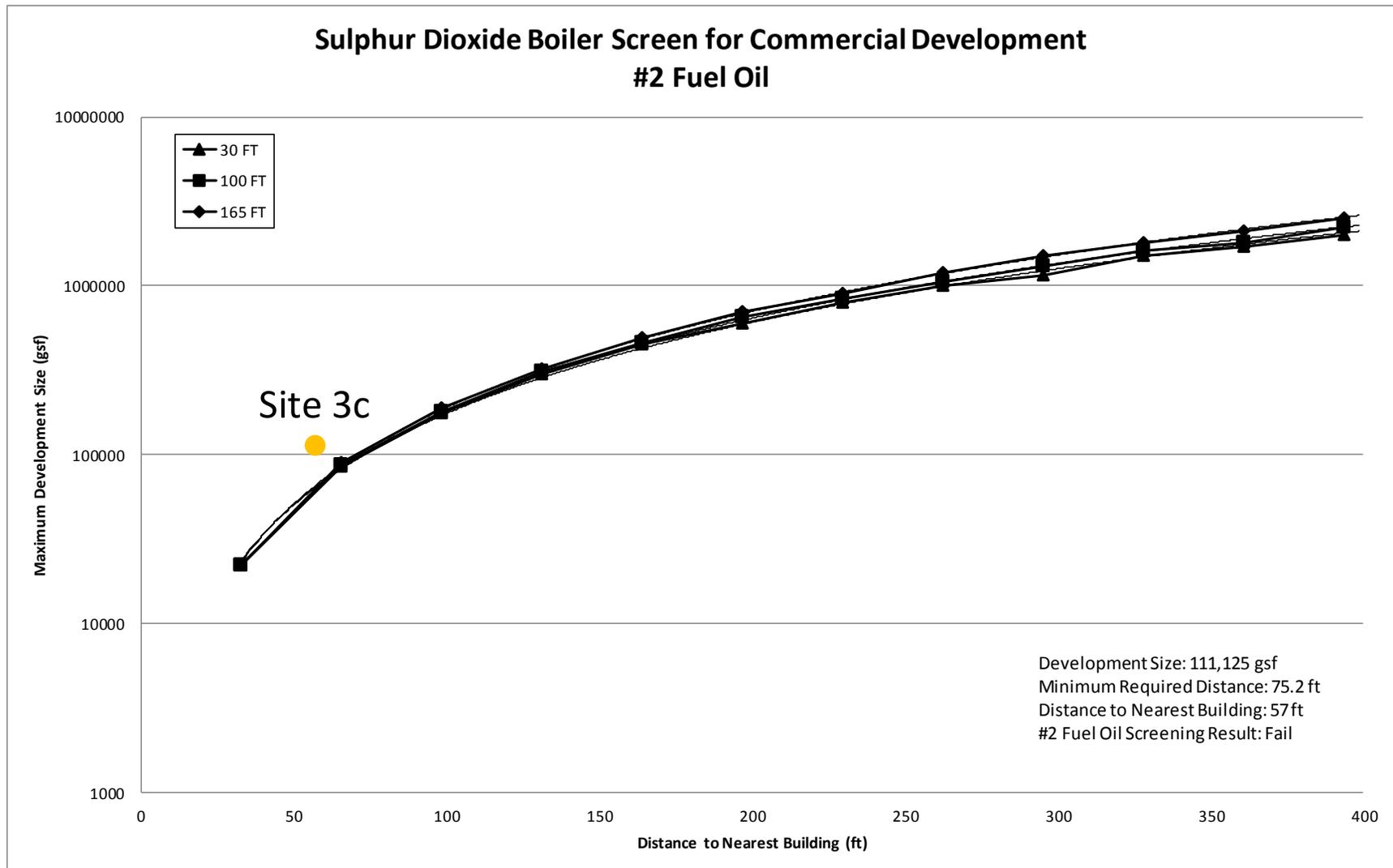


Figure A.6-4 #2 Fuel Oil HVAC Screening Analysis for Prototypical Site 3c1

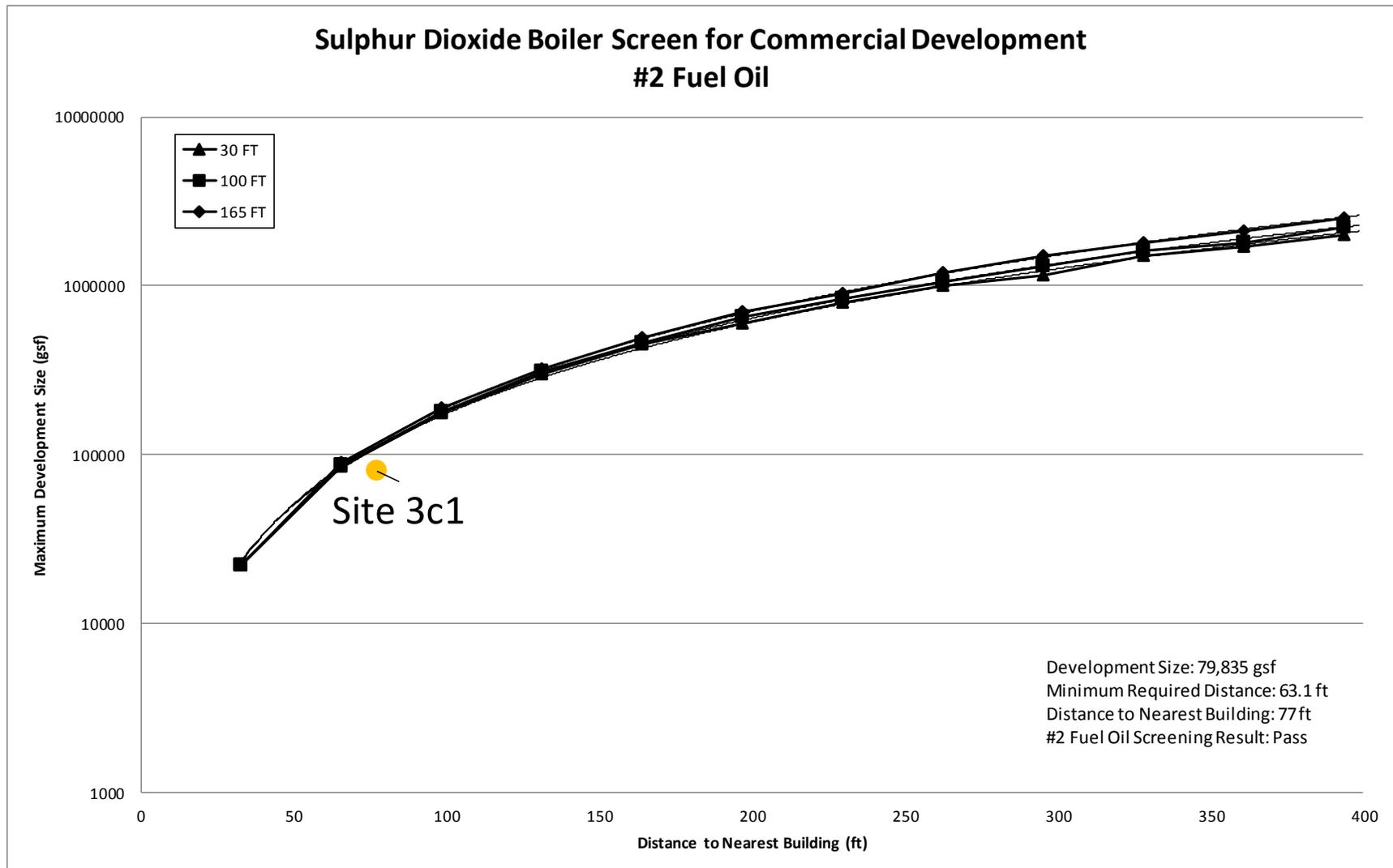


Figure A.6-5 #2 Fuel Oil HVAC Screening Analysis for Prototypical Site 3c2

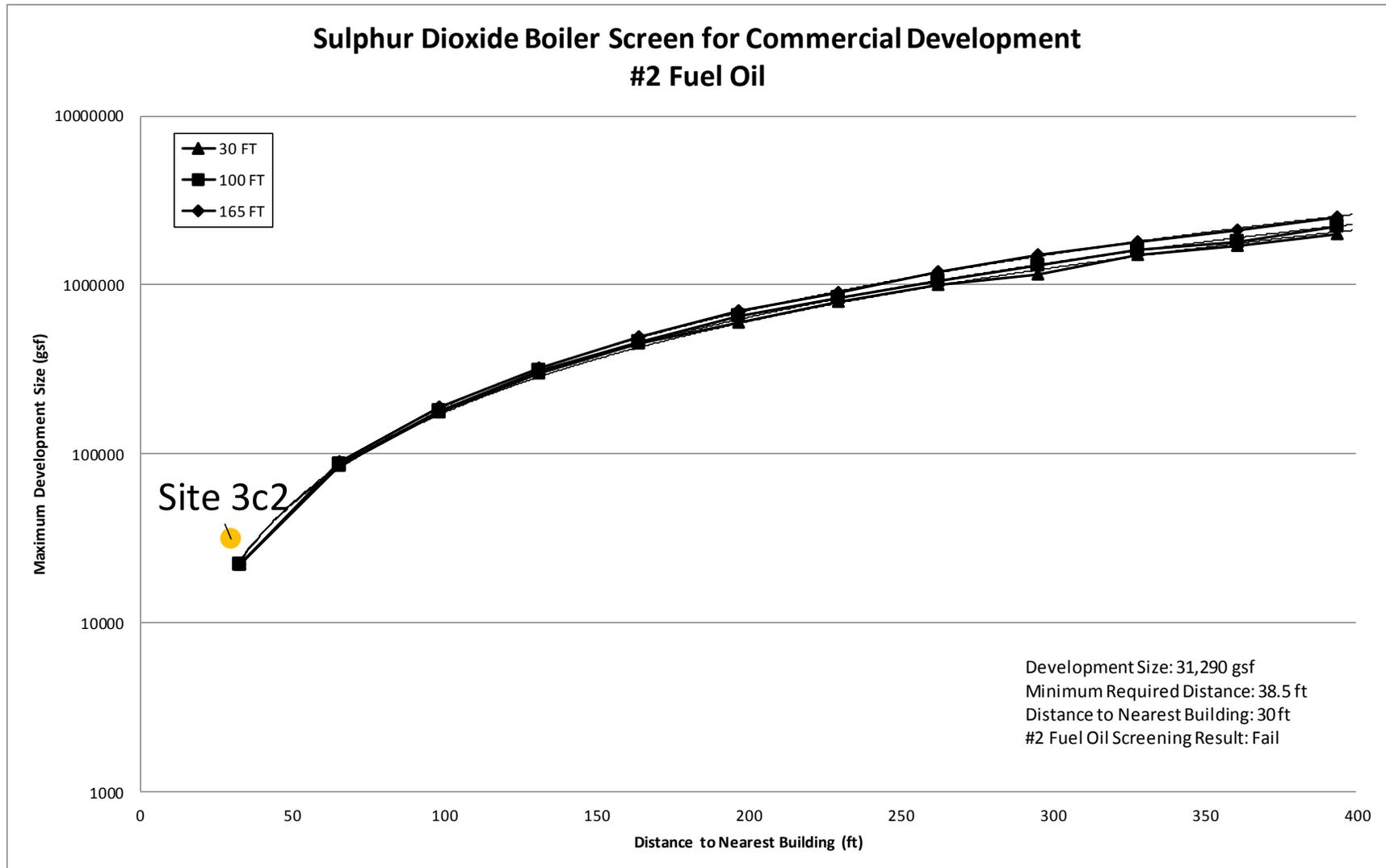


Figure A.6-6 #2 Fuel Oil HVAC Screening Analysis for Prototypical Site 3 (cumulative)

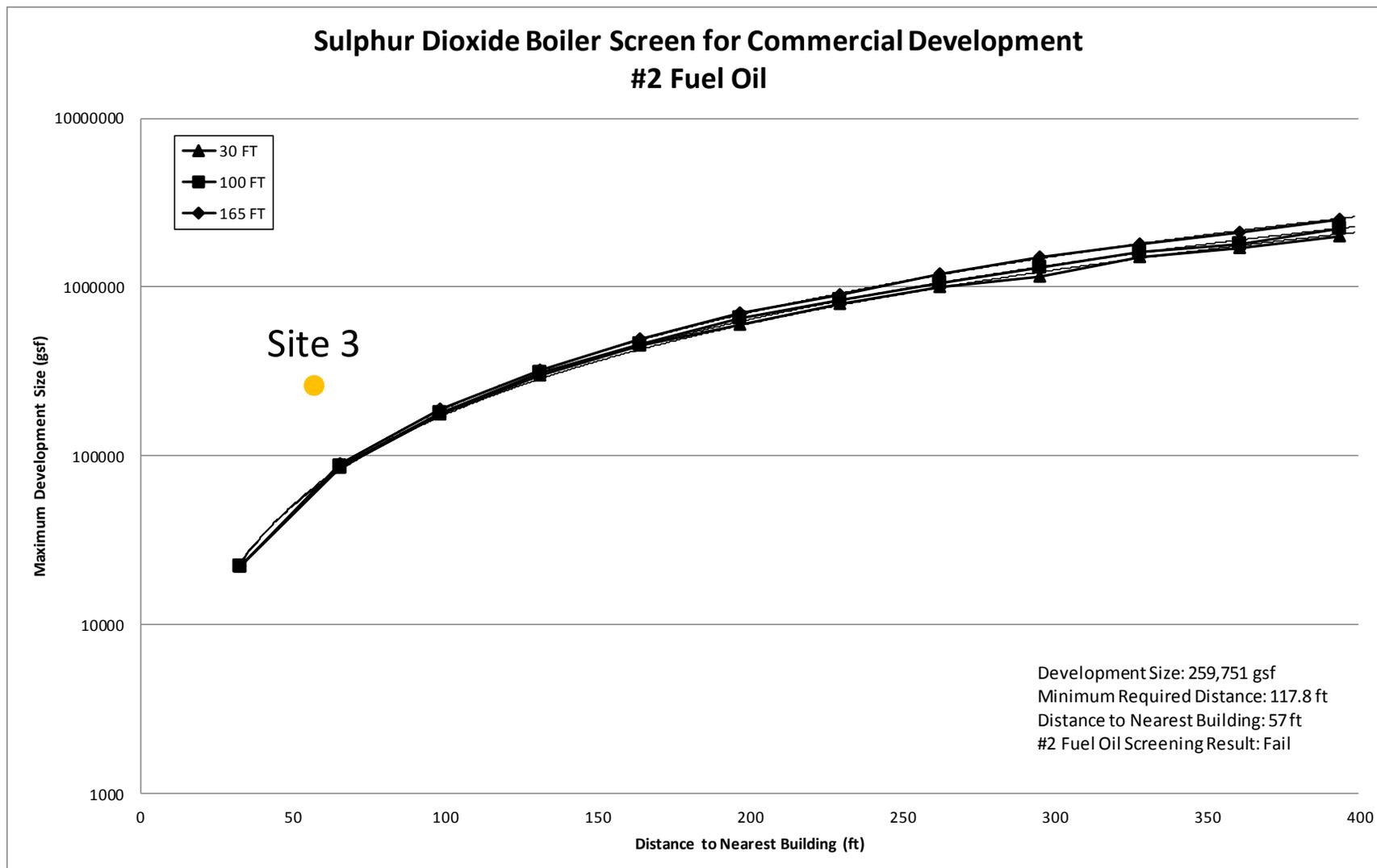


Figure A.6-7 #2 Fuel Oil HVAC Screening Analysis for Prototypical Site 5

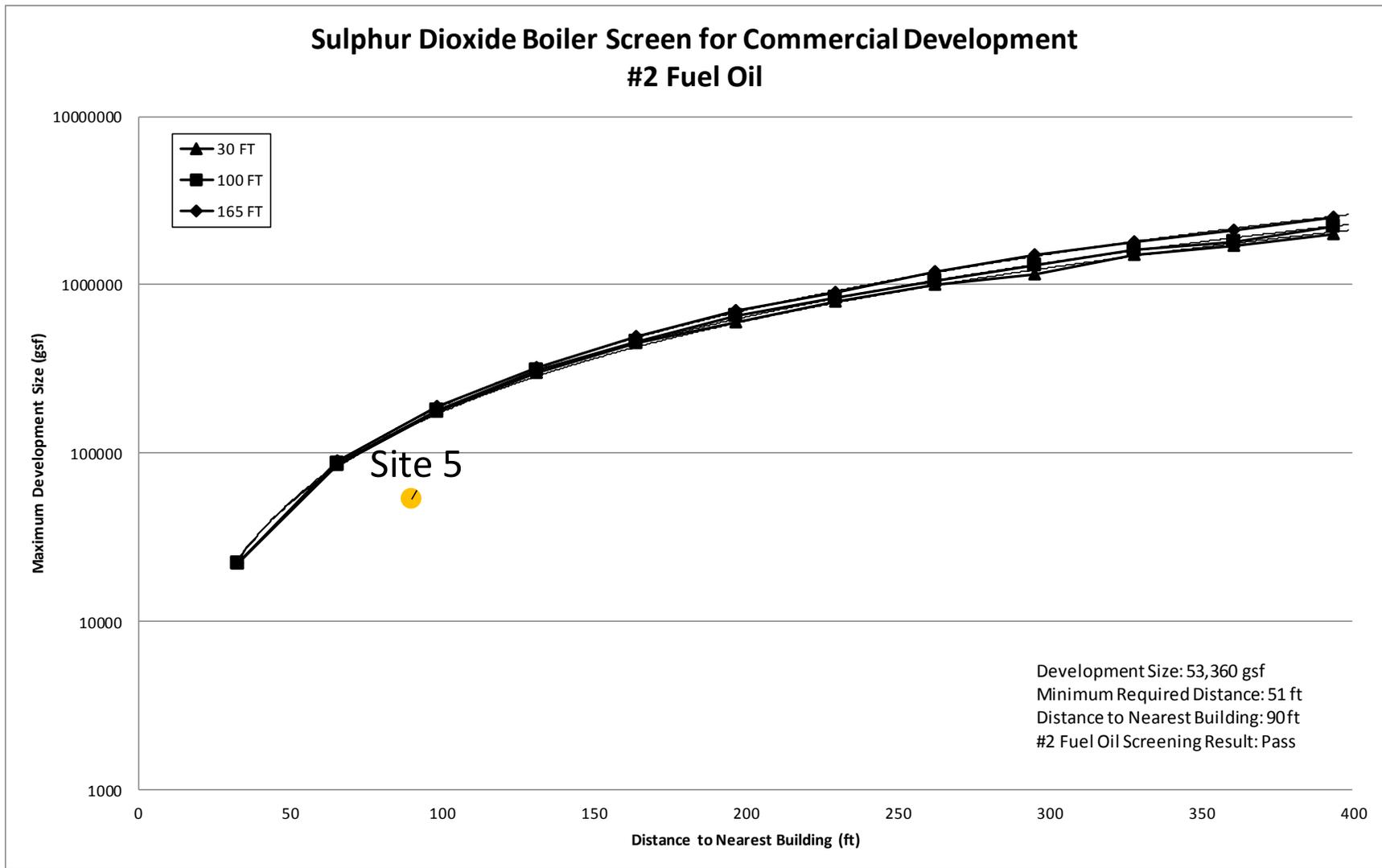


Figure A.6-8 #2 Fuel Oil HVAC Screening Analysis for Prototypical Site 6

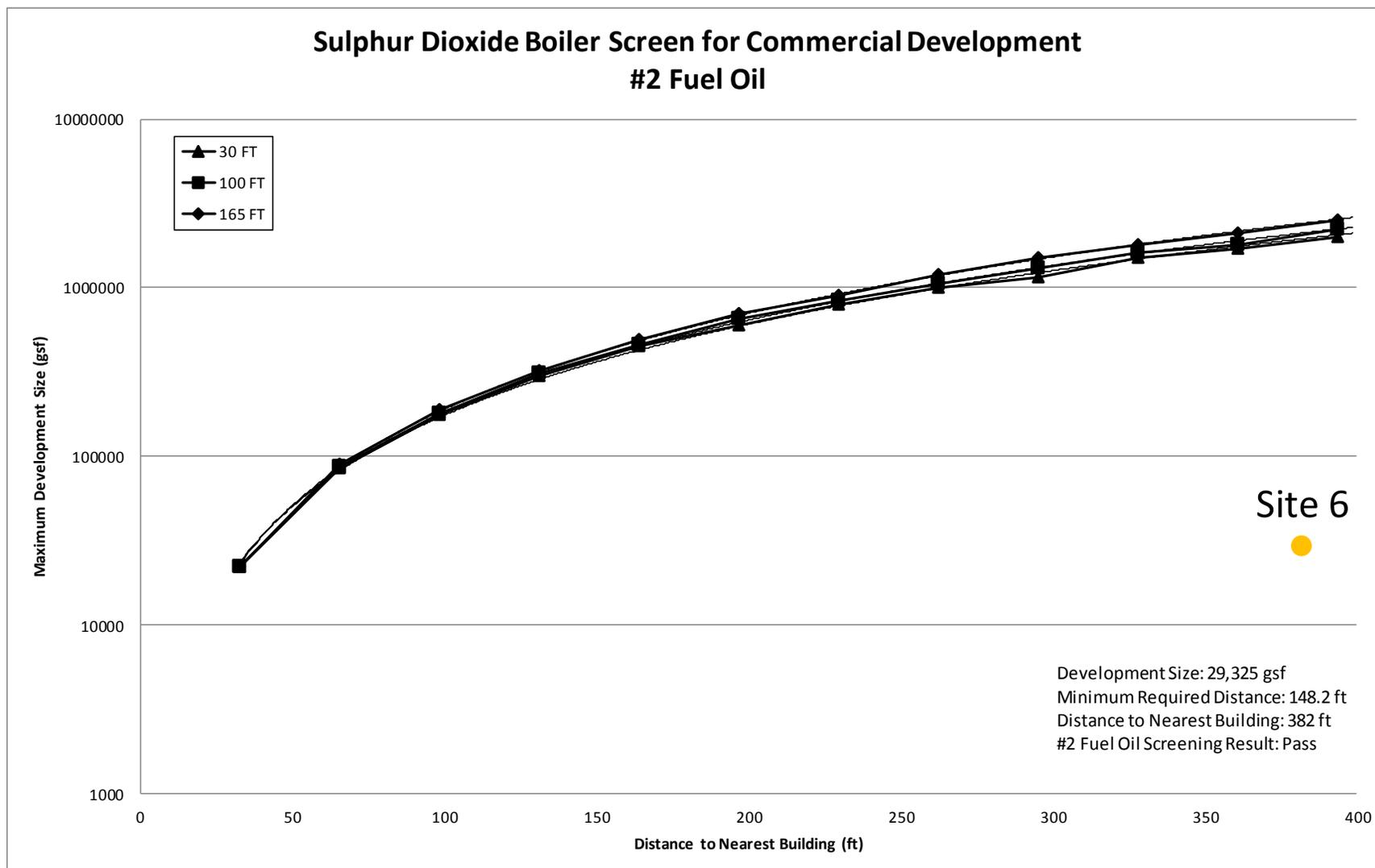


Figure A.6-9 #2 Fuel Oil HVAC Screening Analysis for Prototypical Site 7

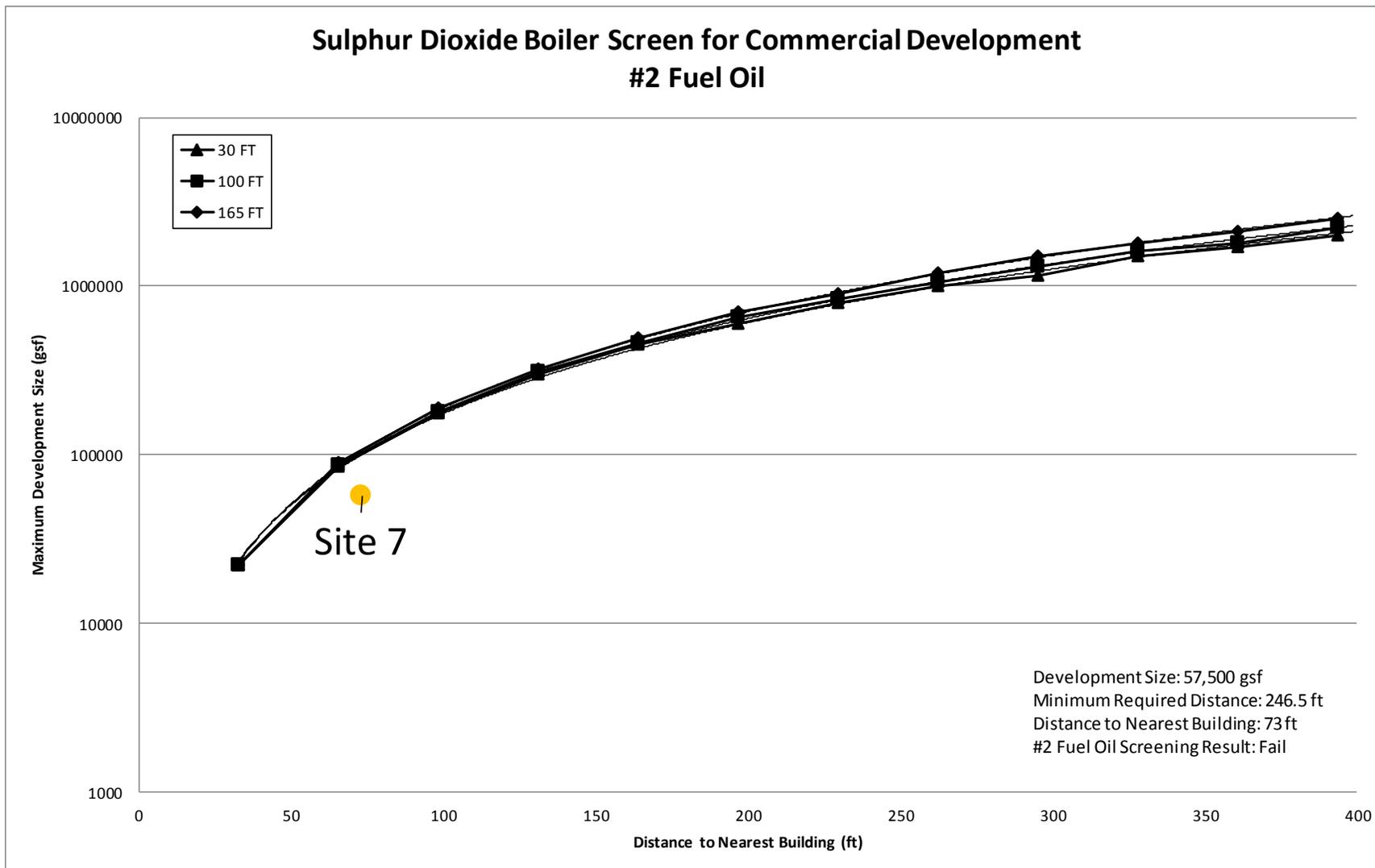


Figure A.6-10 Natural Gas HVAC Screening Analysis for Prototypical Sites 3a and 3b (cumulative)

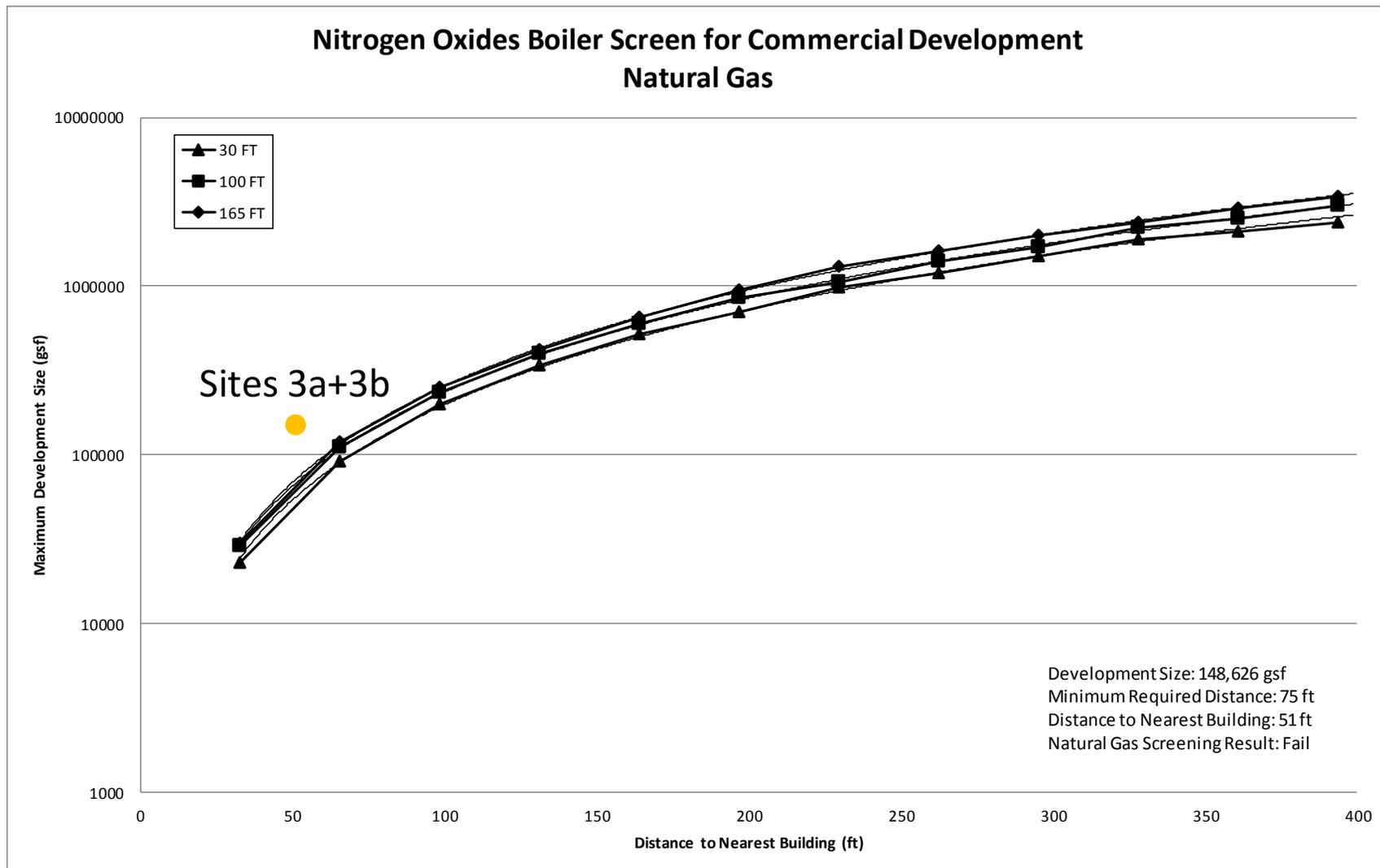


Figure A.6-11 Natural Gas HVAC Screening Analysis for Prototypical Site 3c

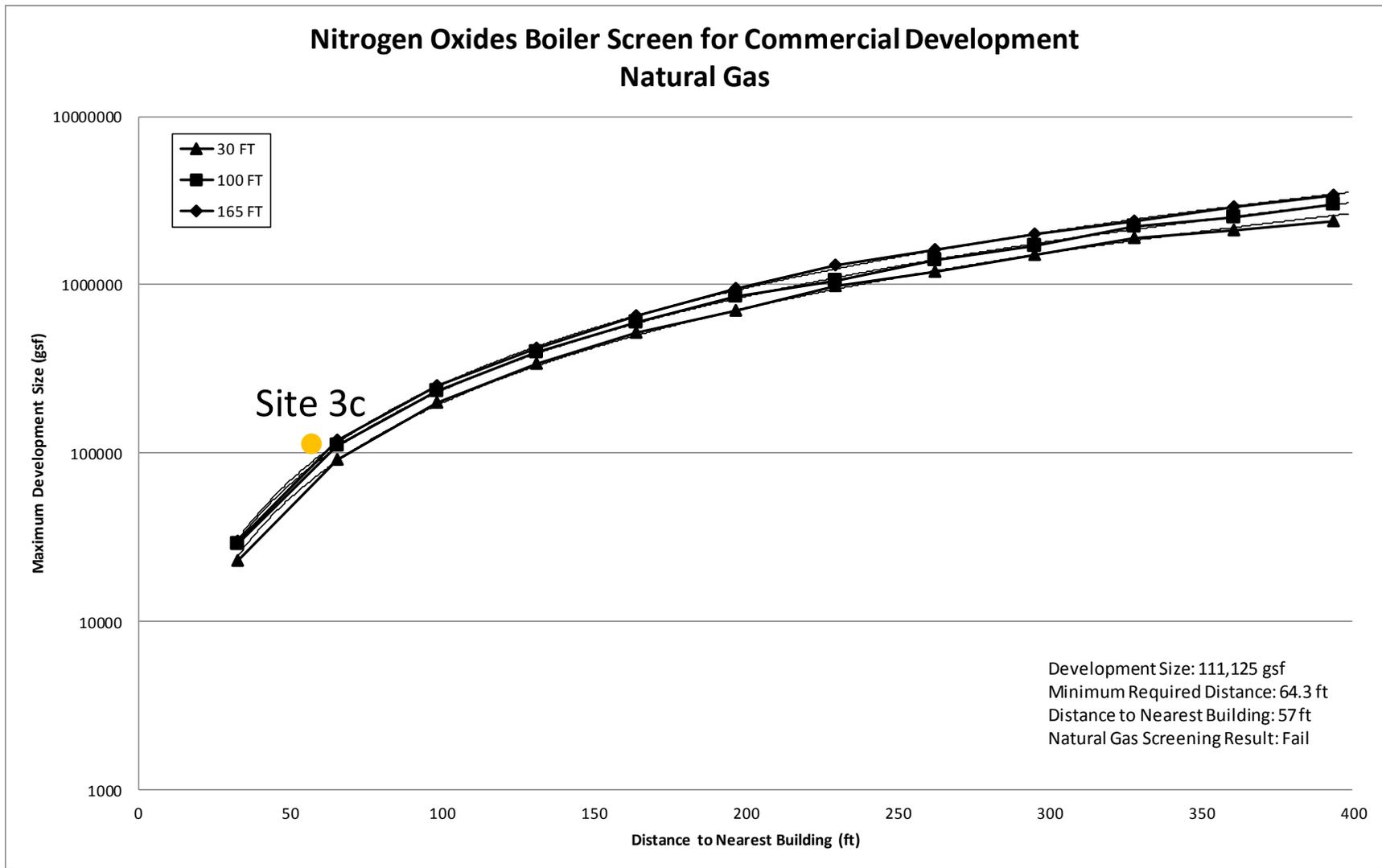


Figure A.6-12 Natural Gas HVAC Screening Analysis for Prototypical Site 3c2

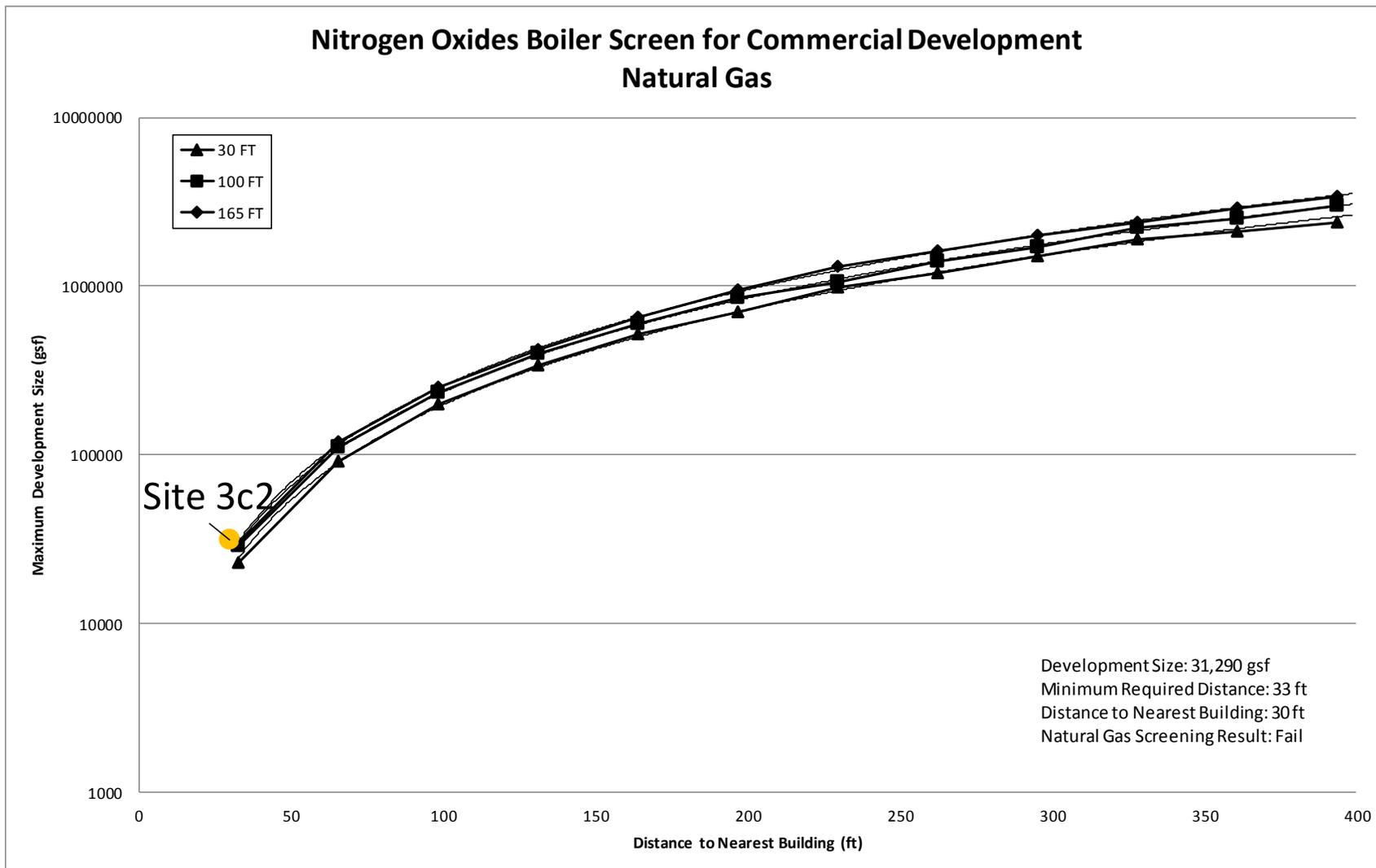


Figure A.6-13 Natural Gas HVAC Screening Analysis for Prototypical Site 3 (cumulative)

