



# Appendix 3.6-3

## Stationary Source Analysis

Sands New York Integrated Resort

10/7/2024

Total Fuel Consumption - No. of days: 365  
 HHV of natural gas (btu/scf): 1020

AP-42 Table 1.4-1, natural gas energy content =1020 Btu/scf

Source Description	Peak Hourly Consumption	Source Capacity	Exhaust Temperature	Exhaust Diameter	Exhaust Flowrate	Exhaust Velocity	Exhaust Velocity
	CFH	(MMBtu/hr)	(F)	(ft)	(CFM)	(ft/min)	(m/s)
Kitchen Exhaust	1,024	1	400	1.5	2,000	1,132	5.75
Kitchen Exhaust	8,194	8	400	4	16,000	1,273	6.47
Kitchen Exhaust	8,194	8	400	4	16,000	1,273	6.47
Kitchen Exhaust	5,121	5	400	3	10,000	1,415	7.19
Kitchen Exhaust	2,048	2	400	2	4,000	1,273	6.47
Kitchen Exhaust	2,048	2	400	2	4,000	1,273	6.47
Kitchen Exhaust	2,048	2	400	2	4,000	1,273	6.47
Kitchen Exhaust	5,121	5	400	3	10,000	1,415	7.19
Kitchen Exhaust	2,304	2	400	2	4,500	1,432	7.28
Kitchen Exhaust	2,048	2	400	2	4,000	1,273	6.47
Kitchen Exhaust	2,048	2	400	2	4,000	1,273	6.47
					78,500		

Gas Flowrate 40,200 CFH Peak demand based on letter from JBB to National Grid

Source Description	Pollutant	Emission Factors (lb/10 <sup>6</sup> scf)
Kitchen Exhaust	NO <sub>2</sub>	61
	PM <sub>2.5</sub>	7.6

EF developed for Broilers from: <https://www.energy.ca.gov/sites/default/files/2021-05/CEC-500-2021-021.pdf>

AP-42 Table 1.4-2, filterable and condensable PM.

Building Description	Exhaust Height	1-hr NOx ER	Annual NOx ER	24-hr and Annual PM <sub>2.5</sub> ER	Exhaust Height	Temperature <sup>1</sup>	Velocity <sup>1</sup>	Exhaust Diameter <sup>1</sup>
	(ft)	(g/s)	(g/s)	(g/s)	(m)	(K)	(m/s)	(m)
Kitchen Exhaust	60.00	7.83E-03	3.92E-03	4.90E-04	18	478	5.7	0.457
Kitchen Exhaust	60.00	6.27E-02	3.13E-02	3.92E-03	18	478	6.5	1.219
Kitchen Exhaust	60.00	6.27E-02	3.13E-02	3.92E-03	18	478	6.5	1.219
Kitchen Exhaust	60.00	3.92E-02	1.96E-02	2.45E-03	18	478	7.2	0.914
Kitchen Exhaust	60.00	1.57E-02	7.83E-03	9.81E-04	18	478	6.5	0.610
Kitchen Exhaust	60.00	1.57E-02	7.83E-03	9.81E-04	18	478	6.5	0.610
Kitchen Exhaust	60.00	1.57E-02	7.83E-03	9.81E-04	18	478	6.5	0.610
Kitchen Exhaust	60.00	3.92E-02	1.96E-02	2.45E-03	18	478	7.2	0.914
Kitchen Exhaust	60.00	1.76E-02	8.81E-03	1.10E-03	18	478	7.3	0.610
Kitchen Exhaust	60.00	1.57E-02	7.83E-03	9.81E-04	18	478	6.5	0.610
Kitchen Exhaust	60.00	1.57E-02	7.83E-03	9.81E-04	18	478	6.5	0.610

Notes:

<sup>1</sup> Stack diameter and temperature are based on typical values found online. The exhaust velocity was calculated based on flowrate data provided by the MEP.

Use maximum ER for kitchen appliances from: <https://www.energy.ca.gov/sites/default/files/2021-05/CEC-500-2021-021.pdf>

Broilers		
NOx	25	lb/yr
Heat input	100,000	BTU/hr
	4,200	hr/year
	420,000,000	BTU/yr
	411,765	scf/yr
	60.7	lb/1E6 scf

## Sands New York Integrated Resort

### Results Summary

Pollutant	Averaging Time	Predicted Concentration ( $\mu\text{g}/\text{m}^3$ )	Background ( $\mu\text{g}/\text{m}^3$ )	Total ( $\mu\text{g}/\text{m}^3$ )	Impact Criterion ( $\mu\text{g}/\text{m}^3$ )	Criterion Type
NO <sub>2</sub>	1-Hour	11.58	97.0	109	188	NAAQS
	Annual	0.37	25.7	26.1	100	NAAQS
PM <sub>2.5</sub>	24-Hour	0.5	15.2	1.5	35.0	NAAQS
	Annual	0.06	5.9	1.1	9.0	NAAQS

#### Notes

Annual NO<sub>2</sub> concentrations were estimated using a NO<sub>2</sub>/NO<sub>x</sub> conversion ratio of 0.75