MEMORANDUM

TO: *Patti Goldman*
Ashley Bennett
Molly Tack-Hooper
Keri Powell

FROM: *Todd Cloud*

RE: *NAAQS Modeling*
Owens-Brockway Portland Operations

DATE: *June 18, 2021 (Revised)*

1.1 Introduction

Owens-Brockway Glass Container, Inc. (Owens-Brockway) owns and operates a glass manufacturing plant located at 9710 NE Glass Plant Road, Portland, Oregon 97220 (Multnomah County). Air emissions from the site are currently authorized by Title V Operating Permit No. 26-1876-TV-01 most recently issued by the Oregon Department of Environmental Quality (ODEQ) in December 2019. Modeled emissions of particulate matter less than 10 microns (PM10), particulate matter less than 2.5 microns (PM2.5), oxides of nitrogen (NOX), and sulfur dioxide (SO2) from the Owens-Brockway Portland operations indicate possible exceedances of one or more National Ambient Air Quality Standards (NAAQS). The modeled exceedances arise when Furnaces A and D are modeled individually and collectively on both an actual and potential basis. This memorandum summarizes the air dispersion modeling procedures employed and the results obtained.

1.2 Information Sources

- Owens-Brockway Glass Container, Inc., *Title V Air Permit No. 26-1876-TV-01* (December 2019)
- Environmental Resources Management (ERM), *Air Dispersion Modeling Protocol, Owens-Brockway Glass Container (O-B) – Portland, Oregon*, Project 0506432 (July 2019)
- Montrose Air Quality Services, *Source Test Report – 2019 Compliance Testing (Civil Penalty Order Response), Furnaces "A" and "D"*, Document Number W006AS-596331-RT-88R1 (July 2019; Revised August 2019)
- Thomas Rhodes, State of Oregon, Department of Environmental Quality, *Memorandum: Source Test Review Report – Owens-Brockway Glass Container* (October 2019)
- Montrose Air Quality Services, *Source Test Report – 2020 Compliance Testing, Furnace A (GM1)*, Document Number W006AS-715855-RT-785 (May 2020)
- Montrose Air Quality Services, *Source Test Report – 2020 Compliance Testing, Furnace D Color Change – Amber Glass*, Document Number W006AS-760936-RT-1054R1 (October 2020; Revised November 2020)

1.3 Model Selection

All air dispersion modeling assessments were performed using the most recent version of the AERMOD modeling system (version 16216r). AERMOD is the EPA-approved model for estimating the short range (less than 50 kilometers) dispersion of air emissions from stationary sources. All modeling efforts were conducted in strict accordance with the procedures detailed in 40 Code of Federal Regulations (CFR) Part 51, Appendix W, *Guideline on Air Quality Models*.

1.4 Scope of Review

The relevant NAAQS are summarized in Table 1 according to pollutant and averaging period. In general, the Table 1 ambient concentrations represent the inhalation exposure (over various averaging periods) of a human population (including sensitive subgroups) above which there is likely to be deleterious effects to human health and welfare. Potential PM10, PM2.5, NOX, and SO2 emissions from the Owens-Brockway Portland operations were first modeled in accordance with the procedures detailed below. Based on the most recent stack test reports, CO emissions were below detection limits and were not modeled. The modeled impacts (added to appropriate background concentrations) were then compared against the applicable NAAQS in the following manners:

- "High second high" (H2H) modeled impacts were utilized for the 3-hour SO2 assessment;
- "High fourth high" (H4H) modeled impacts (averaged over the 5-year dataset) were utilized for the 1-hour SO2 assessment;
- "High sixth high" (H6H) modeled impacts (averaged over the 5-year dataset) were utilized for the 24-hour PM10 assessment; and
- "High eighth high" (H8H) modeled impacts (averaged over the 5-year dataset) were utilized for the 24-hour PM2.5 and 1-hour NO2 assessments.

TABLE 1
SCOPE OF REVIEW SUMMARY

Pollutant	*Period*	*Metric*	*Citation*	*NAAQS (ug/m3)*	*Background (ug/m3)*	*Monitor ID [5]*
PM10	*24-hour*	*H6H impact/5*	*[1]*	*150*	*29*	*410510080*
PM2.5	*24-hour*	*H8H impact/5*	*[1]*	*35*	*20*	*410670005*
	Annual	*MAX impact*	*[2]*	*12*	*6.5*	*410670005*
NO2	*1-hour*	*H8H impact/5*	*[3]*	*188*	*70*	*410670005*
	Annual	*MAX impact*	*[2]*	*100*	*11*	*410670005*
SO2	*1-hour*	*H4H impact/5*	*[4]*	*196*	*12*	*410512011*
	3-hour	*H2H impact*	*[2]*	*1,300*	*4*	*410512011*

[1] EPA Guidance Memo dated 5/20/2014
[2] 40 CFR Part 60, Appendix W, Section 7.2.1.1
[3] EPA Guidance Memo dated June 29, 2010
[4] EPA Guidance Memo dated August 23, 2010
[5] https://www.epa.gov/outdoor-air-quality-data/monitor-values-report. 24-hour SO2 value used for 3-hour assessment.

1.5 Coordinate System

The locations of emission sources, structures, and receptors were represented in the Universal Transverse Mercator (UTM) coordinate system. This coordinate system utilizes coordinates measured in north meters (measured from the equator) and east meters (measured from the central meridian of each zone set to 500 kilometers). The central location of the Owens-Brockway Portland operations is approximately 533,944 meters East and 5,045,654 meters North in UTM Zone 10.

1.6 Receptor Grids

The dispersion modeling efforts employed two (2) receptor sets. The first receptor set was arranged at fifty (50) meter spacing along the property line of the Owens-Brockway Portland operations. The second receptor set was arranged at one hundred (100) meter spacing extending two (2) kilometers from the approximate center of the Owens-Brockway Portland operations. These two receptor grids, in terms of both receptor density and distance, captured the maximum impacts for all pollutants and all averaging periods under consideration.

1.7 Terrain

AERMAP (version 11103) was employed to ensure accurate impact estimation given localized variations in terrain. GEOTIFF 1/3 arc second USGS National Elevation Dataset (NED) elevation files from the Multi-Resolution Land Characteristics (MRLC) Consortium website were not available for this assessment. Instead, elevations were imported, extracted, and interpolated using United States Geological Survey (USGS) Digital Elevation Model (DEM) 7.5-minute native format terrain files. The resulting receptor-specific elevations assigned by AERMAP were spot checked against USGS maps for accuracy.

1.8 Meteorological Data

All modeling efforts were performed using the most recently available five years (2013 to 2017) of meteorological data from Portland, Oregon (surface station 24229) and Salem, Oregon (upper air station 24232) provided by the National Weather Service (NWS). The raw data was processed using AERSURFACE (version 20060), AERMINUTE (version 15272), and AERMET (version 19191) into AERMOD-ready surface (SFC) and profile (PFL) datasets. Tables 2 through 5 provide additional information.

TABLE 2
HOURLY SURFACE STATION MET DATA

Parameter	*Value*
Surface Station Name	*PORTLAND INTL ARPT, OR*
Latitude, Longitude	*45.59571 N, 122.60918 W*
Station ID (WBAN)	*24229*
ASOS Station?	*Yes*
File Format	*NCDC TD-3505 (ISHD)*
Base Elevation	*32.6 m*
Adjustment to Local Time	*8 hours*
Anemometer Height	*10 m*

TABLE 3
1-MINUTE & 5-MINUTE ASOS WIND DATA

Parameter	*Value*
AERMINUTE Data Used?	*Yes*
Station Name	*PORTLAND INTL ARPT, OR*
Latitude, Longitude	*45.59571 N, 122.60918 W*
Station Code	*PDX*
Station ID (WBAN)	*24229*
File Format	*NCDC TD-6405*
IFW Installation Date	*February 1, 2007*

TABLE 4
UPPER AIR STATION MET DATA

Parameter	*Value*
Upper Air Station Name	*SALEM, OR*
Latitude, Longitude	*44.92 N, 123.02 W*
Station ID (WBAN)	*24232*
File Format	*FSL*
Adjustment to Local Time	*8 hours*

TABLE 5
AERSURFACE PARAMETERS

Parameter	*Value*
Land Use Data File	*USGS NLCD 2016 – GeoTIFF Format*
Center Lat/Long	*45.59571 N, 122.60918 W*
Datum	*NAD83*
Surface Roughness Radius	*1km*
Number of Sectors	*12 sectors of 30° (starting at 0°)*
Period	*Monthly*
Surface Moisture	*Year 2013: Dry*
	Year 2014: Average
	Year 2015: Average
	Year 2016: Wet
	Year 2017: Wet
Other Settings	*Continuous Snow: No*
	Airport Site: Yes
	Airport Sectors: 3, 4, 5, 6, 7, 8, 9, 10
	Arid Region: No

1.9 Downwash

The presence of buildings can affect plume rise and the initial dispersion of pollutants within the atmosphere. Turbulent wake zones can be created around buildings that force pollutants to the ground ("downwash") instead of allowing them to rise freely within the atmosphere. Exhaust point proximity to nearby structures was evaluated to determine if discharges may become caught in the turbulent wakes of these structures. For all analyses, the wind direction-specific building dimensions were calculated using the algorithms of the Building Profile Input Program (BPIP) PRIME (version 04274).

1.10 Modeled Sources

Tables 6 and 7 summarize the modeled sources and exhaust parameters. Any discrepancies between the assumptions underlying the facility's permit or the Cleaner Air Oregon modeling protocol and the data reflected in the facility's test reports were resolved in favor of the relevant test reports.

TABLE 6
MODELED SOURCES/2019 TEST DATA

ID	*Description*	*UTM E (m)*	*UTM N (m)*	*E (m)*	*H (m)*	*D (m)*	*T (K)*	*V (m/s)*
GM1-1	*Furnace A, Stack 1*	*534043*	*5045531*	*10*	*21.49*	*1.12*	*454*	*27.1*
GM1-2	*Furnace A, Stack 2*	*534047*	*5045543*	*10*	*21.49*	*1.12*	*484*	*25.4*
GM2-1	*Furnace D, Stack 1*	*534053*	*5045579*	*10*	*31.67*	*0.74*	*649*	*17.3*

UTM = Universal Transverse Mercator coordinate system
E = Stack elevation in meters (m)
H = Stack height (m)
D = Stack diameter (m)
T = Exhaust temperature in Kelvin (K)
V = Stack gas velocity in meters per second (m/s)

TABLE 7
MODELED SOURCES/2020 TEST DATA

ID	*Description*	*UTM E (m)*	*UTM N (m)*	*E (m)*	*H (m)*	*D (m)*	*T (K)*	*V (m/s)*
GM1-1	*Furnace A, Stack 1*	*534043*	*5045531*	*10*	*21.49*	*1.12*	*469*	*29.7*
GM1-2	*Furnace A, Stack 2*	*534047*	*5045543*	*10*	*21.49*	*1.12*	*455*	*26.7*
GM2-1	*Furnace D, Stack 1*	*534053*	*5045579*	*10*	*31.67*	*0.74*	*649*	*17.0*

UTM = Universal Transverse Mercator coordinate system
E = Stack elevation in meters (m)
H = Stack height (m)
D = Stack diameter (m)
T = Exhaust temperature in Kelvin (K)
V = Stack gas velocity in meters per second (m/s)

1.11 Modeled Emissions – Actuals

Tables 8 and 9 summarize the modeled emissions based on actual test data. All PM10 was assumed to be PM2.5. Consistent with the October 2019 agency test report review, Furnace A

emissions were modeled at half the emission rate measured during the actual test to reflect airflow thirty (30) minutes out of every hour. CO emissions were below detection limits and were not modeled.

TABLE 8
MODELED EMISSIONS – 2019 TEST DATA

ID	Description	Rating (tph)	PM10 (lb/hr)	PM2.5 (lb/hr)	NOX (lb/hr)	SO2 (lb/hr)
GM1-1	Furnace A, Stack 1	8.4	8.9	8.9	33	28
GM1-2	Furnace A, Stack 2		8.8	8.8		
GM2-1	Furnace D, Stack 1	7.4	6.3	6.3	27	23

TABLE 9
MODELED EMISSIONS – 2020 TEST DATA

ID	Description	Rating (tph)	PM10 (lb/hr)	PM2.5 (lb/hr)	NOX (lb/hr)	SO2 (lb/hr)
GM1-1	Furnace A, Stack 1	9.2	4.7	4.7	39.4	35.8
GM1-2	Furnace A, Stack 2		5.6	5.6	28.7	26.4
GM2-1	Furnace D, Stack 1	7.4	5.3	5.3	26.4	20.9

1.12 Modeled Emissions – Potentials

Tables 10 and 11 summarize the modeled emissions based on each furnace's potential to emit. All PM10 was assumed to be PM2.5. Consistent with the October 2019 agency test report review, Furnace A emissions were modeled at half the emission rate measured during the actual test to reflect airflow thirty (30) minutes out of every hour. CO emissions were below detection limits and were not modeled.

TABLE 10
MODELED EMISSIONS – POTENTIAL TO EMIT (2019 TEST DATA)

ID	Description	Rating (tph)	PM10 (lb/hr)	PM2.5 (lb/hr)	NOX (lb/hr)	SO2 (lb/hr)
GM1-1	Furnace A, Stack 1	11.3	10.1	10.1	37.4	31.7
GM1-2	Furnace A, Stack 2		10.0	10.0	37.4	31.7
GM2-1	Furnace D, Stack 1	9.4	6.7	6.7	28.8	24.6

TABLE 11
MODELED EMISSIONS – POTENTIAL TO EMIT (2020 TEST DATA)

ID	Description	Rating (tph)	PM10 (lb/hr)	PM2.5 (lb/hr)	NOX (lb/hr)	SO2 (lb/hr)
GM1-1	Furnace A, Stack 1	11.3	5.7	5.7	48.2	43.8
GM1-2	Furnace A, Stack 2		6.9	6.9	35.1	37.2
GM2-1	Furnace D, Stack 1	9.4	6.7	6.7	33.4	26.4

1.13 Results – Actual Emissions/2019 Test

Tables 11, 12, and 13 summarize the ***ACTUAL*** PM10, PM2.5, NOX, and SO2 ambient impacts from Owens-Brockway Portland operations (added to appropriate background concentrations) based on ***2019*** test data. The results are presented for Furnace A and D, Furnace A only, and Furnace D only. High-first-high (H1H) impacts are also provided as well as the number of impacts that exceed the relevant NAAQS (measured in receptor-hours).

TABLE 11
FURNACE A + D
ACTUAL EMISSIONS/2019 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3)	Total (ug/m3)	NAAQS (ug/m3)	%	H1H (ug/m3)	Impacts > NAAQS
PM10	24-hour	H6H/5	25	29	54	150	36%	—	—
PM2.5	24-hour	H8H/5	18	20	38	35	110%	28	28
	Annual	MAX	3.6	6.5	10.1	12	84%	—	—
NOX	1-hour	H8H/5	245	70	315	188	168%	305	1,047
	Annual	MAX	15	11	26	100	26%	—	—
SO2	1-hour	H4H/5	263	12	275	196	140%	271	165
	3-hour	H2H	198	4	202	1,300	16%	—	—

TABLE 12
FURNACE A ONLY
ACTUAL EMISSIONS/2019 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3)	Total (ug/m3)	NAAQS (ug/m3)	%	H1H (ug/m3)	Impacts > NAAQS
PM10	24-hour	H6H/5	18	29	47	150	32%	—	—
PM2.5	24-hour	H8H/5	11	20	31	35	88%	—	—
	Annual	MAX	2.1	6.5	8.6	12	72%	—	—
NOX	1-hour	H8H/5	155	70	225	188	120%	170	122
	Annual	MAX	8	11	19	100	19%	—	—
SO2	1-hour	H4H/5	145	12	157	196	80%	—	—
	3-hour	H2H	109	4	113	1,300	9%	—	—

TABLE 13
FURNACE D ONLY
ACTUAL EMISSIONS/2019 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3)	Total (ug/m3)	NAAQS (ug/m3)	%	H1H (ug/m3)	Impacts > NAAQS
PM10	24-hour	H6H/5	12	29	41	150	28%	—	—
PM2.5	24-hour	H8H/5	10	20	30	35	85%	—	—
	Annual	MAX	2.2	6.5	8.7	12	72%	—	—
NOX	1-hour	H8H/5	238	70	308	188	164%	299	42
	Annual	MAX	8	11	19	100	19%	—	—
SO2	1-hour	H4H/5	248	12	260	196	133%	270	1
	3-hour	H2H	197	4	201	1,300	15%	—	—

1.14 Results – Actual Emissions/2020 Test

Tables 14, 15, and 16 summarize the ***ACTUAL*** PM10, PM2.5, NOX, and SO2 ambient impacts from Owens-Brockway Portland operations (added to appropriate background concentrations) based on ***2020*** test data. The results are presented for Furnace A and D, Furnace A only, and Furnace D only. High-first-high (H1H) impacts are also provided as well as the number of impacts that exceed the relevant NAAQS (measured in receptor-hours).

TABLE 14
FURNACE A + D
ACTUAL EMISSIONS/2020 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3)	Total (ug/m3)	NAAQS (ug/m3)	%	H1H (ug/m3)	Impacts > NAAQS
PM10	24-hour	H6H/5	17	29	46	150	31%	—	—
PM2.5	24-hour	H8H/5	13	20	33	35	94%	—	—
	Annual	MAX	2.6	6.5	9.1	12	76%	—	—
NOX	1-hour	H8H/5	242	70	312	188	166%	301	1,032
	Annual	MAX	14	11	25	100	25%	—	—
SO2	1-hour	H4H/5	241	12	253	196	129%	251	196
	3-hour	H2H	183	4	187	1,300	14%	—	—

TABLE 15
FURNACE A ONLY
ACTUAL EMISSIONS/2020 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3)	Total (ug/m3)	NAAQS (ug/m3)	%	H1H (ug/m3)	Impacts > NAAQS
PM10	24-hour	H6H/5	11	29	40	150	26%	—	—
PM2.5	24-hour	H8H/5	6	20	26	35	75%	—	—
	Annual	MAX	1.2	6.5	7.7	12	64%	—	—
NOX	1-hour	H8H/5	155	70	225	188	120%	166	120
	Annual	MAX	8	11	19	100	19%	—	—
SO2	1-hour	H4H/5	164	12	176	196	90%	—	—
	3-hour	H2H	126	4	130	1,300	10%	—	—

TABLE 16
FURNACE D ONLY
ACTUAL EMISSIONS/2020 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3)	Total (ug/m3)	NAAQS (ug/m3)	%	H1H (ug/m3)	Impacts > NAAQS
PM10	24-hour	H6H/5	11	29	40	150	26%	—	—
PM2.5	24-hour	H8H/5	8	20	28	35	80%	—	—
	Annual	MAX	1.8	6.5	8.3	12	70%	—	—
NOX	1-hour	H8H/5	235	70	305	188	162%	299	42
	Annual	MAX	9	11	20	100	20%	—	—
SO2	1-hour	H4H/5	231	12	243	196	124%	251	1
	3-hour	H2H	182	4	186	1,300	14%	—	—

1.15 Results – Potential Emissions (2019 Data)

Tables 17, 18, and 19 summarize the ***POTENTIAL*** PM10, PM2.5, NOX, and SO2 ambient impacts from Owens-Brockway Portland operations (added to appropriate background concentrations) extrapolated from ***2019*** test data. The results are presented for Furnace A and D, Furnace A only, and Furnace D only. High-first-high (H1H) impacts are also provided as well as the number of impacts that exceed the relevant NAAQS (measured in receptor-hours).

TABLE 17
FURNACE A + D
POTENTIAL EMISSIONS DERIVED FROM 2019 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3)	Total (ug/m3)	NAAQS (ug/m3)	%	H1H (ug/m3)	Impacts > NAAQS
PM10	24-hour	H6H/5	33	29	62	150	42%	—	—
PM2.5	24-hour	H8H/5	25	20	45	35	128%	37	74
	Annual	MAX	4.8	6.5	11.3	12	94%	—	—
NOX	1-hour	H8H/5	328	70	398	188	211%	407	1,502
	Annual	MAX	20	11	31	100	31%	—	—
SO2	1-hour	H4H/5	332	12	344	196	176%	343	439
	3-hour	H2H	251	4	255	1,300	20%	—	—

TABLE 18
FURNACE A ONLY
POTENTIAL EMISSIONS DERIVED FROM 2019 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3)	Total (ug/m3)	NAAQS (ug/m3)	%	H1H (ug/m3)	Impacts > NAAQS
PM10	24-hour	H6H/5	25	29	54	150	36%	—	—
PM2.5	24-hour	H8H/5	14	20	34	35	98%	—	—
	Annual	MAX	2.8	6.5	9.3	12	77%	—	—
NOX	1-hour	H8H/5	208	70	278	188	148%	227	472
	Annual	MAX	10	11	21	100	21%	—	—
SO2	1-hour	H4H/5	183	12	195	196	99%	—	—
	3-hour	H2H	138	4	142	1,300	11%	—	—

TABLE 19
FURNACE D ONLY
POTENTIAL EMISSIONS DERIVED FROM 2019 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3)	Total (ug/m3)	NAAQS (ug/m3)	%	H1H (ug/m3)	Impacts > NAAQS
PM10	24-hour	H6H/5	17	29	46	150	30%	—	—
PM2.5	24-hour	H8H/5	13	20	33	35	94%	—	—
	Annual	MAX	2.9	6.5	9.4	12	78%	—	—
NOX	1-hour	H8H/5	318	70	388	188	206%	400	233
	Annual	MAX	13	11	24	100	24%	—	—
SO2	1-hour	H4H/5	314	12	326	196	166%	342	1
	3-hour	H2H	249	4	253	1,300	19%	—	—

1.16 Results – Potential Emissions (2020 Data)

Tables 20, 21, and 22 summarize the ***POTENTIAL*** PM10, PM2.5, NOX, and SO2 ambient impacts from Owens-Brockway Portland operations (added to appropriate background concentrations) extrapolated from ***2020*** test data. The results are presented for Furnace A and D, Furnace A only, and Furnace D only. High-first-high (H1H) impacts are also provided as well as the number of impacts that exceed the relevant NAAQS (measured in receptor-hours).

TABLE 20
FURNACE A + D
POTENTIAL EMISSIONS DERIVED FROM 2020 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3	Total (ug/m3)	NAAQS (ug/m3	%	H1H (ug/m3)	Impacts > NAAQS
PM10	24-hour	H6H/5	21	29	50	150	33%	—	—
PM2.5	24-hour	H8H/5	16	20	36	35	103%	23	19
	Annual	MAX	3.3	6.5	9.8	12	82%	—	—
NOX	1-hour	H8H/5	302	70	372	188	198%	380	1,422
	Annual	MAX	18	11	29	100	29%	—	—
SO2	1-hour	H4H/5	304	12	316	196	161%	318	405
	3-hour	H2H	232	4	236	1,300	18%	—	—

TABLE 21
FURNACE A ONLY
POTENTIAL EMISSIONS DERIVED FROM 2020 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3)	Total (ug/m3)	NAAQS (ug/m3)	%	H1H (ug/m3)	Impacts > NAAQS
PM10	24-hour	H6H/5	13	29	42	150	28%	—	—
PM2.5	24-hour	H8H/5	8	20	28	35	79%	—	—
	Annual	MAX	1.4	6.5	7.9	12	66%	—	—
NOX	1-hour	H8H/5	189	70	256	188	138%	203	336
	Annual	MAX	10	11	21	100	21%	—	—
SO2	1-hour	H4H/5	200	12	212	196	108%	202	85
	3-hour	H2H	154	4	158	1,300	12%	—	—

TABLE 22
FURNACE D ONLY
POTENTIAL EMISSIONS DERIVED FROM 2020 TEST

Pollutant	Period	Metric	Impact (ug/m3)	Back (ug/m3)	Total (ug/m	NAAQS (ug/m3)	%	H1H (ug/m3	Impacts > NAAQS
PM10	24-hour	H6H/5	13	29	42	150	28%	—	—
PM2.5	24-hour	H8H/5	10	20	30	35	87%	—	—
	Annual	MAX	2.3	6.5	8.8	12	74%	—	—
NOX	1-hour	H8H/5	298	70	368	188	196%	376	170
	Annual	MAX	12	11	23	100	23%	—	—
SO2	1-hour	H4H/5	291	12	303	196	155%	318	1
	3-hour	H2H	230	4	234	1,300	18%	—	—