DES
DEPARTMENT OF ENVIRONMENT AND SUSTAINABILITY
air quality desert conservation PROGRAM sustainability

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PART 70 OPERATING PERMIT
TECHNICAL SUPPORT DOCUMENT
(STATEMENT of BASIS)

APPLICATION FOR:
Significant Revision

Application Received: March 30, 2023

SUBMITTED BY:
Broadbent & Associates, Inc.

FOR:
MGM Resorts International
Source: 00825

LOCATION:
3730 South Las Vegas Boulevard
Las Vegas, Nevada 89158

SIC Codes 7011, "Hotels and Motels"
SIC Code 7999, "Amusement and Recreation Services, Not Elsewhere Classified
NAICS Code 721120, "Casino Hotels"
NAICS Code 711310, "Promoters of Performing Arts, Sports, and Similar Events with Facilities"

March 20, 2024

EXECUTIVE SUMMARY

MGM Resorts International (MGMRI) operates under SIC Codes 7011, "Hotels and Motels," and 7999, "Amusement and Recreation Services, Not Elsewhere Classified" and NAICS codes 721120, "Casino Hotels" and 711310, "Promoters of Performing Arts, Sports, and Similar Events with Facilities." MGMRI is located in Clark County, Nevada, on South Las Vegas Boulevard. The permittee is a major source located in Hydrographic Area (HA) 212, the Las Vegas Valley. HA 212 is in attainment for all regulated air pollutants except ozone; effective January 5, 2023, HA 212 was designated as moderate nonattainment for the 2015 ozone National Ambient Air Quality Standards (NAAQS).

MGMRI is permitted under the New Source Review (NSR) regulations as a Prevention of Significant Deterioration (PSD) major stationary source of NO_x and CO, and a minor source of all other regulated pollutants. MGMRI is also a source of greenhouse gasses (GHG). The emission units and activities at the MGMRI properties are divided among 12 properties. Emission units present at this source include natural gas boilers and water heaters, diesel-powered emergency generators and fire pumps, cooling towers, woodworking and surface coating operations, gasoline storage and dispensing equipment, two natural gas turbines, and pyrotechnic equipment.

The following table summarizes the source potential to emit for each regulated air pollutant from all emission units addressed by this Part 70 Operating Permit:

Table 1: Source Potential To Emit and Program Applicability

Pollutant	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAP	Pb	H_2S	GHG[1]
Tons/year	86.39	83.43	788.28	374.76	4.08	75.35	21.59	0	0	605,957.94
Major Source Thresholds (Title V/Categorical)	100	100	100	100	100	100	10/25[2]			75,000

[1]GHG expressed as CO_2e

[2]10 tons for any individual HAP or 25 tons for combination of all HAPs.

DAQ will continue to require the sources to estimate their GHG potential to emit in terms of each individual pollutant (CO_2, CH_4, N_2O, SF_6). The TSD includes these PTEs for informational purposes.

This source is subject to 40 CFR Part 60, Subparts Dc and IIII and 40 CFR Part 63, Subparts ZZZZ and CCCCCC.

DAQ has received delegated authority from the U.S. Environmental Protection Agency to implement the requirements of the Part 70 OP. Based on the information submitted by the applicant, supplemental information provided to the application, and a technical review performed by DAQ staff, the draft Part 70 OP is proposed.

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I. ACRONYMS AND ABBREVIATIONS

Acronym	Term
AQR	Clark County Air Quality Regulation
AST	aboveground storage tank
ATC	Authority to Construct
Avgas	aviation gasoline
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
DAQ	Division of Air Quality
DES	Clark County Department of Environment and Sustainability
DOM	date of manufacture
EPA	U.S. Environmental Protection Agency
EU	emission unit
GDO	gasoline dispensing operation
GHG	greenhouse gas
HAP	hazardous air pollutant
hp	horsepower
kW	kilowatts
MMBtu/hr	Millions of British Thermal Units per Hour
MSP	Minor Source Permit
NAC	Nevada Administrative Code
NAICS	North American Industry Classification System
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_X	nitrogen oxides
NSPS	New Source Performance Standard
OP	Operating Permit
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTE	potential to emit
RICE	reciprocating internal combustion engine
SDS	Safety Data Sheet
SIP	State Implementation Plan
SIC	Standard Industrial Classification
SM80	Synthetic Minor – one or more pollutants exceed 80% of major source threshold
SO_2	sulfur dioxide
UST	underground storage tank
VEE	Visible Emissions Evaluation
VOC	volatile organic compound

II. SOURCE DESCRIPTION

A. PROCESS DESCRIPTION

MGMRI operates multiple resort hotels and casinos and a sports/entertainment center. The properties that have been consolidated for this permit are identified in Table II-A-1. In addition, the permittee operates a public tram that runs between the Mandalay Bay, Excalibur, and Luxor hotels.

Table II-A-1. MGMRI Property Identification

MGM Grand, 3799 S. Las Vegas Boulevard	**Bellagio**, 3600 S. Las Vegas Boulevard
City Center, 3730 S. Las Vegas Boulevard	**Park MGM**, 3770 S. Las Vegas Boulevard
T-Mobile Arena, 3780 S. Las Vegas Boulevard	**New York-New York,** 3790 S. Las Vegas Boulevard
Excalibur, 3850 S. Las Vegas Boulevard	**Luxor**, 3900 S. Las Vegas Boulevard
Mandalay Bay, 3950 S. Las Vegas Boulevard	**The Four Seasons**, 3960 S. Las Vegas Boulevard
The Signature at MGM Grand, 145 E. Harmon Ave.	**The Cosmopolitan of Las Vegas,** 3708 S. Las Vegas Blvd.

B. PERMITTING HISTORY

May 19, 2022: Renewal permit issued.

July 6, 2023: Minor revision permit issued. This permitting action consisted of the addition and removal of miscellaneous boilers at MGM, Excalibur, and Mandalay Bay hotels as well as updating serial numbers for previously permitted boilers.

C. CURRENT PERMITTING ACTION

This permitting action is a consolidation of multiple applications, as outlined below.

March 30, 2023: Significant revision application to incorporate all emission units associated with The Cosmopolitan Hotel and Casino into the Title V operating permit. The Cosmopolitan is currently permitted as a minor source (Source 16101) consisting of five (5) natural gas-fired boilers, three (3) diesel-powered emergency generators, and two (2) multi-celled cooling towers.

The minor source permit also identifies ten (10) natural gas-fired water heaters and three (3) natural gas-fired space heaters, all with heat input ratings below 1.0 MMBtu/hr, as insignificant activities. This is in accordance with AQR 12.1.2(c)(1). In addition, a spray booth is included in the list of insignificant activities. Due to the fact that the spray booth is not an integral part of the source's primary business function, AQR 12.1.2(c)(10) allows for this classification.

Under AQR 12.5, the local regulatory authority for major sources, the three space heaters and the spray booth are able to retain the classification of insignificant activities, pursuant to AQR 12.5.2.5(c) and 12.5.2.5(a)(14), respectively. However, AQR 12.5 does not include a provision to classify a natural gas-fired water heater with heat input ratings below 1.0 MMBtu/hr as an insignificant activity. Therefore, the ten natural gas-fired water heaters must be identified as emission units.

A precedent has been established with previous permitting actions for this source by which small natural gas-fired boilers and water heaters, with heat input ratings less than 1.0 MMBtu/hr, are combined as one emission unit. The emission unit rating for the combined units is defined by adding the total heat input rating for all proposed boilers. As a means to allow the source some flexibility with respect to the number of units that can be included with an individual emission unit identifier, the combined heat input rating for the proposed boilers is increased by ten percent (10%). In accordance with this precedent, the ten natural gas-fired water heaters (each rated as 0.499 MMBtu/hr) is defined as being rated at 5.49 MMBtu/hr. The source PTE is calculated using the latter value.

March 30, 2023: Minor revision application to add and remove boilers identified in Table II-C-1.

Table II-C-1. Changes Requested in March 30, 2023 Minor Revision Application

EU	Description	Location
Add		
MB134 & MB135	1.95 MMBtu Boilers (2)	Mandalay Bay
MB136 – MB139	4.99 MMBtu Boilers (4)	Mandalay Bay
BE194 & BE195	1.5 MMBtu/hr Boilers (2)	Bellagio
BE196 & BE197	3.0 MMBtu/hr Boilers (2)	Bellagio
Remove		
MB039 & MB041	1.75 MMBtu/hr Boilers (2)	Mandalay Bay
MB050	20.0 MMBtu/hr Boiler	Mandalay Bay
BE138 & BE139	2.76 MMBtu/hr Boilers (2)	Bellagio

July 27, 2023: Administrative revision application provided serial numbers for various boilers for which permits had been issued with a TBD designation, as identified in Table II-C-2.

Table II-C-2: Revised Serial Numbers

EU	Serial Number	EU	Serial Number
LX015	22P118328	MB080	22P118323-A
LX016	22P118329	MB081	22P118323-B
LX017	22P118327	MB082	22P118320-A
LX018	22P118330	MB083	22P118320-B
LX019	11463075	MB084	22P118321-A
MB078	22P118322-A	MB085	22P118321-B
MB079	22P118322-B		

October 25, 2023: Prior notification form to remove one 5.0 MMBtu/hr boiler at the Bellagio (EU: BE186) and one 0.266 MMBtu/hr boiler at the Excalibur (EU: EX058) with boilers having identical heat input ratings. The new boiler at the Bellagio is identified as EU: BE198. The new boiler at the Excalibur is part of an emission consisting of multiple boilers with ratings less than 1.0 MMBtu/hr. Therefore, this emission unit identifier remains unchanged.

October 25, 2023: Minor revision application to add and remove boilers identified in Table II-C-3.

Table II-C-3. Changes Requested in October 25, 2023 Minor Revision Application

EU	Description	Location
Add		
MB140 – MB143	4.99 MMBtu/hr Boilers (4)	Mandalay Bay
MB144	6.25 MMBtu/hr Boiler	Mandalay Bay
Remove		
MB016 & MB018-MB022	1.90 MMBtu/hr Boilers (6)	Mandalay Bay
MB001 & MB049	20.0 MMBtu/hr Boilers (2)	Mandalay Bay
MB094	4.3 MMBtu/hr boiler	Mandalay Bay
LX044 – LX048	2.88 MMBtu/hr Boilers (5)	Luxor

The source is being reclassified as a categorical source with this permitting action. A list of categorical source criteria is included in AQR 12.2.2(j). Item 22 in this list includes the following definition: "Fossil-fuel boilers (or a combination thereof) totaling more than 250 million Btu per hour heat input." Table II-C-4 lists the combined heat input for boilers at each property.

As a categorical source, the major source threshold for all regulated pollutants is defined as 100 tons per year.

Table II-C-4. Total Combined Heat Input Ratings per Property

Property	Combined Heat Input Rating for all Boilers (MMBtu/hr)
MGM	153.65
New York New York	18.33
Park MGM	50.40
Signature at MGM	29.51
Mandalay Bay	202.57
Four Seasons	5.98
Luxor	78.8
Excalibur	60.05
Bellagio	141.26
City Center	120
Cosmopolitan	110.5
Total	**971.05**

The source PTE for PM_{10} and $PM_{2.5}$ are 86.39 and 83.43 tons/year, respectively. These values are within 20 percent of the major source threshold of 100 tons for these pollutants. However, since the calculated values are the maximum true PTEs, PM_{10} and $PM_{2.5}$ are not synthetic minors.

SIC Code 7011 and NAICS code 721120, identified on all previous permits are specific to hotels and casino operators. These codes are not applicable to the T-Mobile Arena, which hosts both musical and sporting events. Therefore, SIC Code 7999 and NAICS Code 711310, which covers performing arts and sporting events has been added with this permitting action.

The information provided in this document is limited to new emission units for this permitting action.

III. EMISSIONS INFORMATION

A. EMISSION UNIT LIST

Table III-A-1 lists the new emission units for this Part 70 OP.

Table III-A-1: New Emission Units

EU	Rating	Description	Manufacturer	Model No.	Serial No.	SCC
Mandalay Bay						
MB134	1.95 MMBtu/hr	Natural Gas-Fired Boiler	RBI	FB1950	TBD	10300603
MB135	1.95 MMBtu/hr	Natural Gas-Fired Boiler	RBI	FB1950	TBD	10300603
MB136	4.99 MMBtu/hr	Natural Gas-Fired Boiler	Camus	Dynaflame DFNH-5004	TBD	10300603
MB137	4.99 MMBtu/hr	Natural Gas-Fired Boiler	Camus	Dynaflame DFNH-5004	TBD	10300603
MB138	4.99 MMBtu/hr	Natural Gas-Fired Boiler	Camus	Dynaflame DFNH-5004	TBD	10300603
MB139	4.99 MMBtu/hr	Natural Gas-Fired Boiler	Camus	Dynaflame DFNH-5004	TBD	10300603
MB140	4.99 MMBtu/hr	Natural Gas-Fired Boiler	Camus	Dynaflame DFNH-5004	TBD	10300603
MB141	4.99 MMBtu/hr	Natural Gas-Fired Boiler	Camus	Dynaflame DFNH-5004	TBD	10300603
MB142	4.99 MMBtu/hr	Natural Gas-Fired Boiler	Camus	Dynaflame DFNH-5004	TBD	10300603
MB143	4.99 MMBtu/hr	Natural Gas-Fired Boiler	Camus	Dynaflame DFNH-5004	TBD	10300603
MB144	6.25 MMBtu/hr	Natural Gas-Fired Boiler	Unilux	600HS	TBD	10300603
Bellagio						
BE194	1.5 MMBtu/hr	Natural Gas-Fired Boiler	Lochinvar	PBN1501	TBD	10300603
BE195	1.5 MMBtu/hr	Natural Gas-Fired Boiler	Lochinvar	PBN1501	TBD	10300603
BE196	3.0 MMBtu/hr	Natural Gas-Fired Boiler	Lochinvar	PBN3001	TBD	10300603
BE197	3.0 MMBtu/hr	Natural Gas-Fired Boiler	Lochinvar	PBN3001	TBD	10300603
BE198	5.0 MMBtu/hr	Natural Gas-Fired Boiler	Lochinvar	FBN5000	TBD	10300603
Cosmopolitan						
CO01	21.0 MMBtu/hr	Natural Gas-Fired Boiler	UBW	UFH33500160PFN	M039190	10300602
CO02	21.0 MMBtu/hr	Natural Gas-Fired Boiler	UBW	UFH33500160PFN	M039180	10300602
CO03	21.0 MMBtu/hr	Natural Gas-Fired Boiler	UBW	UFH33500160PFN	M039200	10300602
CO04	21.0 MMBtu/hr	Natural Gas-Fired Boiler	UBW	UFH33500160PFN	M039170	10300602
CO05	21.0 MMBtu/hr	Natural Gas-Fired Boiler	UBW	UFH33500160PFN	M039160	10300602
CO06	5.49 MMBtu/hr[1]	Natural Gas-Fired Boilers <1.00 MMBtu/hr	Various	Various	Various	10300603
CO07	2,000 kW	Emergency Generator	Caterpillar	SR4BGD	G5H00391	20300101
	2,937 hp	Diesel Engine; DOM 2007		3516C	SBJ00370	
CO08	2,000 kW	Emergency Generator	Caterpillar	SR4BGD	G5H00375	20300101
	2,937 hp	Diesel Engine; DOM 2007		3516C	SBJ00338	

EU	Rating	Description	Manufacturer	Model No.	Serial No.	SCC
CO09	2,000 kW	Emergency Generator	Caterpillar	SR4BGD	G5H00376	20300101
	2,937 hp	Diesel Engine; DOM 2007		3516C	SBJ00337	
CO10a	3,600 gpm	Cooling Tower (cell 1 of 4)	Baltimore Aircoil	31301A-4	U070112 1801	38500101
CO10b	3,600 gpm	Cooling Tower (cell 2 of 4)				
CO10c	3,600 gpm	Cooling Tower (cell 3 of 4)				
CO10d	3,600 gpm	Cooling Tower (cell 4 of 4)				
CO11a	3,600 gpm	Cooling Tower (cell 1 of 4)	Baltimore Aircoil	31301A-4/V	U070112 1802	38500101
CO11b	3,600 gpm	Cooling Tower (cell 2 of 4)				
CO11c	3,600 gpm	Cooling Tower (cell 3 of 4)				
CO11d	3,600 gpm	Cooling Tower (cell 4 of 4)				

[1]Combined total for all units with a heat input rating of less than 1.0 MMBtu/hr, plus 10%.

The following units or activities listed in in Table III-A-2 are present at this source, but are deemed insignificant.

Table III-A-2: Insignificant Activities

Rating	Description	Location
0.984 MMBtu/hr (each)	Natural Gas-Fired Air Handlers (3)	Mandalay Bay
	Spray Booth	Mandalay Bay

B. APPLICABILITY EMISSIONS

Permitting applicability is determined by calculating the emissions for all proposed emission units using 8,760 hours of operation (except for emergency generators or fire pumps, which use 500 hours), any inherent controls, any inherent throughput limitations, and the emission factors provided by the manufacturer, by source test results, by EPA AP-42, or by other approved methods. As a categorical source, fugitive emissions are required to be included with applicability calculations.

Table III-B-1: Applicability Emissions Evaluation (tons per year)

Pollutant	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	H_2S	Pb	HAP	GHG[1]
Applicability Thresholds	5	5	5	25	25	5	1	0.3		
Major Source Thresholds (Categorical Source)	100	100	100	100	100	100	n/a	100	10/25[2]	75,000
Applicability Emissions Total	88.62	85.27	795.83	381.11	4.13	75.78	0	0	22.31	614,960.84

[1]In units of CO_2e
[2]10 tons for a single HAP or 25 tons for any combination of HAP compounds.

As Table III-B-1 shows, Applicability Emissions are above major source thresholds for NO_x, CO, and GHG pollutants which qualifies this source as a major source for the aforementioned pollutants. It is a minor source for all other regulated pollutants. Calculations are included as an attachment.

C. SOURCE-WIDE PTE

Table III-C-1: Source-wide PTE (tons per year)

Property Name	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC	HAP	GHG[1]
MGM Grand	13.79	13.79	148.27	77.58	0.68	20.30	6.46	605,957.94
New York -- New York	1.34	1.34	34.08	10.32	0.10	1.06	0.16	
Park MGM	6.58	6.58	37.90	23.19	0.17	2.22	0.47	
Signature	2.38	2.38	35.03	16.70	0.15	1.40	0.31	
Mandalay Bay	12.04	12.04	106.37	61.50	0.72	16.04	4.09	
Four Seasons	0.18	0.18	0.68	1.22	0.03	3.91	0.63	
Luxor	5.52	5.52	66.93	32.03	0.25	4.35	1.38	
Excalibur	4.45	4.45	58.56	25.62	0.28	3.32	0.62	
Bellagio	13.14	13.14	160.07	74.02	0.70	13.38	4.95	
City Center	15.70	15.70	94.30	31.30	0.65	6.00	1.56	
T-Mobile Arena	0.08	0.08	10.85	0.86	0.01	0.20	0.03	
Cosmopolitan	11.19	8.23	35.25	20.44	0.34	3.17	0.93	
Total PTE	**86.39**	**83.43**	**788.28**	**374.76**	**4.08**	**75.35**	**21.59**	**605,957.94**

[1]In units of CO_2e

As shown in Table III-C-6, the source wide emission increases for PM_{10} and $PM_{2.5}$ exceed the minor NSR significance thresholds. These values represent the cumulative totals for four separate applications, as described in Section II-C. Normally, this would require the source to submit a RACT analysis for these pollutants. However, due to the fact none of the applications are dependent on another, each of the four applications comprise separate projects. With the exception of the May 30, 2023 significant revision application, which requests to transfer the emission units associated with Cosmopolitan, the PTE increases are below the minor NSR significance thresholds (see Tables III-C-2 through III-C-4). Due to this fact, a RACT analysis is not required.

Table III-C-2: Emissions Increase Associated with 03/30/2023 Minor Revision Application

Property Name	Description	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC	HAP
Mandalay Bay	PTE (EUs Added)	0.76	0.76	1.16	4.64	0.06	0.58	0.20
	PTE (EUs Removed)	0.77	0.77	3.93	7.64	0.07	0.55	0.18
Bellagio	PTE (EUs Added)	0.30	0.30	0.96	2.92	0.04	0.22	0.06
	PTE (EUs Removed)	0.18	0.18	0.88	2.00	0.02	0.14	0.04
Net Increase/Decrease (ton/yr)		**0.11**	**0.11**	**-2.69**	**-2.08**	**0.01**	**0.11**	**0.04**

Table III-C-3: Emissions Increase Associated with 10/25/2023 Minor Revision Application

Property Name	Description	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC	HAP
Mandalay Bay	PTE (EUs Added)	0.85	0.85	1.36	4.25	0.06	0.63	0.21
	PTE (EUs Removed)	1.80	1.80	8.96	12.56	0.17	1.28	0.47
Luxor	PTE (EUs Removed)	0.45	0.45	6.20	5.20	0.05	0.35	0.10
Net Increase/Decrease (ton/yr)		**-1.40**	**-1.40**	**-13.80**	**-13.51**	**-0.16**	**-1.00**	**-0.36**

Table III-C-4: Emissions Increase Associated with 10/25/2023 Prior Notification Form

Property Name	Description	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC	HAP
Bellagio	PTE (EU Added)	0.16	0.16	0.53	0.81	0.01	0.12	0.04
	PTE (EU Removed)	0.16	0.16	0.53	0.81	0.01	0.12	0.04
Net Increase/Decrease (ton/yr)		**0**	**0**	**0**	**0**	**0**	**0**	**0**

As shown in Table III-C-5, the emission increases for PM_{10}, $PM_{2.5}$, and NO_x exceed the minor NSR significance thresholds. Due to the fact that the Cosmopolitan Hotel is currently permitted as a minor source, all NSR permitting requirements have been met with previous permitting actions. This negates the necessity to review these issues with this permitting action. This includes the requirement for the source to submit a RACT analysis for the aforementioned pollutants.

Table III-C-5: Emissions Increase Associated with 03/30/2023 Significant Revision App.

Property Name	Description	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC	HAP
Cosmopolitan	PTE (EUs Added)	11.19	8.23	35.25	20.44	0.34	3.17	0.93

Table III-C-6: Emissions Increase (tons per year)

Description	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAP	GHG[1]
Current Permitting Action	86.39	83.43	788.28	374.76	4.08	75.35	21.59	605,957.94
Minor Revision Issued 07/06/2023	76.49	76.49	769.52	369.91	3.89	73.07	20.98	565,001.97
Emissions Increase	9.90	6.94	18.76	4.85	0.19	2.28	0.61	40,955.97
Excluded from EI (Cosmopolitan)	11.19	8.23	35.25	20.44	0.34	3.17	0.93	56,679.78
Net Emissions Increase	0	0	0	0	0	0	0	0
AQR 12.5.1(d) Minor NSR Significance Levels	7.5	5.0	20	50	20	20		N/A
AQR 12.2.2(uu) Significance Thresholds	15	10	40	100	40	40	10	N/A
RACT/BACT Analysis Required	No	No	No	No	No	No	No	No

[1]In units of CO_2e

D. OPERATIONAL LIMITS

1. The operation of the emergency generator shall be limited to 100 hours per year for testing and maintenance purposes. The permittee may operate the emergency generator up to 50 hours/year for nonemergency situations, but those hours count towards the 100 hours provided for testing and maintenance. Except as provided below (a–e inclusive), the emergency generator cannot be used for peak shavings or nonemergency demand response, or to generate income for a facility by supplying power to an electric grid or to otherwise supply power as part of a financial arrangement with another entity (EUs: CO07 – CO09):

    a. The engine is dispatched by the local balancing authority and/or local transmission and distribution operator.

    b. The dispatch is intended to mitigate local transmission and/or distribution limitations to avert potential voltage collapse or line overloads that could lead to interruption of power supply in a local area or region.

    c. The dispatch follows reliability, emergency operation, or similar protocols that follow specific NERC, regional, state, public utility commission, or local standards or guidelines.

d. The power is provided only to the facility itself or to support the local transmission and distribution system.

e. The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission, or local standards or guidelines that are being followed for the dispatching engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

E. CONTROL TECHNOLOGY

Emergency Engines

1. Only combust diesel fuel with a maximum sulfur content of 15 ppm and either a minimum cetane index of 40 or a maximum aromatic content of 35% by volume shall be combusted in each emergency generator (EUs: CO07 – CO09).
2. The permittee shall operate and maintain each emergency generator in accordance with the manufacturer's operations and maintenance instructions (EUs: CO07 – CO09).

Boilers

3. Only natural gas shall be combusted in each boiler (EUs: MB134 – MB144, BE194 – BE198, and CO01 – CO06).
4. Each boiler shall be operated and maintained in accordance with the manufacturer's operations and maintenance instructions (EUs: MB134 – MB144, BE194 – BE198, and CO01 – CO06).
5. Each boiler shall be operated with burners that have a manufacturer's maximum emission concentration of 9 parts per million (ppm) NO_x, corrected to 3 percent oxygen (EUs: MB136 – MB143).
6. Each boiler shall be operated with burners that have a manufacturer's maximum emission concentration of 10 parts per million (ppm) NO_x, corrected to 3 percent oxygen (EUs: MB134 and MB135).
7. Each boiler shall be operated with burners that have a manufacturer's maximum emission concentration of 12 parts per million (ppm) NO_x, corrected to 3 percent oxygen (EUs: CO01 through CO05 and MB144).
8. Each boiler shall be operated with burners that have a manufacturer's maximum emission concentration of 20 parts per million (ppm) NO_x, corrected to 3 percent oxygen (EUs: BE194 – BE198).
9. Each boiler shall be operated with burners that have a manufacturer's maximum emission concentration of 50 ppm CO, corrected to 3 percent oxygen (EUs: CO01, CO05, MB136 – MB144, and BE198).
10. Each boiler shall be operated with burners that have a manufacturer's maximum emission concentration of 50 ppm CO, corrected to 3 percent oxygen (EUs: BE196 and BE197).
11. Each boiler shall be operated with burners that have a manufacturer's maximum emission concentration of 200 ppm CO, corrected to 3 percent oxygen (EUs: BE194 and BE195).

Cooling Towers

12. Each cooling tower shall be operated with drift eliminators that have a manufacturer's maximum drift rate of 0.005 percent (EUs: CO10(a-d) and CO11(a-d)).
13. The total dissolved solids (TDS) content of each cooling tower's circulation water shall not exceed 5,000 ppm (EUs: CO10(a-d) and CO11(a-d)).
14. Each cooling tower shall be operated and maintained in accordance with the manufacturer's O&M manual for emissions-related components (EUs: CO10(a-d) and CO11(a-d)).

F. MONITORING

Visible Emissions

1. Quarterly visual emissions checks shall be conducted on each diesel-powered emergency generator while it is in operation (EUs: CO07 – CO09).

Boilers

2. The fuel consumption of the boilers shall be monitored monthly (EUs: CO01 through CO05).
3. Burner efficiency tests shall be conducted on each boiler twice each calendar year. Test shall be at least five (5) months apart, but no more than seven (7). Alternative methods may be used upon Control Officer approval. (EUs: CO01 through CO05).
4. A burner efficiency test shall be conducted once each calendar year (EU: MB144).

Cooling Towers

5. The TDS of each cooling tower recirculation water shall be monitored monthly using a conductivity meter or another device the Control Officer has approved in advance (EUs: CO10(a-d) and C011(a-d).

G. PERFORMANCE TESTING

1. The permittee shall conduct performance tests on each boiler every five years, and no later than 90 days after the anniversary date of the last performance test. the performance testing methodologies for individual emission units listed in Table III-G-1 (EUs: CO01 through CO05).

Table III-G-1. Performance Testing Protocol Requirements

EU	Test Point	Pollutant	Method	Frequency
CO01 through CO05	Boiler Exhaust Outlet Stack	NO_x	EPA Method 7E	5 years
	Boiler Exhaust Outlet Stack	CO	EPA Method 10	
	Stack Gas Parameters	—	EPA Methods 1, 2, 3A, and 4	

IV. REGULATORY REVIEW

A. LOCAL REGULATORY REQUIREMENTS

There are no additional local regulatory requirements associated with this permitting action. All requirements established with previous permits remain applicable.

B. FEDERALLY APPLICABLE REGULATIONS

There are no additional applicable federal regulations associated with this permitting action. All requirements established with previous permits remain applicable.

V. COMPLIANCE

The permittee is required to monitor and keep records for all limitations specified in the permit.

VI. EMISSION REDUCTION CREDITS (OFFSETS)

The source is not subject to offset requirements.

VII. MODELING

Facility Location: 664400, 3996600 (Universal Transverse Mercator (UTM) NAD83)

MGM Resorts International is a major source in Hydrographic Area 212 (the Las Vegas Valley). Permitted emission units include boilers, generators, cooling towers for the operation of 11 facilities. Since minor source baseline dates for NO_x (October 21, 1988) and SO_2 (June 29, 1979) have been triggered, Prevention of Significant Deterioration (PSD) increment analysis is required.

DAQ modeled the source using AERMOD to track the increment consumption. Average actual emissions (2021-2022) were used in the NO_X modeling. Stack data submitted by the applicant were supplemented with information available for similar emission units. Five years (2011 to 2015) of meteorological data from the McCarran Station were used in the model. U.S. Geological Survey National Elevation Dataset terrain data were used to calculate elevations. Table VII-1 shows the location of the maximum impact and the potential PSD increment consumed by the source at that location. The impacts are below the PSD increment limits.

Table VII-1: PSD Increment Consumption

Pollutant	Averaging Period	Source's PSD Increment Consumption (µg/m^3)	Location of Maximum Impact	
			UTM X (m)	UTM Y (m)
SO_2	3-hour	6.11[1]	664440	3996573
SO_2	24-hour	2.52[1]	664438	3996654
SO_2	Annual	1.18	664438	3996654
NO_X	Annual	6.97	664849	3997357

[1] Highest Second High Concentration.

VIII. PERMIT SHIELD

The permittee did not request a permit shield.

IX. PUBLIC PARTICIPATION

This permitting action is for a significant revision to an AQR 12.5 operating permit. As a result, public participation is required in accordance with AQR 12.5.2.17.

X. ATTACHMENTS

X-1. Source PTE Summary

Property Name	PM_{10} tpy	$PM_{2.5}$ tpy	NO_x tpy	CO tpy	SO_2 tpy	VOC tpy	HAP tpy
MGM Grand	13.79	13.79	148.27	77.58	0.68	20.30	6.46
New York -- New York	1.34	1.34	34.08	10.32	0.10	1.06	0.16
Park MGM	6.58	6.58	37.90	23.19	0.17	2.22	0.47
Signature	2.38	2.38	35.03	16.70	0.15	1.40	0.31
Mandalay Bay	12.04	12.04	106.37	61.50	0.72	16.04	4.09
Four Seasons	0.18	0.18	0.68	1.22	0.03	3.91	0.63
Luxor	5.52	5.52	66.93	32.03	0.25	4.35	1.38
Excalibur	4.45	4.45	58.56	25.62	0.28	3.32	0.62
Bellagio	13.14	13.14	160.07	74.02	0.70	13.38	4.95
City Center	15.70	15.70	94.30	31.30	0.65	6.00	1.56
T-Mobile Arena	0.08	0.08	10.85	0.86	0.01	0.20	0.03
Cosmopolitan	11.19	8.23	35.25	20.44	0.34	3.17	0.93
Total PTE	**86.39**	**83.43**	**788.28**	**374.76**	**4.08**	**75.35**	**21.59**

X-2. Source Applicability Summary

Property Name	PM_{10} tpy	$PM_{2.5}$ tpy	NO_x tpy	CO tpy	SO_2 tpy	VOC tpy	HAP tpy
MGM Grand	13.79	13.79	148.27	77.58	0.68	20.30	6.46
New York -- New York	1.34	1.34	34.08	10.32	0.10	1.06	0.16
Park MGM	6.58	6.58	37.90	23.19	0.17	2.22	0.47
Signature	2.38	2.38	35.03	16.70	0.15	1.40	0.31
Mandalay Bay	12.04	12.04	106.37	61.50	0.72	16.04	4.09
Four Seasons	0.18	0.18	0.68	1.22	0.03	3.91	0.63
Luxor	5.52	5.52	66.93	32.03	0.25	4.35	1.38
Excalibur	4.45	4.45	58.56	25.62	0.28	3.32	0.62
Bellagio	13.14	13.14	160.07	74.02	0.70	13.38	4.95
City Center	15.70	15.70	94.30	31.30	0.65	6.00	1.56
T-Mobile Arena	0.08	0.08	10.85	0.86	0.01	0.20	0.03
Cosmopolitan	11.19	8.23	35.25	20.44	0.34	3.17	0.93
Insignificant Units	2.23	1.84	7.55	6.35	0.05	0.43	0.72
Total Applicability	**88.62**	**85.27**	**795.83**	**381.11**	**4.13**	**75.78**	**22.31**

X-3. PTE for Natural Gas-Fired Boilers

EU#:	MB134 & MB135			Emission Factor (lb/mmBtu)	Potential Emissions (per unit)		
Make:	RBI				lb/hr	lb/day	ton/yr
Model:	FB1950		PM10	0.0075	0.01	0.35	0.06
S/N:	TBD		PM2.5	0.0075	0.01	0.35	0.06
			NOx	0.0122	0.02	0.57	0.10
1.95	mmBtu/hr		CO	0.0824	0.16	3.86	0.70
24.0	hr/day		SO_2	6.00E-04	0.01	0.03	0.01
8760	hr/yr		VOC	0.0054	0.01	0.25	0.05
			HAP	1.90E-03	0.01	0.09	0.02
Concetrations:		%O2	Lead	4.90E-07	9.56E-07	2.29E-05	4.19E-06
10	ppm NOx	3.0					
	ppm CO	3.0					
Fuel:	Natural Gas						

X-4. PTE for Natural Gas-Fired Boilers

EU#:	MB136 - MB143			Emission Factor (lb/mmBtu)	Potential Emissions (per unit)		
Make:	Camus				lb/hr	lb/day	ton/yr
Model:	DRNH-5004		PM10	0.0075	0.04	0.90	0.16
S/N:	TBD		PM2.5	0.0075	0.04	0.90	0.16
			NOx	0.0109	0.05	1.31	0.24
4.99	mmBtu/hr		CO	0.037	0.18	4.43	0.81
24.0	hr/day		SO_2	6.00E-04	0.01	0.07	0.01
8760	hr/yr		VOC	0.0054	0.03	0.65	0.12
			HAP	1.900E-03	0.01	0.23	0.04
Concetrations:		%O2	Lead	4.90E-07	2.45E-06	5.87E-05	1.07E-05
9	ppm NOx	3.0					
50	ppm CO	3.0					
Fuel:	Natural Gas						

X-5. PTE for Natural Gas-Fired Boiler

EU#:	MB144			Emission Factor	Potential Emissions		
Make:	Unilux				lb/hr	lb/day	ton/yr
Model:	600 HS		PM10	0.0075	0.05	1.13	0.21
S/N:	TBD		PM2.5	0.0075	0.05	1.13	0.21
			NOx	0.0146	0.09	2.19	0.40
6.25	mmBtu/hr		CO	0.037	0.23	5.55	1.01
24.0	hr/day		SO_2	6.00E-04	0.01	0.09	0.02
8760	hr/yr		VOC	0.0054	0.03	0.81	0.15
			HAP	1.900E-03	0.01	0.29	0.05
Concetrations:		%O2	Lead	4.90E-07	3.06E-06	7.35E-05	1.34E-05
12	ppm NOx	3.0					
50	ppm CO	3.0					
	Natural Gas						
Fuel:	2						

X-6. PTE for Natural Gas-Fired Boilers

EU#:	BE194 & BE195			Emission Factor (lb/mmBtu)	Potential Emissions (per unit)		
Make:	Lochinvar				lb/hr	lb/day	ton/yr
Model:	PBN1501		PM10	0.0075	0.01	0.27	0.05
S/N:	TBD		PM2.5	0.0075	0.01	0.27	0.05
			NOx	0.0243	0.04	0.87	0.16
1.5	mmBtu/hr		CO	0.1479	0.22	5.32	0.97
24.0	hr/day		SO_2	6.00E-04	0.01	0.02	0.01
8760	hr/yr		VOC	0.0054	0.01	0.19	0.04
			HAP	1.900E-03	0.01	0.07	0.01
Concetrations:		%O2	Lead	4.90E-07	7.35E-07	1.76E-05	3.22E-06
20	ppm NOx	3.0					
200	ppm CO	3.0					
Fuel:	Natural Gas						

X-7. PTE for Natural Gas-Fired Boilers

EU#:	BE196 & BE197			Emission Factor (lb/mmBtu)	Potential Emissions (per unit)		
Make:	Lochinvar				lb/hr	lb/day	ton/yr
Model:	PBN3001		PM10	0.0075	0.02	0.54	0.10
S/N:	TBD		PM2.5	0.0075	0.02	0.54	0.10
			NOx	0.0243	0.07	1.75	0.32
3.0	mmBtu/hr		CO	0.037	0.11	2.66	0.49
24.0	hr/day		SO_2	6.00E-04	0.01	0.04	0.01
8760	hr/yr		VOC	0.0054	0.02	0.39	0.07
			HAP	1.900E-03	0.01	0.14	0.02
Concetrations:		%O2	Lead	4.90E-07	1.47E-06	3.53E-05	6.44E-06
20	ppm NOx	3.0					
50	ppm CO	3.0					
Fuel:	Natural Gas						

X-8. PTE for Natural Gas-Fired Boiler

EU#:	BE198			Emission Factor (lb/mmBtu)	Potential Emissions		
Make:	Lochinvar				lb/hr	lb/day	ton/yr
Model:	FBN5000		PM10	0.0075	0.04	0.90	0.16
S/N:	TBD		PM2.5	0.0075	0.04	0.90	0.16
			NOx	0.0243	0.12	2.92	0.53
5.0	mmBtu/hr		CO	0.037	0.19	4.44	0.81
24.0	hr/day		SO_2	6.00E-04	0.01	0.07	0.01
8760	hr/yr		VOC	0.0054	0.03	0.65	0.12
			HAP	1.900E-03	0.01	0.23	0.04
Concetrations:		%O2	Lead	4.90E-07	2.45E-06	5.88E-05	1.07E-05
20	ppm NOx	3.0					
50	ppm CO	3.0					
Fuel:	Natural Gas						

X-9. PTE for Natural Gas-Fired Boilers

EU#:	CO01 - CO05			Emission Factor (lb/mmBtu)	Potential Emissions (per unit)		
Make:	UBW				lb/hr	lb/day	ton/yr
Model:	UHF-33-500-160-PF-N		PM10	0.0075	0.16	3.78	0.69
S/N:	See OP & TSD		PM2.5	0.0075	0.16	3.78	0.69
			NOx	0.0146	0.31	7.36	1.34
21.0	mmBtu/hr		CO	0.0370	0.78	18.65	3.41
24.0	hr/day		SO_2	0.0006	0.01	0.30	0.06
8760	hr/yr		VOC	0.0054	0.11	2.72	0.50
			HAP	1.90E-03	0.04	0.96	0.17
BACT:		%O2	Lead	4.90E-07	1.03E-05	2.47E-04	4.51E-05
12	ppm NOx	3.0					
50	ppm CO	3.0					
Fuel:	Natural Gas						

X-10. PTE for Natural Gas-Fired Boilers

EU#:	C006			Emission Factor (lb/mmBtu)	Potential Emissions		
Make:	Various				lb/hr	lb/day	ton/yr
Model:	Various		PM10	0.0075	0.04	0.99	0.18
S/N:	Various		PM2.5	0.0075	0.04	0.99	0.18
			NOx	0.098	0.54	12.91	2.36
5.49	mmBtu/hr*		CO	0.0824	0.45	10.86	1.98
24.0	hr/day		SO_2	0.0006	0.01	0.08	0.01
8760	hr/yr		VOC	0.0054	0.03	0.71	0.13
			HAP	1.900E-03	0.01	0.25	0.05
BACT:		%O2	Lead	4.90E-07	2.69E-06	6.46E-05	1.18E-05
	ppm NOx	3.0					
	ppm CO	3.0					
	Natural Gas						
Fuel:	2		*All EUs <1.0 MMBtu/hr combined + 10%				

X-11. PTE/Applicability for Diesel Engines

EU#	CO06 - CO08		Horsepower:	2,937		Emission Factor (lb/hp-hr)	Potential Emissions (per unit)	
Make:	Caterpillar		Hours/Day:	24.0			lb/hr	ton/yr
Model:	3516C		Hours/Year	500	PM10	5.73E-05	0.17	0.04
S/N:	See OP & TSD				NOx	1.19E-02	34.90	8.73
					CO	6.39E-04	1.88	0.47
Manufacturer Guarantees					SO_2	1.21E-05	0.04	0.01
PM10	0.026	g/hp-hr			VOC	2.43E-04	0.71	0.18
NOx	5.39	g/hp-hr			HAP	1.10E-05	0.03	0.01
CO	0.29	g/hp-hr						
SO_2		lb/hp-hr						
VOC	0.11	g/hp-hr						
Engine Type:	Diesel				Diesel Fuel Sulfur Content is 15 ppm (0.0015%)			

X-12. PTE/Applicability for Cooling Towers

EU	Description	Drift Loss % (1)	Flow Rate (gal/min)	TDS (mg/l)	Hours of Operation		PM10	PM2.5
					hr/day	hr/yr	ton/yr	ton/yr
C01a	Cooling Tower (cell 1)	0.005%	3600	5000	24	8760	0.93	0.56
C01b	Cooling Tower (cell 2)	0.005%	3600	5000	24	8760	0.93	0.56
C01c	Cooling Tower (cell 3)	0.005%	3600	5000	24	8760	0.93	0.56
C01d	Cooling Tower (cell 4)	0.005%	3600	5000	24	8760	0.93	0.56
C02a	Cooling Tower (cell 1)	0.005%	3600	5000	24	8760	0.93	0.56
C02b	Cooling Tower (cell 2)	0.005%	3600	5000	24	8760	0.93	0.56
C02c	Cooling Tower (cell 3)	0.005%	3600	5000	24	8760	0.93	0.56
C02d	Cooling Tower (cell 4)	0.005%	3600	5000	24	8760	0.93	0.56
							7.44	**4.46**

X-13. Applicability for Natural Gas-Fired Equipment at Cosmopolitan (insignificant activities)

EU#:	Insignificant Activities			**Emission Factor (lb/mmBtu)**	**Potential Emissions**		
					lb/hr	**lb/day**	**ton/yr**
Make:	Various		**PM10**	0.0075	0.02	0.53	0.10
Model:	Various		**PM2.5**	0.0075	0.02	0.53	0.10
S/N:	Various		**NOx**	0.098	0.29	6.94	1.27
2.95	mmBtu/hr*		**CO**	0.0824	0.24	5.83	1.06
24.0	hr/day		**SO_2**	0.0006	0.01	0.04	0.01
8760	hr/yr		**VOC**	0.0054	0.02	0.38	0.07
			HAP	1.900E-03	0.01	0.13	0.02
BACT:		**%O2**	**Lead**	4.90E-07	1.45E-06	3.47E-05	6.33E-06
	ppm NOx	3.0					
	ppm CO	3.0					
Fuel:	Natural Gas		***2.95 MMBtu is the sum of all insignificant activities**				

Greenhouse Gas Calculations

Greenhouse gases (GHG) are a group of compounds that act to trap heat in the atmosphere making the Earth's surface warmer than it would be, otherwise. The EPA has identified carbon dioxide, methane, nitrous oxide, and fluorinated gases as the primary GHG compounds. Total source GHG emissions, represented as CO_2e, are calculated by applying a global warming potential (GWP) factor to each GHG compound. The GWP is an equalization factor which compares the heat-trapping capacity of each GHG compound to an equal mass of CO_2. Table X-14 shows the GWP for each GHG compound emitted by the Apex Generating Plant.

Boilers

Table X-14: GWP Factors (from 40 CFR 98 Subpart A, Table A-1)

CO_2	CH_4	N_2O
1	25	298

Table X-15: Emission Factors (from 40 CFR 98 Subpart C, Tables C-1 and C-2)

Fuel	CO_2	CH_4	N_2O
Natural Gas	53.06 kg/MMBtu	0.001 kg/MMBtu	0.0001 kg/MMBtu

Table X-16: Emission Factors for GHG from Combustion of Natural Gas

Pollutant	GWP	GHG EF (kg/MMBtu)[1]	GHG Equivalent (kg/MMBtu)[2]	GHG Equivalent (lb/MMBtu)[3]
CO_2	1	53.06	53.06	116.997
CH_4	25	0.001	0.025	0.055
N_2O	298	0.0001	0.0298	0.066
			Total	**117.12**

[1]EF from 40 CFR Part 98, Subpart C Table C-1 and C-2

[2]EF * GWP

[3]Conversion factor: 1kg = 2.205 lbs

Equation 1: GHG (ton/yr) = (MMBtu of EU * 117.12 lb/MMBtu * 8,760 hr/yr) ÷ 2,000 lb/ton

Table X-17: GHG Calculations for Boilers (new and removed)

EU	Rating (MMBtu)	GHG (tons/yr)		EU	Rating (MMBtu)	GHG (tons/yr)
Units Added with this Permitting Action				**Units Removed with this Permitting Action**		
MB134	1.95	1000.32		MB001	20	10259.71
MB135	1.95	1000.32		MB016	1.9	974.67
MB136	4.99	2559.80		MB018	1.9	974.67
MB137	4.99	2559.80		MB019	1.9	974.67
MB138	4.99	2559.80		MB020	1.9	974.67
MB139	4.99	2559.80		MB021	1.9	974.67
MB140	4.99	2559.80		MB022	1.9	974.67
MB141	4.99	2559.80		MB039	1.75	897.72
MB142	4.99	2559.80		MB041	1.75	897.72
MB143	4.99	2559.80		MB049	20	10259.71
MB144	6.5	3334.41		MB050	20	10259.71
MB094	4.3	2205.84		MB094	4.3	2205.84
BE194	1.5	769.48		LX044	2.88	1477.40
BE195	1.5	769.48		LX045	2.88	1477.40
BE196	3	1538.96		LX046	2.88	1477.40
BE197	3	1538.96		LX047	2.88	1477.40
BE198	5	2564.93		LX048	2.88	1477.40
CO01	21	10772.70		BE138	2.76	1415.84
CO02	21	10772.70		BE139	2.76	1415.84
CO03	21	10772.70		BE186	5	2564.93
CO04	21	10772.70			**Total Removed**	**53,412.06**
CO05	21	10772.70				
CO06	5.49	2816.29				
	Total Added	**91,880.85**		**Net Gain: 91,880.85 – 53,412.06 = 38,468.79**		

Table X-18: Applicability Calculations for Natural Gas-Fired Units (insignificant activities)

Description	MMBtu/hr	GHG (ton/yr)
Boilers Classified as Insignificant Activities	17.55	**9002.90**

Diesel Engines

Equation 2: Fuel Consumption (gal/yr) = (0.35 lb/hp-hr * HP * Run Time (hr/yr)) ÷ 7 lb/gal

$\frac{0.35\ \text{lb}}{\text{hp}-\text{hr}}$ x 2,937 hp x $\frac{500\ \text{hr}}{\text{yr}}$ x $\frac{gallon}{7\ lb}$ = 73,424 gal/yr

Equation 3: Heat Capacity for Diesel Engine (MMBtu/yr):

MMBtu/yr = Fuel Consumption (gal/yr) * Run Time (hr/year) * Heat Capacity of Diesel (MMBtu/gal)

$\frac{73{,}424\ \text{gal}}{\text{yr}}$ x $\frac{500\ \text{hr}}{\text{yr}}$ x $\frac{0.138\ MMBtu}{gal}$ = 10,132.65 MMBtu/yr

Table X-19: GHG from Diesel-Powered Generators (per unit) (EUs: CO07 – CO09)

HP	Operation (hr/yr)	Fuel Consumption (gal/yr)	Heat Capacity - diesel[1] (MMBtu/gal)	MMBtu/yr	Pollutant	GWP	EF (kg/MMBtu)	CO2e (ton/yr)
2,937	500	73,425	0.138	10,132.65	CO_2	1	73.96	826.23
					CH_4	25	0.003	0.84
					N_2O	298	0.0006	2.00
[1]Bureau of Transportation Statistics						**Total (per unit)**		**829.06**

Table X-20 Source Wide GHG PTE

Total GHG From Permit Issued 07/06/2023	565,001.97
GHG (Added EUs)	94,368.03
GHG (Removed EUs)	53,412.06
Total	**605,957.94**

GHG Applicability = 605,957.94 (Table X-20) + 9002.90 (Table X-18) = 614,960.84 ton/yr