

**CITY OF ALBUQUERQUE
ENVIRONMENTAL HEALTH DEPARTMENT
AIR QUALITY PROGRAM**

**TITLE V OPERATING PERMIT RENEWAL
APPLICATION
#536-RN1**

**University of New Mexico
Main Campus**

Prepared By:

Casey Hall – Director Environmental Health and Safety

University of New Mexico
Department of Safety and Risk
1 University of New Mexico
Albuquerque, NM 87131
(315) 885-8683

Adam Erenstein – Manager of Consulting Services

Trinity Consultants, Inc
9400 Holly Ave NE
Building 3, Suite 300
Albuquerque, NM 87122
(505) 266-6611

May 2022

Project 223201.0082

MAY 11 AM 11:16



TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES	I
1. GENERAL INFORMATION	1-1
1.0 Executive Summary	1-1
1.1 Request for Permit Shield	1-2
1.2 Proposed Updates to the Operating Permit.....	1-2
2. APPLICABLE REGULATIONS AND REQUIREMENTS REVIEW	2-1
2.1 Compliance Status with Applicable Requirements	2-1
2.2 City of Albuquerque Regulations.....	2-1
2.3 Federal Regulations	2-4
3. EMISSION CALCULATIONS	3-13
3.1.1 Ford Turbines (116-TRB-1 and 2).....	3-13
3.1.2 Ford Boilers (116-BLR-1A and 2A).....	3-13
3.1.3 Steam Plant Boilers (176-BLR-1, 176-BLR-2 and 176-BLR-3).....	3-13
3.1.4 Animal Crematorium Facility (262-CFM-1).....	3-13
3.1.5 Center for High Tech Materials Boiler (338-BLR-1).....	3-13
3.1.6 Emergency Generators (XXX-EG-X).....	3-13
3.1.7 Above Ground Storage Tank (216-AST-1A).....	3-13
3.1.8 Unpaved Parking Lots (XXX-DL-X).....	3-13
3.1.9 Chemical Usage (CHEM).....	3-14
4. STARTUP, SHUTDOWN, AND MAINTENANCE EMISSIONS	4-15
5. FEE INFORMATION	5-16
6. OPERATIONAL PLAN TO MITIGATE EMISSIONS	6-17
7. FACILITY PLOT PLANS	7-18
8. ALTERNATIVE OPERATING SCENARIOS	8-19
9. AIR DISPERSION MODELING WAIVER	9-20
10. INSIGNIFICANT ACTIVITIES	10-21
APPENDIX A. TITLE V OPERATING PERMIT RENEWAL APPLICATION FORMS	1
APPENDIX B. EMISSION CALCULATION SUPPORTING INFORMATION	2
APPENDIX C. ANNUAL COMPLIANCE CERTIFICATION REPORT	3
APPENDIX D. CURRENT TITLE V OPERATING PERMIT	4

LIST OF TABLES

Table 1. Units modified/removed from Title V Permit #536-RN1	1-2
Table 2. Reduction of emissions for boiler under ATC#0490-RV1	1-4
Table 3. Reduction of emissions for removal of 255 EG-1-AQCP#1750-1AR, 081-EG-1-REG#1973, and 082-EG-1-REG#1974.	1-5
Table 4. Total facility wide emission reductions.	1-5
Table 5. Units that will remain unchanged from permit #536-RN1	1-6
Table 6. NMAC Applicable Regulations	2-6
Table 7. Federal Applicable Regulations	2-11
Table 6: Insignificant Boilers	10-21
Table 7: Insignificant Heaters	10-22
Table 8: Insignificant Storage Tank	10-27

1. GENERAL INFORMATION

1.0 Executive Summary

Executive Summary: This application describes the renewal of UNM's Title V Operating Permit #536-RN1 for the University of New Mexico Main Campus located at Scholes Hall 160, Bldg. 10, 1800 Roma NE, Albuquerque, NM. This application is in response to the requirements under 20.11.42.12(2)(a)(ii) NMAC to submit a renewal for the Title V Operating Permit twelve (12) months prior to the expiration date of May 14th, 2023. The contents of this application contain all of the subsequent modifications that have occurred at the facility for all Authority-To-Construct (ATC) permits issued under the umbrella of UNM's Title V Operating Permit that have occurred in the past five (5) years. All modifications will be explained in detail and their subsequent changes to the total facility operating emissions. A pre-application meeting with the City of Albuquerque (CABQ) Environmental Health Department (EHD) Air Quality Program (AQP) was held on April 7th, 2021.

1. General information
 - a. University of New Mexico (UNM)
 - b. Facility Name: University of New Mexico Main Campus
2. Facility Information
 - a. Purpose of permit and description/plan: Renewal of Title V Operating Permit (#536-RN1)
 - i. UNM is seeking to renew their existing Title V Operating Permit (#536-RN1) for the main campus. UNM has not modified any of the existing sources or constructed any additional sources under the Title V Operating Permit except for the Technical Revision submitted for ATC#0490-RV1. This Technical Revision was submitted on February 11, 2022 to reduce the permitted heat duty for the natural gas fired boiler, unit 1, from 8 MMBtu/hr boiler to 4 MMBtu/hr, which decreased the total facility emissions. Please refer to Table 2 for the total emission reductions with the decreased boiler heat duty submitted with the Technical Revision. This Technical Revision did not include any modifications to the existing stack for the boiler and its specifications will remain unchanged with this Title V renewal. UNM has modified and removed multiple emergency generators at the facility as well; these changes and removals have been documented in Table 1 of this application. The emergency generators and their respective permits, that have been removed from the facility include 255 EG-1 from AQCP#1750-1AR, 081-EG-1 from REG#1973, and 082-EG-1 from REG#1974. The reductions in emissions from the removal of these emergency generators can be referenced on Table 3 of this application. The new proposed facility emission rates for all criteria pollutants can be seen on Table 4 of this application, which references emission rates under Title V Operating Permit #536-RN1 and then the resulting reduced emissions from the modifications mentioned above.
 - ii. See Table 1 for all proposed modifications and removals of sources under #536-RN1.
 - b. Physical facility address: Scholes Hall 160, Bldg. 10, 1800 Roma NE, Albuquerque, NM
 - c. Facility maps: Various maps and aerial images of the Main campus are included in Section 9 of this application, these include:
 - i. A layout of buildings and sources of criteria pollutants;
 - ii. Most recent Google Earth® imagery of the site;
 - d. Anticipated operating days and hours: The anticipated operating times are 24 hours per day, 7 days per week, and 52 weeks per year.

1.1 Request for Permit Shield

Pursuant to NMAC 20.11.42.12(C)(9)(d), the permit shield shall remain in effect if the permit terms and conditions are extended past the expiration date of the permit pursuant to Paragraph (4), of Subsection A of 20.11.42.13 NMAC.

Since UNM is submitting a timely application for the Title V renewal, UNM requests that the AQP grant a permit shield.

Pursuant to NMAC 20.11.42.12(C)(9), AQCB should include in a Title V permit, a provision stating that compliance with the conditions of the permit shall be deemed compliant with any applicable requirements as of the date of permit issuance, provided that:

- i) such applicable requirements are included and are specifically identified in the permit; or
- ii) the department, in acting on the permit application or significant permit modification, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.

With this submittal and consistent with the regulation, UNM is requesting that the AQP provide a permit shield to the UNM Main Campus facility. Therefore, in addition to providing a summary of all of the applicable regulatory requirements, that UNM is subject to in order to assist the AQP in its determination of applying a permit shield this facility.

1.2 Proposed Updates to the Operating Permit

The following tables provide details of all modifications to ATC permits under UNM’s Title V, the potential and controlled emissions associated with the proposed modifications are included under Table 4. Table 5 contains all units that will remain unchanged from Title V Operating Permit #536-RN1.

Table 1. Units modified/removed from Title V Permit #536-RN1

Unit - Permit#	Modification Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
338-BLR-1-ATC # 0490-RV1	Technical Revision turned into CABQ	Riello	AR-4000	19-HE086634619	2020	07/2020	4 MMBtu/Hr
034-EG-1-ATC#1981-M1	Unit Replaced	Cummins	4BTA3.3G7	72046554	02/2019	03/2020	99 hp
083-EG-1-ATC#1174	Model Correction	Generac	A5399 12.0L	6d24-297589	03/2000	03/2001	325 Hp
266-EG-1-ATC#1980-M1	Model and Serial Correction	Generac	63060 13.3L	EK100 19333	1988	1988	240 HP

Unit - Permit#	Modification Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
255 EG-1-AQCP#1750-1AR	Removed and canceled	N/A	N/A	N/A	N/A	N/A	N/A
227-EG-1-ATC#1979-1TR	Replaced	Cummins	QSL9-G2 NR3	74262461	01/2018	2018	364 hp
194-EG-1-REG#1700	Incorrect power rating	Perkins	2400/1800	U273145J	2003	2003	95 hp (70.6 kw)
053-EG-1-AQCP#3299	Incorrect power rating	Caterpillar	C4.4	E5G00337	11/2016	03/2017	161 hp (120.1 KW)
057-EG-1-AQCP#3300	Incorrect power rating	Caterpillar	C4.4	E3L01203	2016	03/2017	86 hp (64 kw)
072-EG-1-AQCP#3300	Model and Serial Correction	Caterpillar	C9	S9P01337	10/2016	03/2017	480 hp
234-EG-1A-AQCP#1968-M1	Unit Replaced	Kubota	V2203	7HY1375	02/2018	04/2018	36 hp (26.9 kw)
228-EG1-REG#1969	Model and Serial Correction	Allis Chalmers	2800 MK 1	2D-67951	Pre 1975	1975	60 hp
122-EG-1-REG#1970	Replaced	Cummins	4BTAA3.3G7	72047653	03/2019	03/2020	99 hp
046-EG-1-ATC#1971-M1	Replaced	Cummins	4BTAA3.3G7	72047647	03/2019	03/2020	99 HP
248-EG-1-ATC#1972-M1	Replaced	Cummins	4BT3.3G5	72047820	03/2019	03/2020	69 HP
081-EG-1-REG#1973	Removed and canceled	N/A	N/A	N/A	N/A	N/A	N/A
082-EG-1-REG#1974	Removed and canceled	N/A	N/A	N/A	N/A	N/A	N/A

Unit - Permit#	Modification Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
211-EG-2-REG#1978	Correct Serial	Cummins/Ford	LSG-8751-6005-A	22533 S-22-RH	2001	2001	129 hp
200-EG-1-ATC#2038	Correct Serial	Caterpillar	C6.6	E6M01669	05/2019	2010	275 hp (205 KW)
211-EG-3-REG#2167	Correct Serial	Kohler	30 RGZ	GM1266242 2	01/2005	07/2012	75 hp
289-EG-1-ATC#2176	Correct Model	Cummins	QSL9-G3 NR3	73274655	07/2011	07/2012	399 hp
302-EG-1A-AQCP#1692-M1-1AR	Correct Model	Cummins	QSK50-G4	75702-587	02/2009	2010	2020 hp (rated) 1848 hp Governed
191-EG-1A-ATC#3019	Correct Model and Serial	Cummins	BN5XS.7202 BC	G110232924	2011	2013	25 hp
253-EG-2-ATC#3020	Correct Model and Serial	Cummins	GTA855E	25371726	05/2012	10/2012	383 hp

The units that have been modified or removed in Table 1 that resulted in reduced emissions for the UNM total emissions are 338-BLR-1 from ATC # 0490-RV1, 255 EG-1 from AQCP#1750-1AR, 081-EG-1 from REG#1973, and 082-EG-1 from REG#1974. Tables 2 and 3 below show the total change in pounds per hour (lb/hr) and tons per year (tpy) emission rates.

Table 2. Reduction of emissions for boiler under ATC#0490-RV1

Units	NOx		CO		VOC		SOx		PM10		PM2.5	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
338-BLR-1-ATC#490RV1 New	0.39	1.72	0.33	1.44	0.02	0.09	0.002	0.01	0.03	0.013	0.03	0.013
338-BLR-1-ATC#490RV1 Old	0.64	2.8	0.54	2.37	0.04	0.18	0.0038	0.018	0.05	0.22	0.05	0.22
Reductions in Emissions	-0.25	-1.08	-0.21	0.93	-0.02	-0.09	-0.0018	-0.008	-0.02	-0.20	-0.02	-0.21

Table 3. Reduction of emissions for removal of 255 EG-1-AQCP#1750-1AR, 081-EG-1-REG#1973, and 082-EG-1-REG#1974.

Units	NOx		CO		VOC		SOx		PM10		PM2.5	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
255 EG-1-AQCP#1750-1AR	5.76	0.58	4.85	0.49	0.21	0.021	0.03	0.003	0.02	0.0021	0.02	0.0021
081-EG-1-REG#1973	0.54	0.054	0.9	0.09	0.01	0.001	0.00014	0.000014	0.0047	0.00047	0.0047	0.00047
082-EG-1-REG#1974	0.54	0.054	0.9	0.09	0.01	0.001	0.00014	0.000014	0.0047	0.00047	0.0047	0.00047
Total Emission Reductions	-6.84	-0.69	-6.65	-0.67	-0.23	-0.023	-0.030	-0.0030	-0.029	0.0030	-0.029	-0.0030

Table 4. Total facility wide emission reductions.

Units	NOx		CO		VOC		SOx		PM10		PM2.5	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
0536-RN1 Permitted units	255.78	138.05	221.72	160.53	20.39	52.81	25.38	31.42	21.41	15.50	21.41	15.50
New Emission Rate	248.69	136.28	214.86	158.93	20.14	52.70	25.35	31.41	21.36	15.29	21.36	15.29
Total Reduction in Emissions	-7.09	-1.77	-6.86	-1.60	-0.25	-0.11	0.032	0.011	0.049	-0.21	-0.049	-0.21

Table 5. Units that will remain unchanged from permit #536-RN1

Process Equipment Table for Steam Plant

Unit - Permit#	Unit Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
176-BLR-1-ATC# 1601-M1-RV1	Natural Gas Fired Boiler	Miura	LX-300SG	48S492816	2010	03/2011	12.4 MMBtu/HR
176-BLR-2-ATC# 1601-M1-RV1	Natural Gas Fired Boiler	Miura	LX-300SG	48S402892	2010	03/2011	12.4 MMBtu/HR
176-BLR-3-ATC# 1601-M1-RV1	Natural Gas Fired Boiler	Miura	LX-300SG	48S402893	2010	03/2011	12.4 MMBtu/HR

Process Equipment Table for Animal Research Facility Crematorium

Unit - Permit#	Unit Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
262-CRM-1-ATC# 1982-1AR	Natural Gas Fired ARF Crematorium	Advanced Combustion	CAP-300	6125	Unknown	1986	2 MMBtu/Hr

Process Equipment Table for Ford Utility Center

Unit - Permit#	Unit Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
116-TRB-1-ATC # 1643-M1	Gas Turbine	Solar Turbine	Taurus 70	TG03014	6/2012 (core)	10/2004	7.5MW
116-TRB-2-ATC # 1643-M1	Gas Turbine	Solar Turbine	Taurus 70	TG13437	2013	2013	7.7 MW
116-BLR-1A-ATC # 1643-M1	Boiler	English	80SH250	230071	2003	37926	96.2 MMBtu/Hr
116-BLR-2A-ATC # 1643-M1	Boiler	English	80SH250	230072	2003	37926	96.2 MMBtu/Hr

Process Equipment Table for UNM Emergency Internal Combustion Engines

Unit - Permit#	Unit Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
021-EG-1-ATC#1373	Diesel Fired Emergency Generator	Detroit	R123K05	347425	03/1998	01/2000	910 HP
048-EG-1-REG#624	Diesel Fired Emergency Generator	Generac	5.0L	92460	1998	1998	166 hp
060-EG-1-ATC#1646	Diesel Fired Emergency Generator	Cummins	LTA10-G1	35047404	10/2001	11/2002	380 HP
153-EG-1-ATC#1647	Diesel Fired Emergency Generator	Cummins	QSX 15-G9 NR2	79059635	08/2004	2004	750 hp
205-EG-1-ATC#1716	Diesel Fired Emergency Generator	Kohler	300REOZ V	776539	11/2003	2004	462 hp (345 KW)
260-EG-1-ATC#1715-RV1	Natural Gas Fired Emergency Generator	Cummins	GTA-28	25289112	4/2004	2004	738 HP
116-EG-1A-ATC#1662-RV1	Natural Gas Fired Emergency Generator	Caterpillar	SR4	CTL00746	2003	2004	1052 hp
253-EG-1A-AQCP#1809-M1-2AR	Diesel Fired Emergency Generator	Cummins	QST30-G5	37224830	2006	2007	1490 hp
195-EG-1-AQCP#1852-M1-1AR	Diesel Fired Emergency Generator	Cummins	QSL9-G2	46562404	12/2005	2007	364 hp
204-EG-1-ATC#3137	Diesel Fired Emergency Generator	Cummins	QSB7-G5NR3	73611565	11/2013	07/2014	324 hp
112-EG-1-ATC#1898	Diesel Fired Emergency Generator	Caterpillar	C9 DITA	S9L01312	2007	2007	480 hp
249-EG-1-REG#1766	Natural Gas Fired Emergency Generator	Ford	WSG-1068I-6005-A	03-06-056796	05/2003	2005	137 hp
024-EG-1-REG#1881	Diesel Fired Emergency Generator	Cummins	4BT3.9-G1	45158032	03/1195	2007	88 hp

Unit - Permit#	Unit Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
059-EG-1-ATC#2008	Diesel Fired Emergency Generator	Cummins	4BTA3.9-G5	21820602	2007	12/2008	99 hp
085-EG-1-ATC#1975-M1	Diesel Fired Emergency Generator	Cummins	4BTAA3.3G7	72009677	12/2012	05/2014	99 hp
58-EG-1-ATC#1976-M1	Diesel Fired Emergency Generator	Cummins	QSB5-G3NR3	73610377	11/2013	07/2014	145 hp
301EG-1-ATC#1691	Diesel Fired Emergency Generator	Cummins	NH 230 GS	10492712	1975	1975	230 HP
338-EG-1-ATC #0490-RV1	Diesel Fired Emergency Generator	Cummins	LTA-10G1	34817648	04/1996	1997	380 hp
341-EG-1-REG#0504-RV1	Diesel Fired Emergency Generator	Cummins	LTA-10G1	34858330	1997	1997	380 hp
311A-EB-1-REG#1690	Natural Gas Fired Emergency Blower	Vanguard	303-447	98102211	1990s	1990s	16 hp
311B-EB-1-REG#1690	Natural Gas Fired Emergency Blower	Vanguard	303-447	95042811	1990s	1990s	16 hp
288-EG-1-ATC#2141	Diesel Fired Emergency Generator	Cummins	QSB7-G3NR3	73164867	11/2010	2011	250 hp
291-EG-2-ATC#3143	Diesel Fired Emergency Generator	Cummins	4BTAA3.3-G7	72010122	03/2013	2014	99 hp

Process Equipment Table for UNM Above Ground Storage Tanks

Unit - Permit#	Unit Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
216-AST-1A-ATC#0087-M1	Gasoline Storage Tank	Unknown	Unknown	Unknown	Unknown	1997	190,000 gal/yr throughput

Process Equipment Table for UNM Chemical Usage

Unit - Permit#	Unit Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
CHEM-ATC#2135	Chemical Usage	N/A	N/A	N/A	N/A	N/A	N/A

Process Equipment Table for UNM Unpaved Haul Roads

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
151-DL-4	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.36 VMT/hr
204-DL-2	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	11.9 VMT/hr
260-DL-1	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.27 VMT/hr
233-DL-1	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	40.27 VMT/hr
250-DL-1	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.17 VMT/hr
273-DL-1	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.11 VMT/hr
276-DL-1	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.30 VMT/hr
276-DL-2	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.28 VMT/hr
Elks Lodge Demolition Zone	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	N/A

2. APPLICABLE REGULATIONS AND REQUIREMENTS REVIEW

2.1 Compliance Status with Applicable Requirements

Several emergency generators have been updated based on their source registrations or authority to construct permits, a compiled list of all units that will be updated in this application can be found in Table 1. Some of these units have been replaced which causes the unit to be subject to new applicability requirements. Based on information and belief formed after reasonable inquiry, the University of New Mexico (UNM) certifies that, as provided in this report, emission units operating on the main campus are in compliance with each applicable requirement. Previous permit deviations reported are in the process of being addressed by facility work practices or requested permit modifications. A signed certification in accordance with 20 NMAC 11.42.12.A.(5), is provided at the end of Section IV of this Title V renewal application package.

2.2 City of Albuquerque Regulations

The regulations outlined below are only the applicable regulations to the UNM Main Campus.

20.11.2 NMAC - Permit Fees

UNM pays all filing and permit fees as required.

20.11.5 NMAC- Visible Air Contaminants

UNM's Main Campus is in compliance with this regulation by performing visual observations based on Method 9 of 40 CFR 60, Appendix A. Opacity requirements are applicable to the following emission units; 021-EG-1, 024-EG-1, 034-EG-1, 046-EG-1, 048-EG-1, 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 060-EG-1, 072-EG-1, 083-EG-1, 085-EG-1, 112-EG-1, 116-EG-1A, 122-EG-1, 153-EG-1, 191-EG-1A, 194-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 205-EG-1, 211-EG-2, 211-EG-3, 227-EG-1, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, 253-EG-1A, 253-EG-2, 260-EG-2, 266-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, 301-EG-1, 302-EG-1A, 311A-EB-1, 311B-EB-1, 338-EG-1, 341-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, and 262-CRM-1. UNM's Main Campus is in compliance with this regulation.

20.11.8 NMAC - Ambient Air Quality Standards

UNM's Main Campus is in compliance with National Ambient Air Quality Standards (NAAQS) and the State Ambient Air Quality Standards (NMAAQs) based on the results of air quality dispersion modeling submitted with the previous renewal of this Title V permit in 2017. UNM emission units required to show compliance with ambient standards including; 021-EG-1, 024-EG-1, 034-EG-1, 046-EG-1, 048-EG-1, 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 060-EG-1, 072-EG-1, 083-EG-1, 085-EG-1, 112-EG-1, 116-EG-1A, 122-EG-1, 153-EG-1, 191-EG-1A, 194-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 205-EG-1, 211-EG-2, 211-EG-3, 227-EG-1, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, 253-EG-1A, 253-EG-2, 260-EG-2, 266-EG-1, 288-EG-1,

289-EG-1, 291-EG-2, 301-EG-1, 302-EG-1A, 311A-EB-1, 311B-EB-1, 338-EG-1, 341-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, and 262-CRM-1.

20.11.20 NMAC - Fugitive Dust Control

UNM's Main Campus takes adequate steps to ensure that all persons conducting active operations that result in disturbed surface areas use reasonably available control measures or other effective measure on an ongoing basis to prevent or abate injury to human health and animal and plant life and to prevent or abate unreasonable interference with public welfare, visibility and the reasonable use of property. UNM's Main Campus is in compliance with this regulation. An updated Fugitive dust control programmatic application was submitted in January 2021 to add additional acreage for a total of 11.64 acres associated with the previous permit, the additional acreage does not correspond to an increase in vehicle miles traveled but added units 233-DL-1 and Elks Lodge Demolition zone. The requirements are applicable to the following emission units; 151-DL-4, 204-DL-2, 260-DL-1, 233-DL-1, 250-DL-1, 273-DL-1, 276-DL-1, 276-DL-2, 233-DL-1, Elks Lodge Demolition Zone.

20.11.23 NMAC – Stratospheric Ozone Protection

These regulations address CFC handling in automotive air conditioners. The UNM Main Campus repairs and maintains automotive air conditioners. This regulation is applicable.

20.11.40 NMAC - Source Registration

UNM's Main Campus has received numerous source registrations from the City of Albuquerque/Bernalillo County Air Quality Program (ABCAQP) that includes sources that need to be registered. The Source registrations associated with 081-EG-1-REG#1973 and 082-EG-1-REG#1974 have been cancelled and will be removed from this operating permit and these units will no longer be subject to any regulations. Source registration requirements are applicable to the following emission units; 024-EG-1, 046-EG-1, 048-EG-1, 057-EG-1, 058-EG-1, 085-EG-1, 122-EG-1, 194-EG-1, 211-EG-2, 211-EG-3, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, 291-EG-2, 311A-EB-1, 311B-EB-1, and 341-EG-1.

20.11.41 NMAC - Authority-to-Construct Permits

UNM's Main Campus submitted a Technical Revision to ATC#490-RV1, which revised the boiler (338-BLR-1) heat duty from 8 MMBtu/hr to 4 MMBtu/hr. The reduction in emissions has been recorded in Table 2. UNM's Main Campus will comply with all terms and conditions of ATC#490-RV1. UNM has also removed 255 EG-1-AQCP#1750-1AR therefore this unit will no longer be subject to any regulations. ATC requirements are applicable to the following emission units; 021-EG-1, 034-EG-1, 053-EG-1, 059-EG-1, 060-EG-1, 072-EG-1, 083-EG-1, 112-EG-1, 116-EG-1A, 153-EG-1, 191-EG-1A, 195-EG-1, 200-EG-1, 204-EG-1, 205-EG-1, 227-EG-1, 253-EG-1A, 253-EG-2, 260-EG-2, 266-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, 301-EG-1, 302-EG-1A, 338-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, 262-CRM-1 and 216-AST-1A.

20.11.42 NMAC - Operating Permits

UNM's Main and South Campus received Operating Permit #0536-RN1 issued on May 14, 2018 by ABCAQP that includes all sources regulated by this regulation.

20.11.43 NMAC - Stack Height Requirements

As part of permits pursuant to 20.11.41, 60, or 61 NMAC, sources shall demonstrate compliance with good engineering practice (GEP).

20.11.47 NMAC – Emission Inventory Requirements

UNM's Main Campus has submitted, and will continue to submit, emissions inventories, as requested by the EPA.

20.11.49 NMAC – Excess Emissions Requirements

This regulation pertains to any source whose operation results in an emission of a regulated air pollutant, including fugitive emissions, in excess of the quality, rate, opacity or concentration specified by an air quality regulation or permit condition. Per the removal of units 255 EG-1-AQCP#1750-1AR, 081-EG-1-REG#1973, and 082-EG-1-REG#1974 these units are no longer subject to this regulation. UNM will follow the requirements for notification of excess emissions from any regulated emission source. These include; 021-EG-1, 024-EG-1, 034-EG-1, 046-EG-1, 048-EG-1, 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 060-EG-1, 072-EG-1, 083-EG-1, 085-EG-1, 112-EG-1, 116-EG-1A, 122-EG-1, 153-EG-1, 191-EG-1A, 194-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 205-EG-1, 211-EG-2, 211-EG-3, 227-EG-1, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, 253-EG-1A, 253-EG-2, 260-EG-2, 266-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, 301-EG-1, 302-EG-1A, 311A-EB-1, 311B-EB-1, 338-EG-1, 341-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, 262-CRM-1, 151-DL-4, 204-DL-2, 233-DL-1, 250-DL-1, 260-DL-1, 273-DL-1, 276-DL-1, 276-DL-2, Elks Lodge Demolition Zone, and 216-AST-1A.

20.11.63 NMAC - New Source Performance Standards for Stationary Sources

UNM's Main Campus has individual sources applicable to requirements under 40 CFR Part 60. The regulation does apply. These sources include; 058-EG-1, 059-EG-1, 085-EG-1, 112-EG-1, 191-EG-1A, 195-EG-1, 200-EG-1, 204-EG-1, 253-EG-1A, 253-EG-2, 288-EG-1, 289-EG-1, 291-EG-2, 302-EG-1A, 116-TRB-1, 116-TRB-2, 116-BLR-1A, and 116-BLR-2A.

20.11.64 NMAC – Emission Standards for Hazardous Air Pollutants (HAPs) for Stationary Sources

UNM's Main Campus has individual sources applicable to requirements under 40 CFR Part 63. The regulation does apply to these sources; 058-EG-1, 059-EG-1, 085-EG-1, 112-EG-1, 191-EG-1A, 195-EG-1, 200-EG-1, 204-EG-1, 253-EG-1A, 253-EG-2, 288-EG-1, 289-EG-1, 291-EG-2, 302-EG-1A and 216-AST-1A.

20.11.65 NMAC - Volatile Organic Compounds

UNM's Main Campus takes the appropriate steps to minimize VOC emissions from stationary sources (216-AST-1A). UNM's Main Campus is in compliance with this regulation.

20.11.67 NMAC – Equipment, Emissions, Limitations

This regulation limits emissions from coal-, oil-, and gas-burning equipment of specific sizes. There is no coal burning equipment at the UNM Main Campus. Oil and gas burning equipment at the UNM Main

Campus do not exceed the applicable heat put limits in the regulation. This regulation is not applicable to UNM Main Campus.

20.11.68 NMAC – Incinerators and Crematories

This regulation limits emissions from crematories. The Animal Research Facility (ARF) is equipped with a crematorium (262-CRM-1), therefore this regulation applies.

20.11.90 NMAC - Administration, Enforcement, Inspection

UNM's Main Campus complies with the provisions of this regulation when operating equipment under abnormal conditions. Per the removal of units 255 EG-1-AQCP#1750-1AR, 081-EG-1-REG#1973, and 082-EG-1-REG#1974 these units are no longer subject to this regulation. This regulation applies through existing Source Registrations and ATC permits for the following emission units; 021-EG-1, 024-EG-1, 034-EG-1, 046-EG-1, 048-EG-1, 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 060-EG-1, 072-EG-1, 083-EG-1, 085-EG-1, 112-EG-1, 116-EG-1A, 122-EG-1, 153-EG-1, 191-EG-1A, 194-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 205-EG-1, 211-EG-2, 211-EG-3, 227-EG-1, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, 253-EG-1A, 253-EG-2, 260-EG-2, 266-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, 301-EG-1, 302-EG-1A, 311A-EB-1, 311B-EB-1, 338-EG-1, 341-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, 262-CRM-1, 151-DL-4, 204-DL-2, 233-DL-1, 250-DL-1, 260-DL-1, 273-DL-1, 276-DL-1, 276-DL-2 and 216-AST-1A.

20.11.100, 101, and 102 NMAC - Motor Vehicle Inspection and Oxygenated Fuels

As part of its vehicle maintenance program, UNM's Main Campus ensures that emissions control devices exist on all motor vehicles, and that they are not disabled. UNM's Main Campus ensures oxygenated fuels are used in their vehicles as appropriate.

2.3 Federal Regulations

40 CFR 50 - National Primary and Secondary Ambient Air Quality Standards (NAAQS)

UNM's Main Campus is in compliance with National Ambient Air Quality Standards (NAAQS) based on the results of air quality dispersion modeling submitted with the previous renewal of this Title V permit in 2017.

40 CFR 60 Subpart A – General Provisions

UNM's Main Campus complies with this regulation. This regulation applies because 40 CFR 60 Subparts Dc, GG, KKKK, IIII and JJJJ applies to UNM Main Campus.

40 CFR 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generators

This regulation applies to 116-BLR-1A and 116-BLR-2A. These boilers were constructed after June 9, 1989, and have a design input heat capacity between 10 MMBtu/hr and 100 MMBtu/hr. Sources 176-BLR-1 through 7 were originally designated as applicable to this regulation, but manufacturer de-rating of the units for the altitude of UNM Main Campus restricts the maximum design heat input capacity to below 10 MMBtu/hr.

Maximum design heat input capacity means; the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

40 CFR 60 Subparts GG - New Source Performance Standards for Stationary Gas Turbines

UNM's Main Campus is applicable to this regulation for stationary gas turbines with a heat input at peak load greater than or equal to 10.7 gigajoules/hr constructed, modified, or reconstructed after October 3, 1977. This subpart applies to gas turbine emission unit 116-TRB-1.

40 CFR 60 Subparts IIII - New Source Performance Standards for Stationary Combustion Ignition Internal Combustion Engines

UNM's Main Campus is applicable to this regulation for stationary combustion ignition internal combustion engines (CI ICE) that were ordered after July 11, 2005 and were manufactured after April 1, 2006 and are not a fire pump engines. UNM has submitted multiple administrative revisions to their existing source registrations and authority to construct permits, these revisions included replacement of multiple emergency units that caused multiple units to become subject to this regulation. The previous units subject subpart include 058-EG-1, 059-EG-1, 085-EG-1, 112-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 253-EG-1A, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A. The new units that are subject to this subpart are 034-EG-1, 227-EG-1, 234-EG-1A, 122-EG-1, 046-EG-1, and 248-EG-1.

40 CFR 60 Subparts JJJJ - New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines

UNM's Main Campus is applicable to this regulation for stationary spark ignition internal combustion engines (SI ICE) that commence construction after June 12, 2006; where the SI ICE was manufactured on or after January 1, 2009 for emergency engines with a maximum engine power greater than 19KW (25 HP). This subpart applies to 191-EG-1A and 253-EG-2.

40 CFR 60 Subparts KKKK - New Source Performance Standards for Stationary Combustion Turbines

UNM's Main Campus is applicable to this regulation for stationary gas turbines with a heat input at peak load greater than or equal to 10.7 gigajoules/hr constructed, modified, or reconstructed after February 18, 2005. This subpart applies to gas turbine emission unit 116-TRB-2.

40 CFR 61 Subpart M - Asbestos NESHAP

UNM's Main Campus will notify the appropriate regulators of demolition activities that trigger the provisions of this regulation. UNM's Main Campus is in compliance with this regulation.

40 CFR 63 Subpart A – General Provisions

UNM's Main Campus complies with this regulation. This regulation applies because 40 CFR 63 Subpart ZZZZ applies to UNM Main Campus's emergency generators and the gasoline storage tank (216-AST-1A) is applicable to Subpart CCCCC.

40 CFR 63 Subpart ZZZZ – National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

UNM's Main Campus complies with this regulation. Per the removal of units 255 EG-1-AQCP#1750-1AR, 081-EG-1-REG#1973, and 082-EG-1-REG#1974 these units are no longer subject to this regulation. For emergency generators that are applicable to both 40 CFR 60 Subpart IIII or JJJJ and applicable to 40 CFR 63 Subpart ZZZZ, compliance with 40 CFR 60 Subpart IIII or JJJJ is compliance with 40 CFR 63 Subpart ZZZZ.

40 CFR 63 Subpart CCCCC – National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities

This Regulation is applicable to Gasoline Dispensing Facilities (GDF). UNM Main Campus regulated source 216-AST-1A is applicable to this regulation. UNM's Main Campus complies with this regulation.

40 CFR 64 – Compliance Assurance Monitoring

UNM's Main Campus controls NO_x emission rates with water injection for combustion of #2 fuel oil and low NO_x burners for combustion of natural gas. Monitoring of NO_x emission limits is determined per the requirements in 40 CFR Part 75. This regulation is not applicable to Main Campus.

40 CFR 70 – State Operating Permit Programs

UNM's Main Campus received Title V Operating Permit #0536-RN1 on May 18,2018, from ABCAQP that includes all regulated air emissions sources.

40 CFR 98 - Mandatory Greenhouse Gas Reporting: Subpart A- General Provisions and Subpart C – General Stationary Fuel Combustion Sources

This regulation establishes mandatory greenhouse gas reporting requirements and UNM is a facility has the aggregate maximum rated heat input capacity of the stationary combustion units at the facility is 30 MMBtu/h or greater. UNM's Main Campus complies with this regulation for the following sources; 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 262-CRM-1, 176-BLR-1, 176-BLR-2, 176-BLR-3, and 338-BLR-1.

Table 6. NMAC Applicable Regulations

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.1 NMAC	General Provisions	All pollutants	Ambient Air Quality Standards for sources subject to another requirement under 20 NMAC 11.	Applicable
11.2 NMAC	Permit Fees	All pollutants	Sources subject to another requirement of 20 NMAC 11.	Applicable
11.5 NMAC	Visible Air Contaminants	Visible air contaminants (PM, fumes, smoke, or aerosols)	Incinerator, PWDs, stationary spark ignition engines, diesel-powered engines.	Applicable
11.8 NMAC	Ambient Air Quality Standards	CO, NO ₂ , O ₃ , SO ₂ , PM _{2.5} , PM ₁₀ , Pb, H ₂ S, Total Reduced Sulfur, PM (TSP)	All sources.	Applicable
11.20 NMAC	Airborne Particulate Matter	Airborne PM	Industrial/commercial activities, unpaved roads and parking areas, surface disturbances, sandblasting and other surface preparation, demolition.	Applicable
11.23 NMAC	Stratospheric Ozone Protection	ODCs	Equipment used to service motor vehicle AC system must meet SAE Standard J-1990, Repair and Disposal of Refrigeration Units.	Applicable
11.40 NMAC	Source Registration	All pollutants	By 1 January 1974, commercial/industrial sources emitting >2,000 lb/yr of any air contaminant or any amount of HAPs must obtain a Registration Certificate. Sources constructed after 1 September 1973 must obtain a Registration Certificate within 180 days after initial startup of source.	Applicable
11.41 NMAC	Authority-to-Construct	All pollutants	New construction or modification of sources with >10 lb/hr or >25 tpy (any regulated pollutant precontrolled) or >5 tpy precontrolled lead and sources that emit a significant amount of air contaminant listed in 40 CFR 61.01(b).	Applicable

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.42 NMAC	Operating Permits	All pollutants	Major sources.	Applicable
11.43 NMAC	Stack Height Requirements	All pollutants	As part of permits pursuant to 20 NMAC 11.41, 60 and 61, sources shall demonstrate compliance with good engineering practice.	Applicable
11.47 NMAC	Emission Inventory Requirements	Regulated Pollutants	Each person who owns or operates a source or who intends to construct or modify a source within Bernalillo county must submit certain relevant information to ensure that the regulations and standards under the Air Quality Control Act and the federal act will not be violated.	Applicable
11.49 NMAC	Excess Emissions	All pollutants	Implement requirements for the reporting of excess emissions and establish affirmative defense provisions for facility owners and operators for excess emissions.	Applicable
11.61 NMAC	Prevention of Significant Deterioration	Criteria pollutants in attainment	Stationary sources in attainment areas listed with potential emissions ≥ 250 tpy or specifically listed sources with potential emissions ≥ 100 tpy of any regulated pollutant.	Applicable
11.62 NMAC	Acid Rain Program Permits	Acid rain pollutants	Large power and cogeneration facilities.	Applicable
11.63 NMAC	NSPS – General Provisions	Pollutants applicable to 40 CFR 60	General provisions for any new or revised NSPS.	Applicable for each emission unit affected by a NSPS, as indicated in 40 CFR Part 60 (see below)
11.63 NMAC	NSPS – Adoption and Submittal of State Plans for Designated Facilities	Pollutants applicable to 40 CFR 60	Guidelines to control designated pollutants from affected facilities.	Applicable for each air pollutant that is subject to a NSPS that has not been issued air quality criteria

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.63 NMAC	NSPS – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	PM, SO ₂	Small industrial-commercial-institutional steam generating units with a heat input rate greater than or equal to 10 million Btu/hr and less than or equal to 100 million Btu/hr constructed, modified, or reconstructed after June 9, 1989.	Applicable to Units 116-BLR-1A and 116-BLR-2A
11.63 NMAC	NSPS - Standards of Performance for Stationary Gas Turbines	NO _x , SO ₂	Stationary gas turbines with a heat input at peak load greater than or equal to 10.7 gigajoules/hr constructed, modified, or reconstructed after October 3, 1977.	Applicable to Unit 116-TRB-1
11.63 NMAC	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	PM, SO ₂ , NO _x , CO, NMHC	The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005.	Applicable to Units 034-EG-1, 046-EG-1, 058-EG-1, 059-EG-1, 085-EG-1, 112-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 227-EG-1, 234-EG-1, 122-EG-1, 248-EG-1, 253-EG-1A, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A
11.63 NMAC	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	PM, SO ₂ , NO _x , CO, NMHC	The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) that commence construction after July 11, 2005.	Applicable to Units 191-EG-1A and 253-EG-2
11.63 NMAC	Standards of Performance for Stationary Combustion Turbines	SO ₂ , NO _x	Establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005.	Applicable to Unit 116-TRB-2
11.64 NMAC	General Provisions	HAPs	General provisions for National Emission Standards for Hazardous Air Pollutants (NESHAP).	Applicable for each emission unit affected by NESHAP, as indicated in 40 CFR 61 (see below)

Citation 20 NMAC (AQCR)	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
11.68 NMAC	Incinerators and Crematories	PM, visible emissions, noxious fumes	Incinerators and crematories.	Applicable to Unit 262-CRM-1

Table 7. Federal Applicable Regulations

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 50	National Primary and Secondary Ambient Air Quality Standards	NO _x , CO, SO ₂ , PM ₁₀ , PM _{2.5} , Ozone, Lead	Facility	Applicable
40 CFR 51	Requirements for Preparation, Adoption, and Submittal of Implementation Plans	All Regulated Pollutants	City of Albuquerque/Bernalillo County are the regulating authority for this facility.	Applicable
40 CFR 52	Approval and Promulgation of Implementation Plans	All Regulated Pollutants	City of Albuquerque/Bernalillo County are the regulating authority for this facility.	Applicable
40 CFR 63 Subpart A	Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Sections 112(g) and 112(j)	HAPs	General provisions for stationary sources that emit or have the potential to emit HAPs.	Applicable for each source category, as indicated in 40 CFR 63 (see below)
40 CFR 63 Subpart ZZZZ	National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	HAPs	Establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions.	Applicable for Units
40 CFR 63 Subpart CCCCC	National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities	HAPs	Establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted Gasoline Dispensing Facilities (GDF).	Applicable to Unit 216-AST-1A
40 CFR 63 Subpart JJJJJ	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources	HAPs	Owner or operator of an industrial, commercial, or institutional boiler.	Not applicable UNM boilers fire natural gas or less than 48 hours for testing on #2 fuel oil
40 CFR 64	Compliance Assurance Monitoring	All pollutants	Emission units with controls and with a potential to emit greater than the Major Source Threshold.	UNM is not applicable to CAM.

Federal Regulation Citation	Regulation Title	Regulated Pollutants	Regulated Source Category	Applicability
40 CFR 70	State Operating Permits Programs	Regulated Pollutants	Establishment of comprehensive State air quality permitting systems consistent with the requirements of title V of the Clean Air Act	Applicable
40 CFR 77	Excess Emissions	SO ₂ , NO _x	Facilities affected under the Acid Rain Program.	Applicable
40 CFR 82 Subpart B	Servicing of Motor Vehicle Air Conditioners	Class I and II substances	Service on a motor vehicle that involves the refrigerant in the air conditioner.	Applicable
40 CFR 98	Mandatory Greenhouse Gas Reporting	GHG	Establishes mandatory greenhouse gas (GHG) reporting requirements for owners and operators of certain facilities that directly emit GHG as well as for certain suppliers	Applicable

3. EMISSION CALCULATIONS

3.1.1 Ford Turbines (116-TRB-1 and 2)

Emissions calculations from the Ford Utilities turbines are brought forward from the existing ATC #1643-M1 permit. No emissions were modified with this renewal.

3.1.2 Ford Boilers (116-BLR-1A and 2A)

Emissions calculations from the Ford Utilities English boilers are brought forward from the existing ATC #1643-M1 permit. No emissions were modified with this renewal.

3.1.3 Steam Plant Boilers (176-BLR-1, 176-BLR-2 and 176-BLR-3)

Emissions calculations from the Steam Plant boilers are brought forward from the existing ATC #1601-M1 permit. No emissions were modified with this renewal.

3.1.4 Animal Crematorium Facility (262-CRM-1)

Emissions calculations from the Animal Crematorium Facility (ARF) are brought forward from the existing ATC #1982 permit. No emissions were modified with this renewal.

3.1.5 Center for High Tech Materials Boiler (338-BLR-1)

Emissions calculations from the Center for High Tech Materials boiler were reduced under a Technical Revision submitted to revise the existing ATC #0490-RV1 permit. This revision reduced the heat duty of the boiler from 8 MMBtu/hr to 4 MMBtu/hr, these emissions can be referenced in Table 2 of this application. New facility-wide emission rates are proposed in Table 4.

3.1.6 Emergency Generators (XXX-EG-X)

UNM includes a large number of emergency generators, permitted as source registrations or under ATC permits. Emissions from these are calculated from a number of sources including AP-42, Federal Emission Limits, and manufacturer's data. Emission rates are brought forward from their respective registration and ATC permit limits for each unit. Emissions were reduced with this renewal per the removal of 255 EG-1-AQCP#1750-1AR, 081-EG-1-REG#1973, and 082-EG-1-REG#1974. These reduced emissions can be referenced in Table 3 of this application. New facility-wide emission rates are proposed in Table 4.

3.1.7 Above Ground Storage Tank (216-AST-1A)

Emissions calculations from the Above Ground Storage Tank are brought forward from the existing ATC #0087-M1 permit. No emissions were modified with this renewal.

3.1.8 Unpaved Parking Lots (XXX-DL-X)

A fugitive dust control programmatic permit was submitted in January 2021 to add additional acreage for a total of 11.64 acres associated with the fugitive dust control programmatic permit. The additional acreage does not correspond to any additional vehicle miles traveled for haul roads. Existing emissions for these parking lots remain unchanged.

does not correspond to any additional vehicle miles traveled for haul roads. Existing emissions for these parking lots remain unchanged.

3.1.9 Chemical Usage (CHEM)

Emission Unit #CHEM shall not result in emissions exceeding 7.0 tons per year of any individual Hazardous Air Pollutant (HAP) and 9.4 tons per year of any combination of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Federal Clean Air Act, based on a 12-month rolling total. No emission limits were modified with this renewal.

Calculations for each individual unit are included in this section.

**UNM Main Campus Title V Renewal
Center for High Technology Materials
Emissions Data Units 338-BLR-1 (Natural Gas)**

Pollutant	EF	Units	Basis for Calculation
NOx	100	lb/MMscf	AP-42 Section Table 1.4-1 "Small Boiler" Emission Factors
CO	84	lb/MMscf	AP-42 Section Table 1.4-1 "Small Boiler" Emission Factors
SO2	0.6	lb/MMscf	AP-42 Section Table 1.4-1 "Small Boiler" Emission Factors
VOC	5.5	lb/MMscf	AP-42 Section Table 1.4-1 "Small Boiler" Emission Factors
PM	7.6	lb/MMscf	AP-42 Section Table 1.4-1 "Small Boiler" Emission Factors
HAPs	0.0867	lb/MMscf	AP-42 Table 1.4-3, 4

Rated Capacity	4	MMBtu/Hr
Natural Gas LHV	1000	Btu/scf
Flow rate	4.00E-03	MMSCF/Hr
Flow rate per year	56.1	MMscf/Yr
Hours of operation	8760	hr/yr

$$E \text{ (lbs/hr)} = EF * \text{MMSCF/Hr}$$

$$E \text{ (ton/yr)} = E \text{ (lbs/hr)} * 8760 \text{ hr/yr} / 2000 \text{ lbs/ton}$$

PTE				
	EF (lb/MMscf)	MMscf/hr	lb/hr	TPY
NOx	100	4.00E-03	0.39	1.72
CO	84	4.00E-03	0.33	1.44
SO2	0.6	4.00E-03	0.002	0.01
VOC	5.5	4.00E-03	0.02	0.09
PM	7.6	4.00E-03	0.03	0.013
HAPs	0.0867	4.00E-03	-	-

PER				
	EF (lb/MMscf)	MMscf/hr	lb/hr	TPY
NOx	100	4.00E-03	0.39	1.72
CO	84	4.00E-03	0.33	1.44
SO2	0.6	4.00E-03	0.002	0.01
VOC	5.5	4.00E-03	0.02	0.09
PM	7.6	4.00E-03	0.03	0.013
HAPs	0.0867	4.00E-03	-	-

¹ This emission factor is the sum of individual emission factors for all applicable HAPs emitted from the combustion of natural gas.

**UNM Main Campus Title V Renewal
 Ford Center Turbines Emission Rates
 Emissions Data Unit 116-TRB-1 (Natural Gas)**

Pollutant	EF	Basis for Calculation
NOx	7.6 lb/hr	Manufacturer Specification
CO	9.2 lb/hr	Manufacturer Specification
SO2	0.05 grains S / scf	Fuel Sulfur Content
VOC	2.6 lb/hr	Manufacturer Specification
PM	0.0066 lb/MMBtu	AP-42 Table 3.1-2a
HAPs	0.001 lb/MMBtu ¹	AP-42 Table 3.1-3

Rated Capacity	7.5	MW
Fuel Rate	4400	lb/hr
Fuel Density	0.04555	lb/scf
Natural Gas LHV	900	Btu/scf
Heat Rate	86.94	MMBtu/hr
Fuel consumption flow rate	96.6	Mscf/Hr
Yearly consumption flow rate	846	MMscf/Yr
Hours of operation	8760	hr/yr

$E \text{ (lb/hr) (SO}_2\text{)} = \text{grains S/scf} * \text{Mscf/hr} * 1000 \text{ scf/Mscf} / 7000 \text{ grains/lb} * 2 \text{ SO}_2\text{/S}$

$E \text{ (lb/hr) (PM)} = \text{EF} * \text{Heat Rate}$

$E \text{ (lb/hr) (HAPs)} = \text{EF} * \text{Heat Rate}$

$E \text{ (ton/yr)} = E \text{ (lbs/hr)} * 8760 \text{ hr/yr} / 2000 \text{ lbs/ton}$

PTE and PER					
	EF	Mscf/Hr	MMBtu/Hr	Lb/Hr	TPY
NOx	--	--	--	7.6	33.2
CO	--	--	--	9.2	40.4
SO2	0.05 grains S	96.6	--	1.4	6
VOC	--	--	--	2.6	11.6
PM	0.0066	--	86.94	0.57	2.5
HAPs	0.001	--	86.94	0.087	0.38

¹ This emission factor is the sum of individual emission factors for all applicable HAPs emitted from natural gas-fired stationary turbines.

**UNM Main Campus Title V Renewal
Ford Center Turbines Emission Rates
Emissions Data Unit 116-TRB-2 (Natural Gas)**

Pollutant	EF	Basis for Calculation
NOx	7.8 lb/hr	Previous Permit Application
CO	9.5 lb/hr	Manufacturer Specification
SO2	0.05 grains S / scf	Fuel Sulfur Content
VOC	2.72 lb/hr	Manufacturer Specification
PM	0.0066 lb/MMBtu	AP-42 Table 3.1-2a
HAPs	0.001 lb/MMBtu ¹	AP-42 Table 3.1-3

Rated Capacity	7.7	MW
Heat Rate	78.32	MMBtu/Hr
Natural Gas LHV	900	Btu/scf
Fuel consumption flow rate	87	Mscf/Hr
Yearly consumption flow rate	762	MMscf/Yr
Hours of operation	8760	hr/yr

$E \text{ (lb/hr) (SO}_2\text{)} = \text{grains S/scf} * \text{Mscf/hr} * 1000 \text{ scf/Mscf} / 7000 \text{ grains/lb} * 2 \text{ SO}_2\text{/S}$

$E \text{ (lb/hr) (PM)} = \text{EF} * \text{Heat Rate}$

$E \text{ (lb/hr) (HAPs)} = \text{EF} * \text{Heat Rate}$

$E \text{ (ton/yr)} = E \text{ (lbs/hr)} * 8760 \text{ hr/yr} / 2000 \text{ lbs/ton}$

PTE and PER					
	EF	Mscf/Hr	MMBtu/Hr	Lb/Hr	TPV
NOx	--	--	--	7.8	34.2
CO			--	9.5	41.6
SO2	0.05 grains S	87	--	1.2	5.4
VOC		--	--	2.72	11.9
PM	0.0066	--	78.32	0.52	2.26
HAPs	0.001	--	78.32	0.078	0.34

¹ This emission factor is the sum of individual emission factors for all applicable HAPs emitted from natural gas-fired stationary turbines.

**UNM Main Campus Title V Renewal
 Ford Center Boilers Emission Rates
 Emissions Data Units 116-BLR-1A, 2A (Natural Gas)**

Pollutant	EF	Basis for Calculation
NOx	0.0396 lb/MMBtu	Previous Permit Application
CO	4.9 lb/hr	Test Data
SO2	0.05 grains S/scf	Fuel Sulfur Content
VOC	0.012 lb/MMBtu	Previous Permit Application
PM	7.6 lb/MMscf	AP-42 Tables 1.4-1, 2
HAPs	0.0867 lb/MMscf ¹	AP-42 Table 1.4-3, 4

Rated Capacity	96.2	MMBtu/Hr (each)
Natural Gas LHV	900	Btu/scf
Fuel consumption flow rate	1.07E-01	MMscf/Hr
Yearly consumption flow rate	936	MMscf/Yr
Hours of operation	8760	hr/yr

$E \text{ (lb/hr) (NOx, VOC) = EF * LHV * MMscf/Hr}$

$E \text{ (lb/hr) (SO2) = grains S/scf * MMscf/hr * 1000000 scf/MMscf / 7000 grains/lb * 2 SO2/S}$

$E \text{ (lb/hr) (PM, HAPs) = EF * MMscf/hr}$

$E \text{ (ton/yr) = E (lbs/hr) * 8760 hr/yr / 2000 lbs/ton}$

PTE and PER				
	EF	MMscf/Hr	Lb/Hr	TPY
NOx	0.0396	1.07E-01	3.81	16.69
CO	--	--	4.89	21.42
SO2	0.05 grains S	1.07E-01	1.53	6.69
VOC	0.012	1.07E-01	1.15	5.06
PM	7.6	1.07E-01	0.81	3.56
HAPs	0.0867	1.07E-01	0.0093	0.041

¹ This emission factor is the sum of individual emission factors for all applicable HAPs emitted from the combustion of natural gas.

**UNM Main Campus Title V Renewal
Ford Center Boilers Emission Rates
Emissions Data Units 116-BLR-1A, 2A (Diesel)**

Pollutant	EF	Basis for Calculation
NOx	5.4 lb/hr	Previous Permit application
CO	0.67 lb/hr	Previous Permit application
SO2	15 ppm	Content of Ultra-Low Sulfur Fuel Oil
VOC	0.24 lb/hr	AP-42 Table 1.3-3
PM	2 lb/Mgal	Emission Limit in ATC Permit #1643-M1
HAPs	0.138 lb/Mgal ¹	AP-42 Table 1.3-9, 11

Rated Capacity	96.2	MMBtu/Hr (each)
Diesel Heating Value	140	Mbtu/gal
Gal/hr	687	
Max Gal/Yr	35,109	Permit Condition

$$E \text{ (lb/hr) (SO}_2\text{)} = \text{PPM}/1,000,000 * \text{gal/hr} * 7 \text{ lb/gal} * 2 \text{ moles S/SO}_2$$

$$E \text{ (lb/hr) (PM,HAPs)} = \text{EF} * \text{gal/hr} * 1/1000$$

$$E \text{ (ton/yr)} = E \text{ (lbs/hr)} * 25 \text{ hr/yr} / 2000 \text{ lbs/tn}$$

	EF	Gal/Hr	Lb/Hr	TPY
NOx	--	--	5.4	0.138
CO	--	--	0.67	0.017
SO2	15 PPM	687	0.14	0.004
VOC	--	--	0.24	0.006
PM	2.00 lb/Mgal	687	1.37	0.035
HAPs	0.138 lb/Mgal	687	0.09	0.002

¹ This emission factor is the sum of individual emission factors for all applicable HAPs emitted from the combustion of fuel oil.

**UNM Main Campus Title V Renewal
 Steam Plant Boilers Emission Rates
 Emissions Data Units 176-BLR-1 to 3 (Natural Gas)**

Pollutant	EF	Basis for Calculation
NOx	0.25 lb/hr	Manufacturer Specification
CO	0.75 lb/hr	Manufacturer Specification
SO2	0.05 grains S / scf	Fuel Sulfur Content
VOC	5.5 lb/MMscf	AP-42 Section Table 1.4-1
PM	7.6 lb/MMscf	AP-42 Section Table 1.4-1
HAPs	0.0867 lb/MMscf ¹	AP-42 Table 1.4-3, 4

Rated Capacity	12.4	MMBtu/Hr (each)
Natural Gas LHV	900	Btu/scf
Flow rate	1.38E-02	MMscf/Hr
De-Rated Capacity	9.82	MMBtu/Hr (each)
Natural Gas LHV	900	Btu/scf
Fuel consumption flow rate	1.09E-02	MMscf/Hr
Yearly consumption flow rate	95.6	MMscf/Yr
Hours of operation	8760	hr/yr

$E \text{ (lbs/hr) (VOC, PM, HAPs)} = EF * \text{MMscf/Hr}$

$E \text{ (lb/hr) (SO2)} = \text{grains S/scf} * \text{MMscf/hr} * 1000000 \text{ scf/MMscf} / 7000 \text{ grains/lb} * 2 \text{ SO2/S}$

$E \text{ (ton/yr)} = E \text{ (lbs/hr)} * 8760 \text{ hr/yr} / 2000 \text{ lbs/ton}$

PTE				
	EF	MMscf/Hr	Lb/Hr	TPY
NOx	--	--	0.25	1.1
CO	--	--	0.75	3.29
SO2	0.05 grains S	1.38E-02	0.2	0.86
VOC	5.5	1.38E-02	0.076	0.33
PM	7.6	1.38E-02	0.105	0.46
HAPs	0.0867	1.38E-02	1.19E-03	5.23E-03

PER				
	EF	MMscf/Hr	Lb/Hr	TPY
NOx	--	--	0.25	1.1
CO	--	--	0.75	3.29
SO2	0.05 grains S	1.09E-02	0.16	0.68
VOC	5.5	1.09E-02	0.06	0.26
PM	7.6	1.09E-02	0.083	0.36
HAPs	0.0867	1.09E-02	9.54E-04	4.18E-03

¹ This emission factor is the sum of individual emission factors for all applicable HAPs emitted from the combustion of natural gas.

**UNM Main Campus Title V Renewal
Animal Research Facility Crematorium Emission Rates
Emissions Data Unit 262-CRM-1**

Pollutant	EF	Basis for Calculation
NOx	0.309 kg/body	US EPA (www.epa.gov/chief)
CO	0.141 kg/body	US EPA (www.epa.gov/chief)
SO2	0.544 kg/body	US EPA (www.epa.gov/chief)
VOC	0.013 kg/body	EPA Cremation Guidebook 2008
PM	0.015 kg/body	EPA Cremation Guidebook 2009
HAPs	0.986 mg/body ¹	EPA Cremation Guidebook 2010

Charge	3	cu.yd./day
	81	scf/day
	14782.5	scf/yr
Body Mass	55	kg/body
Body Density	62.2	density of water at 25 °C
Body Equivalence	41.6	body/day
Hours of Operation	4380	hr/year

$$E \text{ (lbs/hr)} = EF * \text{Body Equivalence} * 1 \text{ day/24 hr} * 2.206 \text{ lb/kg}$$

$$E \text{ (ton/yr)} = E \text{ (lb/hr)} * 1 \text{ ton/2000 lb} * 4380 \text{ hr/yr}$$

	EF (kg/body)	Body Equivalence (body/day)	Lb/Hr	TPY
NOx	0.309	41.6	1.18	2.59
CO	0.141	41.6	0.54	1.18
SO2	0.544	41.6	2.08	4.56
VOC	0.013	41.6	0.05	0.11
PM	0.015	41.6	0.06	0.13

$$E \text{ (lbs/hr)} = EF * \text{Body Equivalence} * 1 \text{ day/24 hr} * 1 \text{ kg/1000 mg} * 2.206 \text{ lb/kg}$$

$$E \text{ (ton/yr)} = E \text{ (lb/hr)} * 1 \text{ ton/2000 lb} * 4380 \text{ hr/yr}$$

	EF (mg/body)	Body Equivalence (body/day)	Lb/Hr	TPY
HAPs	0.986	41.6	3.77E-03	8.26E-03

¹ This emission factor is the sum of individual emission factors for all applicable HAPs emitted from a natural gas fired animal crematorium.

**UNM Main Campus Title V Renewal
Above Ground Storage Tank Emission Rates
Emissions Data Unit 216-AST-1A**

Uncontrolled Emissions

Species	HAP wt. % in vapor (%) ⁽¹⁾	Emissions (tons/yr)
Unleaded Gasoline	--	1.1
Hexane	1.40%	1.54E-04
Benzene	0.40%	4.40E-05
Toluene	1.10%	1.21E-04
2,2,4 Trimethylpentane	0.70%	7.70E-05
Xylenes	0.40%	4.40E-05
Ethylbenzene	0.10%	1.10E-05
MTBE	8.70%	9.57E-04
Total HAPs	13.00%	1.43E-03

TANKS 4.0.9d Results

Controlled Emissions

Species	HAP wt. % in vapor (%)	Control Efficiency ⁽²⁾	Emissions (tons/yr)
Unleaded Gasoline		98%	2.20E-02
Hexane	1.40%	--	3.08E-06
Benzene	0.40%	--	8.80E-07
Toluene	1.10%	--	2.42E-06
2,2,4 Trimethylpentane	0.70%	--	1.54E-06
Xylenes	0.40%	--	8.80E-07
Ethylbenzene	0.10%	--	2.20E-07
Naphthalene	0.00%	--	0.00E+00
Cumene	0.00%	--	0.00E+00
MTBE	8.70%	--	1.91E-05
Total HAPs	13.00%	--	2.86E-05

Notes:

(1) Normal fuel percentages as found in EPA's "Technical Guidance - Stage II Vapor Recovery Systems of Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Table 3-2"

(2) Tank 216-AST-1A is equipped with a Stage 1 and Stage 2 Passive Vapor Recovery System.

AP-42 Section 7.1 "Liquid Storage Tanks"

TANKS 4.0.9d Software

UNM Main Campus Title V Renewal
Emissions Data Unpaved Parking Lots

Unpaved Parking Lots (Short Term Emissions)

Emission Unit	Spaces	Avg. hrs/ turnover	MVD (vel/hr)	Area (sqft)	Equiv. Length (miles)	VMT/hr ⁽¹⁾	Factor (lbs/VMT)	lb/hr
1-DL-4	60	2	30	2000	0.012	0.36	0.58	0.21
4-DL-2	265	4	66.25	30360	0.18	11.9	0.58	6.9
0-DL-1	20	4	5	9000	0.053	0.27	0.58	0.15
3-DL-1	120	4	30	226800	1.342	40.27	0.58	23.36
0-DL-1	20	4	5	5688	0.034	0.17	0.58	0.1
3-DL-1	23	4	5.75	3375	0.02	0.11	0.58	0.07
6-DL-1	20	4	5	10213	0.06	0.3	0.58	0.18
6-DL-2	30	8	3.75	12600	0.075	0.28	0.58	0.16
Total lb/hr								31.12

Unpaved Parking Lots (Long Term Emissions)

Emission Unit	Spaces	Avg. Hrs/ Turnover	MVD (vel/hr)	Area (sq ft)	Equiv. Length (miles)	VMT/hr ⁽¹⁾	Factor (lbs/VMT)	tons/yr ⁽²⁾
1-DL-4	60	2	30	2000	0.012	0.36	0.027	2.10E-02
4-DL-2	265	4	66.25	30360	0.18	11.9	0.027	7.04E-01
0-DL-1	20	4	5	9000	0.053	0.27	0.027	1.57E-02
3-DL-1	120	4	30	226800	1.342	40.27	0.027	2.38E+00
0-DL-1	20	4	5	5688	0.034	0.17	0.027	9.95E-03
3-DL-1	23	4	5.75	3375	0.02	0.11	0.027	6.79E-03
6-DL-1	20	4	5	10213	.06	0.3	0.027	1.79E-02
6-DL-2	30	8	3.75	12600	0.075	0.28	0.027	1.65E-02
Total TPY								3.17

Notes:

- (1) Vehicle miles traveled per hour calculated assuming each vehicle travels the equivalent road length once per hour.
- (2) Tons/yr based on 12 hours of traffic per day (4380 hrs/year)
- (3) Section 13.2.2 "Unpaved Roads"
- (4) The lots 233-DL-1 and Elks Lodge Demolition area that were added to UNM's Fugitive Dust Plan do not correspond to any additional vehicle miles traveled for haul roads.
- (5) The additional acreage added in UNM's Fugitive Dust Plan does not correspond to any additional vehicle miles traveled for haul roads.

4. STARTUP, SHUTDOWN, AND MAINTENANCE EMISSIONS

Since the last Title V renewal submitted in 2017, UNM has not modified their startup, shutdown, and maintenance emissions for any sources associated with the UNM Main campus or the ATCs permitted for UNM facilities. All SSM activities are not expected to create any emission limit deviations specified in the current Title V Operating Permit #0536-RN1.

5. FEE INFORMATION

Pursuant to NMAC 20.11.2 – There are no fee requirements for Title V renewal applications.

6. OPERATIONAL PLAN TO MITIGATE EMISSIONS

UNM minimizes emissions during startup, shutdown, and emergency upset & breakdown conditions by utilizing the following guidelines:

1. Design considerations; all systems at the Main Campus have been designed and constructed to meet established industry design standards and practices.
2. Preventative Maintenance; UNM has a preventive maintenance program in place. This program includes all systems that can potentially contribute to excessive emissions during startup, shutdown, an emergency conditions. Preventative maintenance programs are also intended to minimize conditions that could potentially lead to excessive startup times or an excessive number of startups, shutdowns, or malfunctions.
3. Improper Operation; Startup, shutdown, and emergency conditions resulting from improper or careless operation are minimized through job experience requirements and training programs that meet or exceed generally established industry practices.
4. Startup and Shutdown Operation; startup and shutdown procedures will not depart from normal operating conditions as specified by the equipment manufacturer.

During periods of excess emissions caused by emergency upsets or breakdown conditions, UNM will perform the following actions:

1. Minimization; UNM will make the maximum reasonable effort to minimize the magnitude and duration of excess emissions. This effort may include, but is not limited to, depending on the nature of the cause, use of off-shift and /or over-time labor and use of contract labor and contractors.
2. Causes; determine, to the extent possible, the cause(s) and corrective measure(s) of the condition resulting in the excess emissions.
3. Notification; notify the City of Albuquerque/Bernalillo County Air Quality Program of all periods of excess emissions per the notification requirements of 20.11.49.15 NMAC.

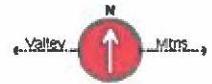
7. FACILITY PLOT PLANS



CENTRAL CAMPUS MAP

Planning & Campus Development :: Space Management Office :: spacemgt@unm.edu :: UPDATED 03-29-2013

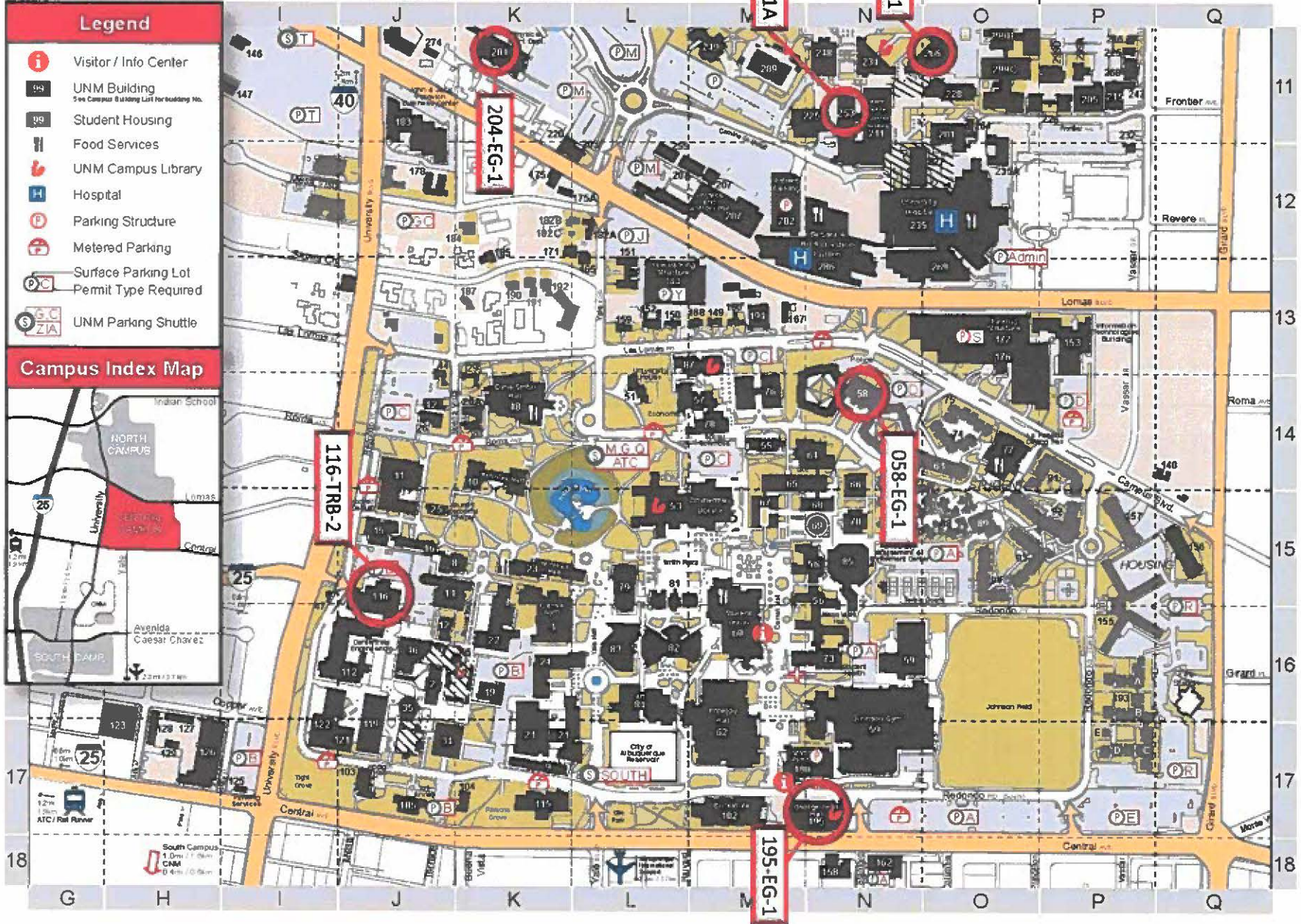
SCALE
500 ft



Legend

- Visitor / Info Center
- UNM Building
See Campus Building List for building No.
- Student Housing
- Food Services
- UNM Campus Library
- Hospital
- Parking Structure
- Metered Parking
- Surface Parking Lot
- Permit Type Required
- UNM Parking Shuttle

Campus Index Map





BLDG #	BUILDING NAME	GRID	BLDG #	BUILDING NAME	GRID
2	ENGINEERING AND SCIENCE COMPUTER POD (ESCP)	J-16	105	ART ANNEX (ARTX)	J-17
4	ELIZABETH WATERS CENTER FOR DANCE AT CARLSLE OYMAN-ASHBURN (CARL)	K-36	112	CENTENNIAL ENGINEERING CENTER (CENT)	J-16
5	BANDELIER HALL EAST (BANDE)	J-15	115	COMMUNICATION AND JOURNALISM (COMMJ)	K-17
9	MARRON HALL (MARR)	K-37	116	FORD UTILITIES CENTER	J-18
10	SCHOLES HALL (SCHL)	K-34	119	FARRIS ENGINEERING CENTER (FEC)	J-17
11	ANTHROPOLOGY (ANTHRO)	J-14	122	MECHANICAL ENGINEERING (MECH)	J-17
12	ANTHROPOLOGY ANNEX (ANTHX)	J-18	123	MATTON SCULPTURE CENTER (MATTOX)	H-17
14	SCIENCE & MATHEMATICS LEARNING CENTER (SMLC)	J-15	125	PARKING & TRANSPORTATION SERVICES	I-17
15	HOBBS CENTER FOR ARCHAEOLOGY RESEARCH (HCB)	J-15	126	HIGH PERFORMANCE COMPUTING ART, RESEARCH, TECH & SCI LAB	H-17
16	BANDELIER HALL WEST (BANDEW)	J-15	140	HUBER HOUSE	P-14
19	BIOLOGY ANNEX (BIOANX)	K-14	144	VALE PARKING STRUCTURE	L-13
20	INTERNAL AUDIT	K-14	149	UNM INFORMATION ASSURANCE PROGRAMS	M-15
20A	601 BUENA VISTA DR. N.E.	K-14	150	INSTITUTE FOR SOCIAL RESEARCH (ISR)	L-13
21	CASTETTER HALL (CAST)	K-17	151	NAVAL SCIENCE (NAVAL)	L-13
22	CLARK HALL (CLARK)	K-15	152	JOHNSON GALLERY RWJF (JONGAL)	L-13
23	MITCHELL HALL (MITCH)	K-15	153	INFORMATION TECHNOLOGIES BUILDING (ITB)	P-13
24	NORTHROP HALL (NTRP)	K-16	155	CORONADO HALL (DORMITORY)	P-16
25	ALUMNI MEMORIAL CHAPEL (ALUMNI)	J-15	156	ONATE HALL (ONATE)	Q-15
26	UNM PRESS & OFFICE OF RESEARCH	J-14	157	ALVARADO HALL (DORMITORY) (ALVRDO)	P-15
29	DISPUTE RESOLUTION (DISP)	K-14	158	ROBERT HARTUNG BUILDING (HART)	N-18
34	LOGAN HALL (LOGAN)	J-17	159	AEROSPACE STUDIES BUILDING (AERO)	F-12
35	REGENT HALL (REGI)	J-16	160	UNIVERSITY CLUB (UCLUB)	M-13
42	EQUAL OPPORTUNITY PROGRAMS (EOP)	J-14	162	TAMARIND INSTITUTE	N-18
44	THE WHITE HOUSE	J-15	165	LATIN AMERICAN IBERIAN INSTITUTE (LAID)	L-13
46	ELECTRICAL AND COMPUTER ENGINEERING CENTENNIAL LIBRARY (EECT)	J-15	168	BUREAU OF BUSINESS AND ECONOMIC RESEARCH DATA BANK (DATA)	M-11
48	DANE SMITH HALL (DSH)	K-14	171	SOUTHWEST HISPANIC RESEARCH INSTITUTE AND CHICANO STUDIES (SHRI)	K-12
51	UNIVERSITY HOUSE (UNIV)	L-14	172	LOMAS PARKING STRUCTURE	O-13
53	ZIMMERMAN LIBRARY (ZIMM)	L-15	173	ARMY ROTC (ARMY)	K-12
55	COLLABORATIVE TEACHING AND LEARNING BUILDING	M-14	175, 175A	UNM RESIDENT THEATRE GROUP (TRUCKLOCK)	J-12
56	MESA VISTA HALL (MVS)	N-16	182A, B, C	LATIN AMERICAN DATA BASE AND LATIN AMERICAN OUTREACH	L-12
57	ECONOMICS (ECON)	M-14	183	JOHN AND JUNE PEROVICH BUSINESS CENTER	J-11
58	HOKONA HALL (ZUNI-OFFICES, ZIA-DORMITORY) (HOKW)	N-14	184	COUNSELING, ASSISTANCE AND REFERRAL SERVICE (CARS)	K-12
59	JOHNSON CENTER (JOHNS)	N-17	185	CENTER FOR SCIENCE, TECHNOLOGY AND POLICY	K-12
60	STUDENT UNION BUILDING (SU) (NML)	M-10	187	EXTENDED UNIVERSITY	K-13
61	SANTA CLARA HALL DORMITORY	O-14	190	UNM PUBLIC EVENTS - POPEJOY	K-13
62	CENTER FOR THE ARTS (POPEJOY, KELLER HALL, FINE ARTS MUSEUM) (CFART)	M-17	191	HOUSE OF PREVENTION EPIDEMIOLOGY (HOPE)	K-13
64	TECHNOLOGY & EDUCATION CENTER (TECH)	N-14	192	PSYCHOLOGY CLINIC - AODRA CRISIS CENTER (PSYC)	K-13
65	TRAVELSTEAD HALL (TRAV)	M-14	193A-E	REDONDO VILLAGE STUDENT RESIDENCES	P-16
66	SIMPSON HALL (SIMP)	N-14	195	GEORGE PEARL HALL (PEARL)	N-17
67	EDUCATION CLASSROOMS (EDUC)	M-15	196	PARKING STRUCTURE - UNM WELCOME CENTER	M-17
68	MASLEY HALL (MASLEY)	N-15			
69	KIVA (KIVA)	N-15			
70	MANZANITA CENTER (MANZ)	N-15			
71	SANTA ANA HALL (DORMITORY)	P-15			
73	STUDENT HEALTH CENTER AND UNDERGRADUATE STUDIES (SHC)	M-16			
74	LAGUNA HALL (DORMITORY) (LAGUNA)	O-14			
75	DEVARGAS HALL (DORMITORY) (DEVARG)	O-14			
76	ANDERSON SCHOOL OF MANAGEMENT (ASSM)	M-14			
77	LA POSADA DINING HALL	O-14			
78	SOCIAL SCIENCES (SSCO)	M-14			
79	ORTEGA HALL (ORTG)	L-15			
81	HEJANITES (HEJN)	L-15			
82	WOODWARD LECTURE HALL (WOOD)	L-16			
83	CONSORTIUM FOR ENVIRO RESEARCH, INFORMATICS & ART (CERIA)	L-16			
84	ART (ART)	L-16			
85	UNIVERSITY ADVISEMENT & ENRICHMENT CENTER (U AEC)	N-15			
87	ANDERSON GRADUATE SCHOOL OF MANAGEMENT - PARISH LIBRARY (GSM)	M-13			
88, 89, 90	STUDENT RESIDENCE CENTER (SRC)	O-15			
91 - 94	CASAS DEL RIO	O-15			
102	BOOKSTORE	M-17			
103	HODGINS HALL (HODGIN)	J-17			
104	SARA RAYMONDS HALL (SARR)	K-17			

BLDG #	BUILDING NAME	GRID
N-18	ADVISEMENT & ENRICHMENT (BLDG #45)	N-18
M-17	EXPERIMENTAL THEATRE (CENTER FOR THE ARTS - BLDG #62)	M-17
N-17	FINE ARTS LIBRARY (GEORGE PEARL HALL - BLDG #195)	N-17
K-16	GEOLOGY MUSEUM (NORTHROP HALL - BLDG #24)	K-16
K-17	GREENHOUSE CONSERVATORY (CASTETTER HALL - BLDG #21)	K-17
J-11	HUMAN RESOURCES JOHN AND JUNE PEROVICH BUSINESS CENTER - BLDG #183	J-11
M-17	JOHNSON GALLERY (CENTER FOR THE ARTS - BLDG #62)	M-17
M-17	KELLER HALL (CENTER FOR THE ARTS - BLDG #62)	M-17
N-14	MASLEY HALL ART GALLERY (BLDG #61)	N-14
J-14	MAXWELL MUSEUM (ANTHROPOLOGY - BLDG #11)	J-14
K-16	METEORIC MUSEUM (NORTHROP HALL - BLDG #24)	K-16
M-17	POPEJOY HALL (CENTER FOR THE ARTS - BLDG #62)	M-17
M-17	RODEY THEATRE (CENTER FOR THE ARTS - BLDG #62)	M-17
L-16	SOMMERS GALLERY (ART - BLDG #44)	L-16
N-18	TAMARIND INSTITUTE GALLERY (TAMARIND INSTITUTE - BLDG #162)	N-18
M-17	UNM ART MUSEUM (CENTER FOR THE ARTS - BLDG #62)	M-17
M-17	WELCOME CENTER (BLDG #195)	M-17

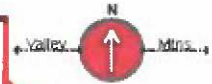
HOSPITAL
 LIBRARY
 PARKING
 INFORMATION
 FOOD/DINING



NORTH CAMPUS MAP

Planning & Campus Development | Space Management Office | spacemgmt@unm.edu | UPDATED: 02-28-2017

SCALE
500 ft



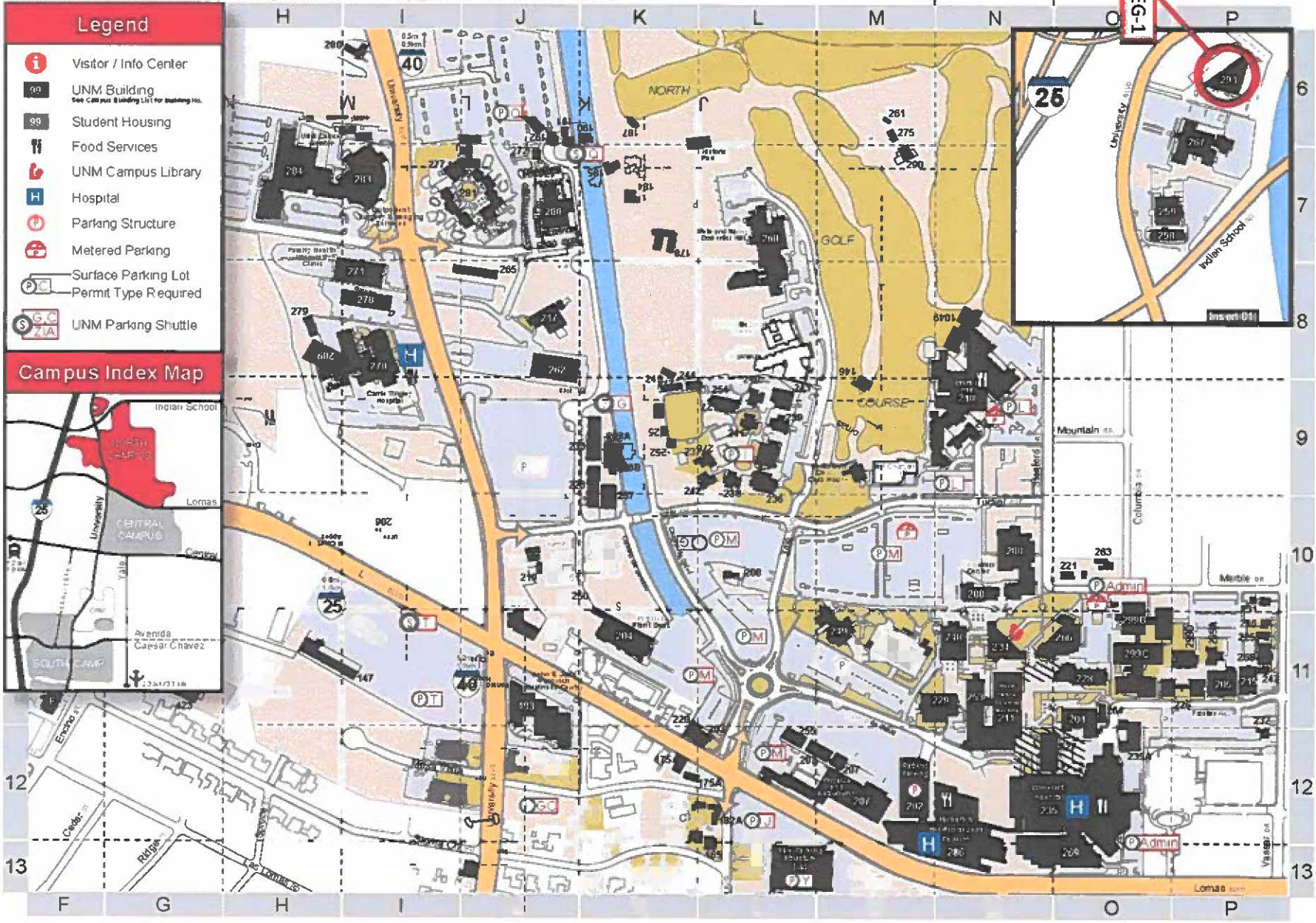
291-EG-1

Legend

- Visitor / Info Center
- UNM Building
See Campus Building List for building No.
- Student Housing
- Food Services
- UNM Campus Library
- Hospital
- Parking Structure
- Metered Parking
- Surface Parking Lot
Permit Type Required
- UNM Parking Shuttle

Campus Index Map

The index map shows the location of the North Campus (highlighted in red) relative to the Central Campus and South Campus. It includes major roads like I-25, Avenida Cesar Chavez, and University Blvd.





#	BUILDING NAME	GRID	#	BUILDING NAME	GRID
201	SCHOOL OF MEDICINE BUILDING NO 2 (SOSM2)	O-11	258	UNM DENTAL CLINIC	J-7
202	UNM PARKING STRUCTURE	M-12	289	INNOVATION, DISCOVERY AND TRAINING COMPLEX (IDTC)	M-11
203	PLANNING AND CAMPUS DEVELOPMENT (PCD)	K-12	291	BUILDING NAME TBD (1650 UNIVERSITY BLVD.)	PSST 1
204	SERVICE BUILDING (PPD, OCP, SERV)	K-11	299A-D	MENTAL HEALTH CENTER	P-11
205	RESEARCH INCUBATOR BUILDING (RIIB)	P-11			
206	NORTH GOLF COURSE CLUB HOUSE (NGOLF)	M-9			
207	PHYSICS AND ASTRONOMY (PANDA)	M-12			
208	OBSERVATORY (OBSV)	L-10			
211	BASIC MEDICAL SCIENCES BUILDING (BMSB)	N-11			
215	LANDSCAPE STORAGE BUILDING	J-10			
215	MULTIDISCIPLINARY RESEARCH FACILITY (MRF)	N-12			
216	AUTOMOTIVE (AUTOMO)	K-10			
217	KNME TV STUDIO (KNME)	J-8			
218	BRATTON HALL (BRATTON)	N-9			
221	HSC PUBLIC AFFAIRS (HSCPA)	O-10			
222	CHILDREN'S PSYCHIATRIC CENTER OFFICE AND STORAGE	L-9			
225	INSTITUTE FOR ETHICS (IETH)	P-11			
226	SURGE BUILDING (SURGE)	O-11			
227	CLINICAL & TRANSLATIONAL SCIENCE CENTER (CTSC)	N-12			
228	NURSING & PHARMACY (NURPH)	O-11			
229	CANCER RESEARCH FACILITY (CRF)	M-11			
230	NEW MEXICO LAW CENTER (NMLAW)	N-9			
231	PSYCHIATRY (EEG)	P-10			
232	HEALTH SCIENCES CENTER UNIVERSITY COUNSEL (HSCUC)	P-12			
233	SAFETY AND RISK SERVICES (SRS) (SREA)	J-9			
234	HEALTH SCIENCES CENTER LIBRARY AND INFORMATICS CENTER (HSCLIB)	N-11			
235	UNIVERSITY OF NEW MEXICO HOSPITAL (UNMH)	O-12			
236-245	CHILDREN'S PSYCHIATRIC CENTER (CPH)	L-9			
246	UNM MENTAL HEALTH CENTER PROGRAMS (MHCP)	P-11			
247	PHARMACY PROGRAMS (PHARM)	P-11			
248	FAMILY PRACTICE CENTER (FFC)	N-11			
249	NOVITSKI HALL (NOVH)	M-11			
253	BIO MEDICAL RESEARCH FACILITY (BRF)	N-11			
254	CHILDREN'S PSYCHIATRIC CENTER DAY TREATMENT CENTER (CPDTC)	L-9			
255	INFORMATION TECHNOLOGIES NORTH (ITN)	L-12			
258	CONTINUING EDUCATION SOUTH (CESOT)	ENSET 1			
259	CONTINUING EDUCATION (CENOR)	ENSET 1			
260	PETE AND NANCY DOMENICI HALL (DOMEN)	L-7			
262	UNIVERSITY SERVICES RECORDS MANAGEMENT AND POSTAL SERVICES INVENTORY	J-8			
263	TELEMEDICINE PROGRAM (TELEMT)	O-10			
264	DIABETES CONTROL AND COMPLICATIONS TRIAL (DIABET)	O-11			
265	KNME STORE & DEVELOPMENT	J-7			
266	HEALTH SCIENCES AND SERVICES BUILDING (HSSB)	O-11			
267	UNIVERSITY SERVICES (SURPL'S PROPERTY)	O-8			
268	PSYCHIATRY	P-11			
269	UNM HOSPITAL AMBULATORY CARE CENTER (ACC)	O-13			
270	CARRIE TINGLEY HOSPITAL (CTHOSP)	L-8			
271	FAMILY HEALTH UNIVERSITY CLINIC (FAMILY)	L-8			
273	CONTRACT ARCHITECTURE (CONTRAR)	J-11			
277	CHILD CARE CENTER	L-7			
278	UNM PATIENT FINANCIAL SERVICES - SATELLITE OFFICE	L-8			
279	CASITA DE MILAGROS	H-8			
280	CENTER FOR WILDLIFE LAW (WILDLAW)	L-6			
281	CHILD CARE CENTER	L-8			
283	OUTPATIENT SURGERY & DIAGNOSIS SERVICES (OSIS)	L-7			
284	UNM CANCER CENTER	H-7			
285	STATE TRI SERVICES LAB	F-6			

UNIVERSITY OF NEW MEXICO

HOSPITAL LIBRARY PARKING INFORMATION FOOD/DINING

8. ALTERNATIVE OPERATING SCENARIOS

The English boilers located at Ford Energy Center (116-BLR-1A and 116-BLR-2A) may use back-up #2 diesel fuel for short periods during boiler tune-up, testing and maintenance personnel training. ATC Permit #1643-M1, Conditions I.1.m)1v and v1, limit firing of each boiler with #2 diesel fuel to a maximum 48 hours per year during periodic testing.

Additionally, the New Mexico Gas Company can request that UNM curtail the use of natural gas in the event of an area-wide shortage. Under those circumstances, which would be beyond UNM's control, UNM may switch over to the temporary use of the emergency backup, diesel-fuel English boilers up to the maximum limit of 35,109 gallons per boiler per 12-month rolling period, as described in ATC Permit #1643-M1.

No other alternative operating scenarios have been identified for the UNM Main Campus.

9. AIR DISPERSION MODELING WAIVER

A modeling waiver was submitted to the department on April 27, 2022. The justification for this waiver request is that all of the above referenced changes to UNM have resulted in emission decreases with no changes to existing stack parameters. UNM has not modified any of the existing sources under the Title V permit except for the Technical Revision submitted for ATC#0490-RV1. This technical revision was submitted to reduce the boiler permitted for a heat duty of 8 MMBtu/hr boiler to to 4 MMBtu/hr, which decreased the total facility emissions. The waiver can be found in this section.



City of Albuquerque – Environmental Health Department

Air Quality Program

Air Dispersion Modeling Waiver Request Form



The following information is required to ensure that the modeling section of the Air Quality Program can make a reliable determination regarding whether modeling will be required for a project and, if so, what pollutants will need to be modeled.

Applicant Company: University of New Mexico

Facility Name: UNM – Main Campus

Describe the proposed change/modification and why you believe modeling should be waived.

On behalf of the University of New Mexico, Trinity Consultants, Inc. (Trinity) is submitting a modeling waiver for the UNM Main Campus located at Scholes Hall 160, Bldg. 10, 1800 Roma NE, Albuquerque, NM. This waiver is being submitted pursuant to the renewal of the facility’s Title V Operating Permit #536-M1 under 20.2.11.42.12(2)(a)(ii) NMAC. Below is a compilation of the units that are modified or removed from the facility with in the past five years at the UNM Main Campus.

Table 1. Units modified/removed from Title V Permit #536-RN1

Unit - Permit#	Modification Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
338-BLR-1-ATC # 0490-RVI	Technical Revision turned into CABQ	Riello	AR-4000	19-HE086634619	2020	07/2020	4 MMBtu/Hr
034-EG-1-ATC#1981-M1	Unit Replaced	Cummins	4BTA3.3G7	72046554	02/2019	03/2020	99 hp
083-EG-1-ATC#1174	Model Correction	Generac	A5399 12.0L	6d24-297589	03/2000	03/2001	325 Hp
266-EG-1-ATC#1980-M1	Model and Serial Correction	Generac	63060 13.3L	EK100 19333	1988	1988	240 HP
255 EG-1-	Removed and canceled	N/A	N/A	N/A	N/A	N/A	N/A
227-EG-1-ATC#1979-1TR	Replaced	Cummins	QSL9-G2 NR3	74262461	01/2018	2018	364 hp
194-EG-1-REG#1700	Incorrect power rating	Perkins	2400/1800	U273145J	2003	2003	95 hp (70.6 kw)

Air Dispersion Modeling Waiver Request Form

Unit - Permit#	Modification Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
053-EG-1-AQCP#3299	Incorrect power rating	Caterpillar	C4.4	E5G00337	11/2016	03/2017	161 hp (120.1 KW)
057-EG-1-AQCP#3300	Incorrect power rating	Caterpillar	C4.4	E3L01203	2016	03/2017	86 hp (64 kw)
072-EG-1-AQCP#3300	Model and Serial Correction	Caterpillar	C9	S9P01337	10/2016	03/2017	480 hp
234-EG-1A-AQCP#1968-M1	Unit Replaced	Kubota	V2203	7HY1375	02/2018	04/2018	36 hp (26.9 kw)
228-EG1-REG#1969	Model and Serial Correction	Allis Chalmers	2800 MK I	2D-67951	Pre 1975	1975	60 hp
122-EG-1-REG#1970	Replaced	Cummins	4BTAA3.3G7	72047653	03/2019	03/2020	99 hp
046-EG-1-ATC#1971-M1	Replaced	Cummins	4BTAA3.3G7	72047647	03/2019	03/2020	99 HP
248-EG-1-ATC#1972-M1	Replaced	Cummins	4BT3.3G5	72047820	03/2019	03/2020	69 HP
081-EG-1-	Removed and canceled	N/A	N/A	N/A	N/A	N/A	N/A
082-EG-1-	Removed and canceled	N/A	N/A	N/A	N/A	N/A	N/A
211-EG-2-REG#1978	Correct Serial	Cummins/Ford	LSG-8751-6005-A	22533 S-22-RH	2001	2001	129 hp
200-EG-1-ATC#2038	Correct Serial	Caterpillar	C6.6	E6M01669	05/2019	2010	275 hp (205 KW)
211-EG-3-REG#2167	Correct Serial	Kohler	30 RGZ	GMI266242 2	01/2005	07/2012	75 hp
289-EG-1-ATC#2176	Correct Model	Cummins	QSL9-G3 NR3	73274655	07/2011	07/2012	399 hp

Air Dispersion Modeling Waiver Request Form

Unit - Permit#	Modification Description	Manufacturer	Model Number	Serial Number	Date of MFG	Date of Installation	Rated Process Rate
302-EG-1A-AQCP#1692-MI-1AR	Correct Model	Cummins	QSK50-G4	75702-587	02/2009	2010	2020 hp (rated) 1848 hp Governed
191-EG-1A-ATC#3019	Correct Model and Serial	Cummins	BN5XS.7202B C	G110232924	2011	2013	25 hp
253-EG-2-ATC#3020	Correct Model and Serial	Cummins	GTA855E	25371726	05/2012	10/2012	383 hp

The above referenced units have been modified or removed, resulting in reduced the emissions for the UNM total emissions include 338-BLR-1-ATC # 0490-RV1, 255 EG-1-AQCP#1750-1AR, 081-EG-1-REG#1973, and 082-EG-1-REG#1974. Tables 2 and 3 below shows the total change in pounds per hour (lb/hr) and tons per year (tpy) emission rates. Additionally, Table X captures the total lb/hr emission changes for these units but does not include the total facility wide changes.

Table 2. Reduction of emissions for boiler under ATC#0490-RV1

Units	NOx		CO		VOC		SOx		PM10		PM2.5	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
0490RV1 Boiler New	0.39	1.72	0.33	1.44	0.02	0.09	0.002	0.01	0.03	0.013	0.03	0.013
0490RV1 Boiler Old	0.64	2.8	0.54	2.37	0.04	0.18	0.0038	0.018	0.05	0.22	0.05	0.22
Reductions in Emissions	-0.25	-1.08	-0.21	-0.93	-0.02	-0.09	-0.0018	-0.008	-0.02	-0.20	-0.02	-0.21

Table 3. Reduction of emissions for removal of 255 EG-1-AQCP#1750-1AR, 081-EG-1-REG#1973, and 082-EG-1-REG#1974.

Units	NOx		CO		VOC		SOx		PM10		PM2.5	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
255 EG-1-AQCP#1750-1AR	5.76	0.58	4.85	0.49	0.21	0.021	0.03	0.003	0.02	0.0021	0.02	0.0021
081-EG-1-REG#1973	0.54	0.054	0.9	0.09	0.01	0.001	0.00014	0.000014	0.0047	0.00047	0.0047	0.00047
082-EG-1-REG#1974	0.54	0.054	0.9	0.09	0.01	0.001	0.00014	0.000014	0.0047	0.00047	0.0047	0.00047
Total Emission Reductions	-6.84	-0.69	-6.65	-0.67	-0.23	-0.023	-0.030	-0.0030	-0.029	-0.0030	-0.029	-0.0030

Air Dispersion Modeling Waiver Request Form

Table 4. Total facility wide emission reductions.

Units	NO _x		CO		VOC		SO _x		PM ₁₀		PM _{2.5}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
0536-RN1 Permitted units	255.78	138.05	221.72	160.53	20.39	52.81	25.38	31.42	21.41	15.50	21.41	15.50
New Emission Rate	248.69	136.28	214.86	158.93	20.14	52.70	25.35	31.41	21.36	15.29	21.36	15.29
Total Reduction in Emissions	-7.09	-1.77	-6.86	-1.60	-0.25	-0.11	-0.032	0.011	-0.049	-0.21	-0.049	-0.21

UNM Title V renewal date is approaching and under 20.11.42.12.(j).ii NMAC on May 14, 2022. The justification for this waiver request is that all of the above referenced changes to UNM have resulted in emission decreases with no changes to existing stack parameters. UNM has not modified any of the existing sources under the Title V permit except for the technical revision submitted for ATC#0490-RV1. This technical revision was submitted to reduce the boiler permitted for a heat duty of 8 MMBtu/hr boiler to to 4 MMBtu/hr, which decreased the total facility emissions. Please refer to Table 2 for the total emission reductions with the decreased boiler heat duty submitted with the technical revision. UNM has modified and removed multiple emergency generators at the facility, however these units are not required to be modeled pursuant to 20.2.11.39 NMAC. These changes and removals have been documented in Table 1 of this waiver request. The units that have been removed from the facility include 255 EG-I-AQCP#1750-IAR, 081-EG-I-REG#1973, and 082-EG-I-REG#1974. The subsequent reductions in emissions can be referenced on Table 3. The updates will be included in this Title V application will represent the changes submitted for each ATC permit that has been submitted for the generators that have been removed. However, with these modifications to the facility there are no increases in emissions and this facility has already demonstrated compliance with all applicable National and New Mexico Ambient Air Quality standards per the last submittal in 2017 for UNM's Title V renewal. Per the estimated emission reductions above under Table 4 the current emission rates are 255.78 lb/hr and 138.05 tpy for NO₂; 221.72 lb/hr and 160.53 tpy for CO; 25.38 lb/hr and 31.42 tpy for SO₂; 21.41 lb/hr and 15.50 tpy for PM₁₀ and PM_{2.5} (Permit 0536-RN1, Section 3.2.1). The new proposed emission rates that are being submitted can be referenced under Table 4, these will be 248.69 lb/hr and 136.28 tpy for NO₂; 214.86 lb/hr and 158.93 tpy for CO; 25.35 lb/hr and 31.41 tpy for SO₂; 21.36 lb/hr and 15.29 tpy for PM₁₀ and PM_{2.5}. With these decreases and previous modeling that have demonstrated compliance this facility is requesting a full modeling analysis waiver.

Attach a map of the facility, including a layout of sources and buildings. If this is a relocation, be sure to include new location address.

A map of the facility is attached.

Are there changes between current emissions and emissions with the proposed change? If so, explain below and fill out Table X.

Yes, emissions for unit 338-BLR-I are being reduced. Please reference Table X for lb/hr emission reductions and Table 2 for total emission reductions.

Are there changes in the stack parameters between existing and proposed equipment? If so, explain below and fill out Table Y.

No, stacks of existing equipment have not been modified or constructed. The technical revision submitted to modify ATC#0490-RV1 was set to reduce the boiler heat duty, the stack on this unit will remain unchanged.

Air Dispersion Modeling Waiver Request Form

Are there any changes to fugitive sources such as haul roads or piles? If so, explain below and fill out Table Z.

Yes, UNM has multiple haul roads; A fugitive dust control programmatic permit was submitted in January 2021 to add additional acreage for a total of 11.64 acres associated with the fugitive dust control programmatic permit. The additional acreage does not correspond to any additional vehicle miles traveled for haul roads. Please see Table Z.

What fuel will be used in any proposed engine/generator or combustion source and is this a change from the previous equipment?

The units at this facility use primarily natural gas and diesel for their fuel sources. These are not changing from the previous Title V renewal.

Is the property surrounded by a fence or some other barrier that restricts access?

The UNM facility grounds are open to the public, however access to multiple units are restricted by location on the premises of UNM.

Are there any other sources or facilities located on the same site?

UNM owns and operates multiple emission sources under several ATC permits and these are all combined under the same Title V Operating permit. No other company or organization operate on the facility grounds.

Operating hours and days. Is this a change?

UNM will remain operating under an 8760 hours per year schedule.

Standards requested to be waived from modeling.

Pollutant		Averaging Period(s)
NO ₂	<input checked="" type="checkbox"/>	1-HR, 24-HR, and Annual.
SO ₂	<input checked="" type="checkbox"/>	1-HR, 3-HR, 24-HR, and Annual
CO	<input checked="" type="checkbox"/>	1-HR and 8-HR
PM ₁₀	<input checked="" type="checkbox"/>	24-HR and Annual
PM _{2.5}	<input checked="" type="checkbox"/>	24-HR and Annual
Lead	<input checked="" type="checkbox"/>	Facility is not a source of Lead.
H ₂ S	<input checked="" type="checkbox"/>	Facility is not a source of H ₂ S.

Any comments regarding standards. No.

Issuance date of current permit. If known, was modeling completed as part of this permit application?

The last Title V operating permit #0536-RN1 was ruled complete May 14th, 2018. This permit application submitted modeling that had been used for modifying ATC#1643-M1, which had modeled all emission units at the facility.

Air Dispersion Modeling Waiver Request Form

Are any generators emergency generators that are only used to backup PNM power or are they used as part of the process?

All emergency generators at the facility are used only for backup power in the event of loss of power from PNM.

Are boilers used for process or for comfort heat?

All permitted boilers are used for process heating.

Table X. Emissions Changes

Unit No.	NO _x lb/hr	CO lb/hr	VOC lb/hr	SO ₂ lb/hr	PM ₁₀ lb/hr	PM _{2.5} lb/hr	Pb lb/hr	H ₂ S lb/hr	
Equipment					-0.049	21.36			
REG-1-ATC # REG-1-RVI	0.64	0.54	0.04	0.0038	0.05	0.05	-	-	
REG-1-750-1A REG# 73	5.76	4.85	0.21	0.03	0.02	0.0021	-	-	
REG# 73	0.54	0.9	0.01	0.00014	0.0047	0.00047	-	-	
REG# 74	0.54	0.9	0.01	0.00014	0.0047	0.00047	-	-	
Equipment					-0.032	25.35			
Units below have been modified or removed.									
REG-1-ATC # REG-1-RVI	0.39	0.33	0.02	0.002	0.03	0.03	-	-	
REG-1-750-1A REG# 73	Removed from facility.					-0.25	20.14		
REG# 73	Removed from facility.								
REG# 74	Removed from facility.								
Emission Locations					-6.86	214.86			
City Wide Emissions Pre- Production	255.78	221.72	20.39	25.38	21.41	21.41	-	-	
City Wide Emissions Post- Production					-7.09	248.69	-	-	

Table Y. Equipment Parameters

O, NOx, SO, etc)	UTM Location of Source	Control Equipment	Control Efficiency	Stack Height & Diameter in feet	Stack Temp.	Stack Velocity & Exit Direction
SO ₂ , PM _{2.5}	351,007 m E. 3,882,032 m N	N/A	N/A	H-30.0 ft D-1.0 ft	300 F	V-80 ft/s Exit-Vertical
N/A This unit has been removed from the facility.						
N/A This unit has been removed from the facility.						
N/A - This unit has been removed from the facility.						
N/A No new units have been constructed or modified.						

Table Z. Fugitive Sources (crush

Pollutant (CO, NOx, SO2, PM10, etc.)	UTM Location of Source	Control Method			Involved	Type of Transport Into/Out of Property
N/A No modifications are proposed						

10. INSIGNIFICANT ACTIVITIES

UNM's Main Campus has identified the following emission sources as insignificant activities pursuant to the Albuquerque Environmental Health Department, Air Quality Program's List of Insignificant Activities, revised January 3, 1996.

These units are either:

1. Fuel burning equipment using gaseous fuel and having a design rate of less than or equal to 5 MM Btu/hr; or
2. Food service and cafeteria activities

Table 8: Insignificant Boilers

Source	Location	Fuel	MMBtu/hr
026-BLR-1	Human Resources (personnel)	Natural Gas	0.5
126-BLR-1	Art Lab	Natural Gas	1.05
151-BLR-1	Naval ROTC	Natural Gas	0.67
152-BLR-2	Jonson Gallery	Natural Gas	0.16
178-BLR-1	Sigma Phi Epsilon (178)	Natural Gas	0.3
178-BLR-2	Sigma Phi Epsilon (178)	Natural Gas	0.175
178-BLR-3	Sigma Phi Epsilon (178)	Natural Gas	0.15
179-BLR-1	Fraternity	Natural Gas	0.82
204-BLR-1	Service Building (PPD)	Natural Gas	1.75
216-BLR-1	Automotive	Natural Gas	1.82
259-H-8	Continuing Ed.	Natural Gas	3.85
260-BLR-1	Pete Domenici Hall	Natural Gas	1.9
260-BLR-2	Pete Domenici Hall	Natural Gas	1.9
284-BLR-1	Cancer Research Center II	Natural Gas	3.75
284-BLR-2	Cancer Research Center II	Natural Gas	3.75
284-BLR-3	Cancer Research Center	Natural Gas	0.25
284-BLR-4	Cancer Research Center	Natural Gas	0.25
301-H-XX	University Stadium	Natural Gas	2.84
302-BLR-1	The Pit	Natural Gas	0.6
302-BLR-1A	The Pit	Natural Gas	1.5
302-H-1	The Pit	Natural Gas	2
302-H-XX	The Pit	Natural Gas	< 14.32
307-BLR-1	Athletics	Natural Gas	3.34
307-BLR-2	Athletics	Natural Gas	0.96
307-H-1	Athletics	Natural Gas	2.22
308-BLR-1	University Stadium	Natural Gas	0.49
308-BLR-2	University Stadium	Natural Gas	0.49
308-BLR-3	University Stadium	Natural Gas	2.01
308-BLR-4	University Stadium	Natural Gas	2.01
308-BLR-5	University Stadium	Natural Gas	1.47

Source	Location	Fuel	MMBtu/hr
329-BLR-1	Student Family Housing	Natural Gas	4.05
329-BLR-2	Student Family Housing	Natural Gas	4.05
329-BLR-3	Student Family Housing	Natural Gas	4.05
332-BLR-1	Sci & Tech Park	Natural Gas	0.72
332-H-1	Sci & Tech Park	Natural Gas	0.4
333-BLR-1	Sci & Tech Park	Natural Gas	0.72
337-BLR-1	Sci & Tech Park	Natural Gas	0.97
339-BLR-1	Sci & Tech Park	Natural Gas	4
341-BLR-1	MTTC	Natural Gas	3.4

Table 9: Insignificant Heaters

Source	Location	Fuel	MMBtu/hr
004-H-1	Carlisle Gymnasium	Natural Gas	1.20E-01
004-H1	Carlisle Gymnasium	Natural Gas	1.20E-01
004-H1	Carlisle Gymnasium	Natural Gas	1.20E-01
004-H1	Carlisle Gymnasium	Natural Gas	1.20E-01
011-H-1	Anthropology	Natural Gas	4.00E-02
011-H-1	Anthropology	Natural Gas	4.00E-02
011-H-1	Anthropology	Natural Gas	2.00E-01
026-H-1	Human Resources (personnel)	Natural Gas	1.50E-01
027-H-1	University Coffee Shop	Natural Gas	1.00E-01
042-H-1	Materials Management (purchasing)	Natural Gas	1.00E-01
042-H-2	Materials Management (purchasing)	Natural Gas	1.25E-01
043-H-1	African American Studies	Natural Gas	1.00E-01
051-H-1	University House (president's)	Natural Gas	7.60E-02
051-H-2	University House (president's)	Natural Gas	7.50E-02
051-H-3	University House (president's)	Natural Gas	5.00E-02
051-H-4	University House (president's)	Natural Gas	1.90E-02
051-H-5	University House (president's)	Natural Gas	1.20E-01
063-H-1	Education Office	Natural Gas	5.00E-02
064-K-1	Industrial Arts	Natural Gas	8.50E-04
064-K-2a	Industrial Arts	Natural Gas	1.75E-03
064-K-2b	Industrial Arts	Natural Gas	1.75E-03
064-K-3a	Industrial Arts	Natural Gas	2.50E-03
064-K-3b	Industrial Arts	Natural Gas	2.50E-03
064-K-4a	Industrial Arts	Natural Gas	2.50E-03
064-K-4b	Industrial Arts	Natural Gas	2.50E-03
066-H-1	Simpson Hall (counseling and family studies)	Natural Gas	3.55E-02
070-H-1	Manzanita Center (Educational Lab)	Natural Gas	5.00E-02
084-H-1	Art	Natural Gas	2.31E-01
084-H-10	Art	Natural Gas	1.73E-01
084-H-11	Art	Natural Gas	1.54E-01
084-H-12	Art	Natural Gas	5.78E-02
084-H-13	Art	Natural Gas	2.34E-01

Source	Location	Fuel	MMBtu/hr
084-H-14	Art	Natural Gas	1.76E-01
084-H-15	Art	Natural Gas	2.31E-01
084-H-16	Art	Natural Gas	3.08E-01
084-H-17	Art	Natural Gas	3.08E-01
084-H-18	Art	Natural Gas	3.08E-01
084-H-19	Art	Natural Gas	1.16E-01
084-H-2	Art	Natural Gas	5.78E-02
084-H-20	Art	Natural Gas	5.78E-02
084-H-21	Art	Natural Gas	1.93E-01
084-H-22	Art	Natural Gas	2.70E-01
084-H-23	Art	Natural Gas	2.70E-01
084-H-24	Art	Natural Gas	7.70E-02
084-H-25	Art	Natural Gas	3.08E-01
084-H-26	Art	Natural Gas	3.08E-01
084-H-27	Art	Natural Gas	3.08E-01
084-H-28	Art	Natural Gas	5.78E-02
084-H-29	Art	Natural Gas	7.70E-02
084-H-3	Art	Natural Gas	5.40E-02
084-H-4	Art	Natural Gas	5.78E-02
084-H-5	Art	Natural Gas	1.93E-01
084-H-6	Art	Natural Gas	7.70E-02
084-H-7	Art	Natural Gas	9.60E-02
084-H-8	Art	Natural Gas	9.60E-02
084-H-9	Art	Natural Gas	1.15E-01
084-K-1	Art	Natural Gas	8.75E-04
084-K-2	Art	Natural Gas	8.75E-04
084-K-3	Art	Natural Gas	8.75E-04
084-K-4	Art	Natural Gas	8.75E-04
084-K-5	Art	Natural Gas	1.70E-03
084-K-6	Art	Natural Gas	3.40E-03
102-H-1	Bookstore (new construction)	Natural Gas	2.31E-01
102-H-2	Bookstore (new construction)	Natural Gas	4.75E-01
102-H-3	Bookstore (new construction)	Natural Gas	2.70E-01
102-H-4	Bookstore (new construction)	Natural Gas	4.75E-01
102-H-5	Bookstore (new construction)	Natural Gas	2.31E-01
102-H-6	Bookstore (new construction)	Natural Gas	4.75E-01
102-H-7	Bookstore (new construction)	Natural Gas	4.75E-01
102-H-8	Bookstore (new construction)	Natural Gas	1.15E-01
104-H-1	Sara Reynolds Hall	Natural Gas	2.00E-01
104-H-2	Sara Reynolds Hall	Natural Gas	2.00E-01
115-H-1	Journalism	Natural Gas	1.62E-01
158-H-1	Architecture and Planning	Natural Gas	7.50E-02
158-H-2	Architecture and Planning	Natural Gas	4.50E-01
158-H-3	Architecture and Planning	Natural Gas	4.00E-01
158-H-4	Architecture and Planning	Natural Gas	2.93E-01
158-H-5	Architecture and Planning	Natural Gas	1.50E-01

Source	Location	Fuel	MMBtu/hr
158-H-6	Architecture and Planning	Natural Gas	9.00E-02
158-H-7	Architecture and Planning	Natural Gas	1.50E-01
158-H-8	Architecture and Planning	Natural Gas	1.25E-01
158-H-9	Architecture and Planning	Natural Gas	1.25E-01
159-H-1	Aerospace Studies	Natural Gas	1.50E-01
159-H-2	Aerospace Studies	Natural Gas	1.00E-01
159-H-3	Aerospace Studies	Natural Gas	2.75E-01
162-H-1	Architecture and Planning Annex	Natural Gas	1.37E-01
162-H-2	Architecture and Planning Annex	Natural Gas	1.26E-01
162-H-3	Architecture and Planning Annex	Natural Gas	2.25E-01
162-H-4	Architecture and Planning Annex	Natural Gas	1.88E-01
162-H-5	Architecture and Planning Annex	Natural Gas	1.50E-01
162-H-6	Architecture and Planning Annex	Natural Gas	5.00E-02
163-H-1	Tamarind Institute	Natural Gas	8.00E-02
163-H-2	Tamarind Institute	Natural Gas	2.25E-01
163-H-3	Tamarind Institute	Natural Gas	6.00E-01
163-H-4	Tamarind Institute	Natural Gas	6.00E-01
163-H-5	Tamarind Institute	Natural Gas	1.00E-01
163-H-6	Tamarind Institute	Natural Gas	1.00E-01
163-H-7	Tamarind Institute	Natural Gas	4.00E-02
165-H-1	Latin American Institute	Natural Gas	1.20E-01
165-H-2	Latin American Institute	Natural Gas	1.10E-01
165-H-3	Latin American Institute	Natural Gas	6.60E-02
171-H-1	SW Hispanic RI/Chicano Studies	Natural Gas	7.50E-02
175-H-1	Center for Aging Research, Education & Service (UNM CARES)	Natural Gas	6.50E-02
175-H-2	Center for Aging Research, Education & Service (UNM CARES)	Natural Gas	6.50E-02
182A-H-1	Latin American Data Base/Outreach	Natural Gas	1.75E-01
183-H-1	UNM Press	Natural Gas	1.00E-01
183-H-2	UNM Press	Natural Gas	1.00E-01
183-H-3	UNM Press	Natural Gas	9.50E-02
183-H-4	UNM Press	Natural Gas	9.50E-02
183-H-5	UNM Press	Natural Gas	9.50E-02
183-H-6	UNM Press	Natural Gas	1.14E-01
201-H-1	School of Medicine Building No. 2	Natural Gas	1.00E-01
201-H-10	School of Medicine Building No. 2	Natural Gas	1.20E-01
201-H-11	School of Medicine Building No. 2	Natural Gas	1.85E-01
201-H-12	School of Medicine Building No. 2	Natural Gas	1.85E-01
201-H-13	School of Medicine Building No. 2	Natural Gas	2.00E-01
201-H-14	School of Medicine Building No. 2	Natural Gas	1.50E-01
201-H-15	School of Medicine Building No. 2	Natural Gas	1.00E-01
201-H-16	School of Medicine Building No. 2	Natural Gas	1.00E-01
201-H-17	School of Medicine Building No. 2	Natural Gas	1.00E-01
201-H-18	School of Medicine Building No. 2	Natural Gas	1.00E-01
201-H-19	School of Medicine Building No. 2	Natural Gas	1.00E-01

Source	Location	Fuel	MMBtu/hr
201-H-2	School of Medicine Building No. 2	Natural Gas	1.25E-01
201-H-20	School of Medicine Building No. 2	Natural Gas	1.00E-01
201-H-3	School of Medicine Building No. 2	Natural Gas	1.50E-01
201-H-4	School of Medicine Building No. 2	Natural Gas	1.25E-01
201-H-5	School of Medicine Building No. 2	Natural Gas	7.50E-02
201-H-6	School of Medicine Building No. 2	Natural Gas	8.20E-02
201-H-7	School of Medicine Building No. 2	Natural Gas	8.20E-02
201-H-8	School of Medicine Building No. 2	Natural Gas	1.00E-01
201-H-9	School of Medicine Building No. 2	Natural Gas	1.20E-01
203-H-1	Facility Planning	Natural Gas	1.20E-01
203-H-2	Facility Planning	Natural Gas	1.25E-01
204-H-1	Service Building (PPD)	Natural Gas	4.00E-02
204-H-10	Service Building (PPD)	Natural Gas	3.50E-01
204-H-11	Service Building (PPD)	Natural Gas	1.15E-01
204-H-12	Service Building (PPD)	Natural Gas	1.15E-01
204-H-13	Service Building (PPD)	Natural Gas	1.15E-01
204-H-14	Service Building (PPD)	Natural Gas	1.15E-01
204-H-15	Service Building (PPD)	Natural Gas	1.50E-01
204-H-16	Service Building (PPD)	Natural Gas	1.50E-01
204-H-2	Service Building (PPD)	Natural Gas	7.50E-02
204-H-3	Service Building (PPD)	Natural Gas	7.50E-02
204-H-4	Service Building (PPD)	Natural Gas	1.20E-01
204-H-5	Service Building (PPD)	Natural Gas	9.00E-02
204-H-6	Service Building (PPD)	Natural Gas	9.00E-02
204-H-7	Service Building (PPD)	Natural Gas	1.20E-01
204-H-8	Service Building (PPD)	Natural Gas	4.00E-01
204-H-9	Service Building (PPD)	Natural Gas	3.50E-01
206-H-1	The North Golf Course Club House	Natural Gas	8.00E-02
206-H-2	The North Golf Course Club House	Natural Gas	8.00E-02
206-H-3	The North Golf Course Club House	Natural Gas	8.00E-02
209A-H-1	School of Medicine (Med5)	Natural Gas	1.04E-01
209A-H-2	School of Medicine (Med5)	Natural Gas	6.40E-02
209A-H-3	School of Medicine (Med5)	Natural Gas	1.04E-01
209A-H-4	School of Medicine (Med5)	Natural Gas	6.40E-02
209B-H-1	School of Medicine (Med5B)	Natural Gas	1.29E-02
209C-H-1	School of Medicine (Med 6)	Natural Gas	1.04E-01
209C-H-2	School of Medicine (Med 6)	Natural Gas	6.40E-02
209C-H-3	School of Medicine (Med 6)	Natural Gas	1.04E-01
209C-H-4	School of Medicine (Med 6)	Natural Gas	6.40E-02
209-H-1	School of Medicine (Med 4)	Natural Gas	6.40E-02
209-H-2	School of Medicine (Med 4)	Natural Gas	6.40E-02
209-H-3	School of Medicine (Med 4)	Natural Gas	6.40E-02
216-H-1	Automotive	Natural Gas	1.00E-01
219-H-1	Small Engine Repair Shop	Natural Gas	1.00E-01
221-H-1	UNM Mental Health Program	Natural Gas	9.50E-02
226-H-1	Surge Building	Natural Gas	4.00E-01

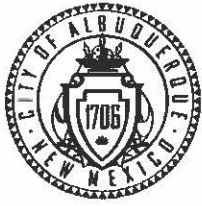
Source	Location	Fuel	MMBtu/hr
226-H-2	Surge Building	Natural Gas	4.00E-01
226-H-3	Surge Building	Natural Gas	4.00E-01
226-H-4	Surge Building	Natural Gas	4.00E-01
232-H-1	Medical Center University Counsel	Natural Gas	1.20E-01
233-H-1	Occupational Safety	Natural Gas	1.20E-01
233-H-2	Occupational Safety	Natural Gas	1.25E-01
233-H-3	Occupational Safety	Natural Gas	1.13E-01
233-H-4	Occupational Safety	Natural Gas	2.63E-01
233-H-5	Occupational Safety	Natural Gas	2.22E-01
255-H-1	Child Care Center	Natural Gas	1.00E-01
255-H-2	Child Care Center	Natural Gas	1.00E-01
255-H-3	Child Care Center	Natural Gas	1.00E-01
255-H-4	Child Care Center	Natural Gas	1.00E-01
259A-H-8	New Continuing Education	Natural Gas	3.85E+00
259-H-1	Continuing Education	Natural Gas	5.00E-01
259-H-2	Continuing Education	Natural Gas	5.00E-01
259-H-3	Continuing Education	Natural Gas	5.00E-01
259-H-4	Continuing Education	Natural Gas	5.00E-01
259-H-5	Continuing Education	Natural Gas	5.00E-01
259-H-6	Continuing Education	Natural Gas	5.00E-01
259-H-7	Continuing Education	Natural Gas	5.00E-01
260-H-1	Center for Non-Invasive Diagnosis	Natural Gas	6.25E-01
260-H-2	Center for Non-Invasive Diagnosis	Natural Gas	3.60E-02
262-H-1	Postal Service, Records Management, Shipping, and Surplus Property	Natural Gas	4.00E-01
262-H-2	Postal Service, Records Management, Shipping, and Surplus Property	Natural Gas	1.90E-01
262-H-3	Postal Service, Records Management, Shipping, and Surplus Property	Natural Gas	1.90E-01
277-H-1	Child Care Center	Natural Gas	1.00E-01
277-H-2	Child Care Center	Natural Gas	1.00E-01
301-H-XX	University Stadium, misc. heaters including building 308, etc.	Natural Gas	2.84E+00
302-H-1A	The Pit, west duct heater	Natural Gas	3.40E+00
302-H-2A	The Pit, east duct heater	Natural Gas	3.40E+00
302-H-3A	The Pit, fireplace	Natural Gas	4.40E-02
307-H-1	Athletics, misc. heaters including buildings 311, etc.	Natural Gas	2.22E+00
332-H-1	Sci-Tech, misc. heaters including buildings 332-339, etc.	Natural Gas	3.20E-01

The following unit is insignificant per A.1 of Albuquerque Environmental Health Department, Air Quality Program's List of Insignificant Activities, revised January 3, 1996; an emission unit that has the potential to emit no more than one (1) tons per year of any regulated criteria pollutant.

Table 10: Insignificant Storage Tank

Source	Location	Fuel	VOC Emissions (tons/yr)
216-AST-2A	Fuel Management Filling Station	Diesel	5.50E-04

**APPENDIX A. TITLE V OPERATING PERMIT RENEWAL APPLICATION
FORMS**



City of Albuquerque
Environmental Health Department
Air Quality Division
One Civic Plaza NW
3rd Floor, Room 3023
Albuquerque, New Mexico 87102
Telephone: (505) 768-1972 Fax: (505) 768-1977
20.11.42 NMAC
Operating Permit Application Form

Please answer all questions applicable to your specific business, operation and products. Use the abbreviation "N.A." for "not applicable" wherever appropriate

SECTION 1 - GENERAL INFORMATION (20.11.42.12.A.(4) NMAC)

{Specific instructions corresponding to numbers in brackets are included in the application package.}

1. Company Name: {1} The Regents of the University of New Mexico
2. Application Date: ~~FDD~~ 5/11/2022
3. Company Mailing Address: Scholes Hall 160, Bldg. 10, 1800 Roma Ave., Albuquerque, NM 87131 4. Phone: (505) 277-0305
5. Owner's Name: {2} The Regents of the University of New Mexico 6. Phone: (505) 277-0305
7. Owner's Address: Scholes Hall 160, Bldg. 10, 1800 Roma Ave., Albuquerque, NM 87131
8. Plant Name: {3} (if different from 1.) The University of New Mexico 9. Phone: (505) 277-0305
10. Plant Address: (if different from 3.) Same as above.
11. Operator of Plant: {4} The Regents of the University of New Mexico 12. Phone: (505) 277-0305
13. Plant Operator Address: Scholes Hall 160, Bldg. 10, 1800 Roma Ave., Albuquerque, NM 87131
14. Responsible Official: {5} Teresa Costantinidis, Senior Vice President for Finance and Administration 15. Phone: (505) 277-0305
16. Address of Responsible Official: Scholes Hall 160, Bldg. 10, 1800 Roma Ave., Albuquerque, NM 87131
17. Person to Contact at Site: {6} Casey Hall 18. Title: Director Environmental Health and Safety 19. Phone: (505) 277-0305
20. Owner's Agent(s): {7} Scholes Hall 160, Bldg. 10, 1800 Roma Ave., Albuquerque, NM 87131 21. Phone: (505) 277-0305
22. Company's State of Incorporation or Registration to do Business: New Mexico
23. Company's Corporate or Partnership Relationship to any other Air Quality Permittee: {8} Facilities supervised by The Regents of the University of New Mexico.
24. Name of Parent Company: {9} N/A
25. Address of Parent Company: N/A
26. Names of Subsidiary Companies: {10} N/A
27. Air Quality Permits for this Source Already Received: (Permit Number(s)) See List Attached
28. Other Air Quality Permits Issued to this Applicant: (Permit Number(s)) N/A
29. Reason this source must have a Part 42 operating permit: {11} Major Source for NOx and CO
30. Is U.S.G.S. quadrangular map or equivalent attached? {12} Yes

31. Ownership of land at plant site (private, State, Federal, Indian, etc.): State
NOTE: If the land at the plant site is Indian land, contact the Air Quality Division staff for assistance.
32. Distance, in meters, of plant site to nearest residence, school or occupied structure: {13} 0 - UNM is a public university
33. Location of Plant:
- 33A. City or County: City of Albuquerque 33B. Direction and distance from nearest town: N/A
- 33C. UTM Zone: 13 UTME: 352.0 km UTMN: 388.35 km
- 33D. Range: 3 East Township: 10 North Section: 21 30E Latitude: 35.085256° Longitude: -106.623461°
34. Plant Elevation 5,163 ft above mean sea level
35. Describe briefly type of plant and nature of processes (or modification) and products, including primary and secondary SIC codes: {14}
The University of New Mexico is a state chartered research university. UNM offers bachelor's through Doctorate degrees in various disciplines. UNM is SIC major group code 82.
36. Describe briefly any processes or products associated with any alternative operating scenarios described in this application, including primary and secondary SIC codes {15}: N/A
37. Plant's Maximum Allowable Hourly and Annual Capacities (specify units) {16}: Hourly: Maximum hourly capacities are unchanged from the existing Title V Permit #0536-M1.
Annual: Maximum hourly capacities are unchanged from the existing Title V Permit #0536-M1.
38. Permit Renewals or Significant Modifications
- 38A. Is this an application for an operating permit renewal or significant modification? Yes X No _____
- 38B. If yes, when does the current operating permit expire? May 14, 202
39. Is this a portable or temporary source {17}? Yes _____ No X
- 39A. If yes, provide identifying numbers (e.g. serial numbers): N/A
- 39B. If yes, date of anticipated startup: N/A 40C. If yes, date of anticipated relocation: N/A
40. Operational Periods: (20 NMAC 11.42 II.1.1 D.5.f.)
- 40A. Specify **standard** operational periods:
24 hours per day, _____ am to _____ pm, 7 days per week, 4.3 weeks per month, 12 months per year.
- 40B. Specify **maximum** operational periods:
24 hours per day, _____ am to _____ pm, 7 days per week, 4.3 weeks per month, 12 months per year.

UNM has removed three emergency generators from this facility, the permits associated with these units are AQCP#1750-1AR, REG#1973, and REG#1974, with the removal of these units these permits are cancelled. The subsequent emissions for these units have also been removed from the facility wide emission rate. UNM submitted a Technical Revision to ATC#490-RV1, which reduced the permitted boiler capacity from 8 MMBtu/hr to 4 MMBtu/hr, these emissions have been included below. UNM has been issued by the City of Albuquerque/Bernalillo County Air Quality Program the following air quality permits: Authority to Construct (ATC) Permits #0490-RV1, 0087-M1, 1174, 1373, 1601-M1, 1643-M1, 1646, 1647, 1662-M1, 1691, 1692-M1, 1715, 1716, 1809-M1-RV1, 1852-M1, 1898, 1979, 1980-M1, 1981, 1982, 2008, 2038, 2135, 2141, 2176, 3019, 3020, 3137, and 3143; and Source Registrations #0504-RV1, 0624, 0717, 1673, 1689, 1690, 1700, 1766, 1881, 1968, 1969, 1970, 1971, 1972, 1975-M1, 1976-M1, 1977, 1978, 2167, and 3255; and Fugitive Programmatic Dust Control Permit #P05-0006H.

SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)

(Use additional sheets if necessary)

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(s) {7}
		Pollutant {4}	Quantity {5}		
116-TRB-1	Ford Center Turbine #1	NO _x	7.6 lb/hr	Manufacturer Specification	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, 20.2.3 NMAC and 40 CFR 60 Subpart GG
			33.2 tn/yr		
		CO	9.2 lb/hr	Manufacturer Specification	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC
			40.4 tn/yr		
		VOC	2.6 lb/hr	Manufacturer Specification	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC
			11.6 tn/yr		
		SO ₂	1.4 lb/hr	Maximum Natural Gas Sulfur Concentration	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, 20.2.3 NMAC and 40 CFR 60 Subpart GG
			6.1 tn/yr		
		TSP	0.57 lb/hr	AP-42 Table 3.1-2	20.11.02, 05, 40, 41, 42, 63, 66, 90 NMAC, and 20.2.3 NMAC
			2.5 tn/yr		
		PM ₁₀	0.57 lb/hr	AP-42 Table 3.1-2	20.11.02, 05, 40, 41, 42, 63, 66, 90 NMAC, and 20.2.3 NMAC
			2.5 tn/yr		
PM _{2.5}	0.57 lb/hr	AP-42 Table 3.1-2	20.11.02, 05, 40, 41, 42, 63, 66, 90 NMAC, and 20.2.3 NMAC		
	2.5 tn/yr				
HAPs	0.087 lb/hr	AP-42 Table 3.1-3	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC		
	0.38 tn/yr				

**SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT
OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)**

(Continued)

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(s) {7}
		Pollutant {4}	Quantity {5}		
116-TRB- 2	Ford Center Turbine #2	NO _x	7.8 lb/hr	Manufacturer Specification	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, 20.2.3 NMAC and 40 CFR 60 Subpart KKKK
			34.2 tn/yr		
		CO	9.5 lb/hr	Manufacturer Specification	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC
			41.6 tn/yr		
		VOC	2.72 lb/hr	Manufacturer Specification	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC
			11.9 tn/yr		
		SO ₂	1.24 lb/hr	Maximum Natural Gas Sulfur Concentration	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, 20.2.3 NMAC and 40 CFR 60 Subpart KKKK
			5.4 tn/yr		
		TSP	0.52 lb/hr	AP-42 Table 3.1-2	20.11.02, 05, 40, 41, 42, 63, 66, 90 NMAC, and 20.2.3 NMAC
			2.26 tn/yr		
		PM ₁₀	0.52 lb/hr	AP-42 Table 3.1-2	20.11.02, 05, 40, 41, 42, 63, 66, 90 NMAC, and 20.2.3 NMAC
			2.26 tn/yr		
PM _{2.5}	0.52 lb/hr	AP-42 Table 3.1-2	20.11.02, 05, 40, 41, 42, 63, 66, 90 NMAC, and 20.2.3 NMAC		
	2.26 tn/yr				
HAPs	0.078 lb/hr	AP-42 Table 3.1-3	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC		
	0.34 tn/yr				

**SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT
OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)**

(Continued)

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(s) {7}
		Pollutant {4}	Quantity {5} (Per Each Boiler)		
116-BLR-1A, 2A	Ford Center Boilers #1A and #2A (Natural Gas)	NO _x	3.8 lb/hr	Manufacturer Specifications	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			16.7 tn/yr		
		CO	4.9 lb/hr	Based on Stack Testing Results	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC
			21.4 tn/yr		
		VOC	1.2 lb/hr	Manufacturer Specifications	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC
			5.1 tn/yr		
		SO ₂	1.5 lb/hr	Maximum Natural Gas Sulfur Concentration	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			6.7 tn/yr		
		TSP	0.81 lb/hr	AP-42 Table 1.4-2	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			3.6 tn/yr		
		PM ₁₀	0.81 lb/hr	AP-42 Table 1.4-2	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			3.6 tn/yr		
PM _{2.5}	0.81 lb/hr	AP-42 Table 1.4-2	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc		
	3.6 tn/yr				
HAPs	9.3E-03 lb/hr	AP-42 Table 1.4-3,4	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC		
	4.1E-02 tn/yr				

**SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT
OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)**

(Continued)

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(s) {7}
		Pollutant {4}	Quantity {5} (Per Each Boiler)		
116-BLR- 1A, 2A	Ford Center Boilers #1A and #2A (Diesel)	NO _x	5.4 lb/hr	Manufacturer Specifications	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC
			0.14 tn/yr		
		CO	0.67 lb/hr	Manufacturer Specifications	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC
			0.02 tn/yr		
		VOC	0.24 lb/hr	AP-42 Table 1.3-3	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC
			0.006 tn/yr		
		SO ₂	0.14 lb/hr	AP-42 Table 1.3-1	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			0.004 tn/yr		
		TSP	1.4 lb/hr	AP-42 Table 1.3-1	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			0.04 tn/yr		
		PM ₁₀	1.4 lb/hr	AP-42 Table 1.3-1	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			0.04 tn/yr		
PM _{2.5}	1.4 lb/hr	AP-42 Table 1.3-1	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc		
	0.04 tn/yr				
HAPs	0.09 lb/hr	AP-42, Table 1.3-9,11	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC		
	0.0023 tn/yr				

SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)

(Continued)

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(s) {7}
		Pollutant {4}	Quantity {5} (Per Each Boiler)		
176-BLR-1-3	Steam Plant Boilers #1-3	NO _x	0.25 lb/hr	Manufacturer Specification	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC
			1.1 tn/yr		
		CO	0.75 lb/hr	Manufacturer Specification	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC
			3.29 tn/yr		
		VOC	0.076 lb/hr	AP-42 Table 1.4-2	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC
			0.33 tn/yr		
		SO ₂	0.20 lb/hr	Maximum Natural Gas Sulfur Concentration	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			0.86 tn/yr		
		TSP	0.105 lb/hr	AP-42 Table 1.4-2	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			0.46 tn/yr		
		PM ₁₀	0.105 lb/hr	AP-42 Table 1.4-2	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			0.46 tn/yr		
		PM _{2.5}	0.105 lb/hr	AP-42 Table 1.4-2	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			0.46 tn/yr		
HAPs	1.19E-03 lb/hr	AP-42 Table 1.4-3,4	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC		
	5.23E-03 tn/yr				

SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)

(Continued)

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(s) {7}
		Pollutant {4}	Quantity {5}		
216-AST-1A	Gasoline Storage Tank	NO _x			
		CO			
		VOC	1.1 tn/yr	TANKS 4.0.9d	20.11.02, 05, 40, 41, 42, 64, 65, 90 NMAC, and 20.2.3 NMAC 40 CFR 63 Subpart CCCCCC
		SO ₂			
		TSP			
		PM ₁₀			
		PM _{2.5}			
		HAPs	Uncontrolled: 0.0014 tn/yr	Speciated Values for Unleaded Gasoline	20.11.02, 05, 40, 41, 42, 64, 65, 90 NMAC, and 20.2.3 NMAC 40 CFR 63 Subpart CCCCCC

**SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT
OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)**

(Continued)

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(s) {7}
		Pollutant {4}	Quantity {5}		
262- CRM-1	Animal Research Facility Crematorium	NO _x	1.18 lb/hr	US EPA, epa.gov/chief	20.11.02, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.23 NMAC
			2.59 tn/yr		
		CO	0.54 lb/hr	US EPA, epa.gov/chief	20.11.02, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.23 NMAC
			1.18 tn/yr		
		VOC	0.05 lb/hr	EPA Cremation Guidebook 2008	20.11.02, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.23 NMAC
			0.11 tn/yr		
		SO ₂	2.08 lb/hr	US EPA, epa.gov/chief	20.11.02, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.23 NMAC
			4.56 tn/yr		
		TSP	0.06 lb/hr	EPA Cremation Guidebook 2008	20.11.02, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.23 NMAC
			0.13 tn/yr		
		PM ₁₀	0.06 lb/hr	EPA Cremation Guidebook 2008	20.11.02, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.23 NMAC
			0.13 tn/yr		
		PM _{2.5}	0.06 lb/hr	EPA Cremation Guidebook 2008	20.11.02, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.23 NMAC
			0.13 tn/yr		
HAPs	3.77E-03 lb/hr	EPA Cremation Guidebook 2008	20.11.02, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.23 NMAC		
	8.26E-03 tn/yr				

**SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT
OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)**

(Continued)

UNIT No. {1}	EMISSIONS UNIT, PROCESS OR OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(s) {7}
		Pollutant {4}	Quantity {5}		
338-BLR- 1	Center for High Tech Materials Boiler	NO _x	0.39 lb/hr	AP-42 Table 1.4-1	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC
			1.72 tpy		
		CO	0.33 lb/hr	AP-42 Table 1.4-1	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC
			1.44 tpy		
		VOC	0.02 lb/hr	AP-42 Table 1.3-3	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC
			0.09 tpy		
		SO ₂	0.002 lb/hr	AP-42 Table 1.4-2	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			0.01 tpy		
		TSP	0.03 lb/hr	AP-42 Table 1.4-2	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			0.013 tpy		
		PM ₁₀	0.03 lb/hr	AP-42 Table 1.4-2	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			0.013 tpy		
		PM _{2.5}	0.39 lb/hr	AP-42 Table 1.4-2	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, 20.2.3 NMAC, and 40 CFR 60 Subpart Dc
			1.72 tpy		
HAPs	- lb/hr	AP-42 Table 1.4-3,4	20.11.02, 05, 40, 41, 42, 63, 68, 90 NMAC, and 20.2.3 NMAC		
	- tn/yr				

**SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT
OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)**

(Continued)

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(s) {7}
		Pollutant {4}	Quantity {5} (Total for All Engines)		
XXX- EG-X	Emergency Internal Combustion Engines	NO _x	273.62 lb/hr	AP-42 Tables 3.2-3, 3.3- 1, 3.4-1, 3.4-3 and ATC Permits and Permit Applications	20.11.02, 05, 40, 41, 42, 63, 90 NMAC, and 20.2.3 NMAC. Some units also subject to 40 CFR 60 subpart IIII, subpart JJJJ, or subpart ZZZZ
			35.88 tn/yr		
		CO	208.12 lb/hr		
			23.99 tn/yr		
		VOC	12.62 lb/hr		
			1.5 tn/yr		
		SO ₂	15.8 lb/hr		
			1.75 tn/yr		
		TSP	11.86 lb/hr		
			1.45 tn/yr		
		PM ₁₀	11.86 lb/hr		
			1.45 tn/yr		
PM _{2.5}	11.86 lb/hr				
	1.45 tn/yr				
HAPs	30.54 lb/hr				
	3.08 tn/yr				

SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)

(Continued)

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(s) {7}
		Pollutant {4}	Quantity {5} (All Lots Combined)		
XXX-DL-X	Unpaved Parking Lots	NO _x			
		CO			
		VOC			
		SO ₂			
		TSP	31.12 lb/hr 3.17 tn/yr	AP-42 Section 13.2.2	20.11.02, 05, 20, 40, 41, 42, and 90 NMAC
		PM ₁₀			
		PM _{2.5}			
		HAPs			

SECTION 2 AIR POLLUTANT EMISSIONS RATES PRIOR TO CONTROL OR ABATEMENT EQUIPMENT OR TO ATMOSPHERE IF UNCONTROLLED (20 NMAC 11.42.II.1.1.D.)

(Continued)

UNIT No. {1}	EMISSIONS UNIT, PROCESS or OPERATION {2}	UNCONTROLLED AIR POLLUTANT EMISSION RATES {3}		MEASUREMENT OR ESTIMATION METHOD {6}	APPLICABLE REQUIREMENT(s) {7}
		Pollutant {4}	Quantity {5} (All Chemical Use Combined)		
CHEM	Chemical Usage	NO _x			
		CO			
		VOC	* 17.4 tn/yr	Chemical Inventory – Mass Balance	20.11.02, 40, 41, 42, and 90 NMAC
		SO ₂			
		TSP			
		PM ₁₀			
		PM _{2.5}			
		HAPs	* 9.4 tn/yr	Chemical Inventory – Mass Balance	20.11.02, 40, 41, 42, and 90 NMAC

* Hourly emissions were not calculated due to the complexity of the assumptions required.

Section 2: Air Pollutant Emissions Rates Prior to Control or Abatement Equipment, or to Atmosphere if Uncontrolled

Each piece of equipment in the facility that emits air pollutants must be listed in this section. Maximum possible emissions rates prior to air pollution control equipment, waste abatement equipment, process control capture equipment, or to the atmosphere for uncontrolled emissions are to be provided in this section. Calculations made to determine the values shown on the form are to be shown and referenced in Package Element 6 (Emissions Calculations).

These emissions include: pollutants for which the source is major; regulated air pollutants; all fugitive emissions; and any hazardous or toxic air contaminants emitted as part of plant processes. If products or raw materials are stored and pollutants are passively released through off gassing while in storage, these pollutants must also be listed. Emissions from flares and wood waste burners should be listed in this section.

Notes

- {1} Use the process or operation equipment unit numbers that were assigned to each piece of equipment in Package Element 4A (Process Flow Sheets) above. For fugitive emissions, describe the source of the emissions. For liquid tank and solid material storage, use the tank or storage unit number.
- {2} For example: boiler, catalyst regeneration units, flare, furnace, gas engine, haul road, iron melting cupola, material dryer, process fugitive, silo, smelter furnace, solvent cleaner, storage tanks, etc.
- {3} Use one line for each pollutant emitted by each piece of equipment. Attach additional sheets if required.
- {4} List each pollutant defined by EPA to be a regulated air pollutant that this source emits. Also list all other pollutants for which this source is major. Provide trade name or common name and chemical composition if known. (E.g. particulate matter (describe composition), SO₂, CO, hydrogen sulfide, nitrogen oxides (as nitrogen dioxide), etc.)
- {5} Maximum allowable quantities at maximum allowable production rates and 8760 hours per year unless limited by federally enforceable permit conditions. See Section 1, Line 37. tn = tons (2,000 lb).
- {6} Specify how the quantity of emitted pollutant was determined: from actual measurement (specify equipment used) of emissions (preferred), process material balances, equipment manufacturer's information, EPA emission factor, or other source. Show the calculations used to obtain the emission rates in Package Element 4B (Emissions Calculations).
- {7} Specify the requirement(s) that is(are) applicable to this process, operation or emission unit. See Part 42 for list of applicable requirements. E.g. 20.11.67.20 NMAC, NSPS Subpart GG; 20.11.41 NMAC. If there is insufficient room on the form, please attach a clearly identified additional sheet.

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Use additional sheets if necessary)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}	
	Unit No. {2}	Type {3}	Manufacturer and Model No.	Pollutant {5}	Quantity {6}		% by Weight	Method of Determination {7}		
					Actual	Units				Allowable
116-TRB-1				NO _x	7.6	lb/hr	7.6			
					33.2	tn/yr	33.2			
				CO	9.2	lb/hr	9.2			
					40.4	tn/yr	40.4			
				VOC	2.6	lb/hr	2.6			
					11.6	tn/yr	11.6			
				SO ₂	1.4	lb/hr	1.4			
					6.0	tn/yr	6.0			
				TSP	0.57	lb/hr	0.57			
					2.5	tn/yr	2.5			
				PM ₁₀	0.57	lb/hr	0.57			
					2.5	tn/yr	2.5			
				PM _{2.5}	0.57	lb/hr	0.57			
					2.5	tn/yr	2.5			
				HAPs	0.087	lb/hr	0.087			
					0.38	tn/yr	0.38			

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Continued)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}	
	Unit No. {2}	Type {3}	Manufacturer and Model No.	Pollutant {5}	Quantity {6}		% by Weight	Method of Determination {7}		
					Actual	Units				Allowable
116-TRB-2				NO _x	7.8	lb/hr	7.8			
					34.2	tn/yr	34.2			
				CO	9.5	lb/hr	9.5			
					41.6	tn/yr	41.6			
				VOC	2.72	lb/hr	2.72			
					11.9	tn/yr	11.9			
				SO ₂	1.24	lb/hr	1.24			
					5.4	tn/yr	5.4			
				TSP	0.52	lb/hr	0.52			
					2.26	tn/yr	2.26			
				PM ₁₀	0.52	lb/hr	0.52			
					2.26	tn/yr	2.26			
				PM _{2.5}	0.52	lb/hr	0.52			
					2.26	tn/yr	2.26			
				HAPs	0.078	lb/hr	0.078			
					0.34	tn/yr	0.34			

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Continued)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			Pollutant {5}	AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}
	Unit No. {2}	Type {3}	Manufacturer and Model No.		Quantity {6} (Per Each Boiler)			% by Weight	Method of Determination {7}	
					Actual	Units	Allowable			
116-BLR-1A, 2A (Natural Gas)				NO _x	3.8	lb/hr	3.8			
					16.7	tn/yr	16.7			
				CO	4.9	lb/hr	4.9			
					21.4	tn/yr	21.4			
				VOC	1.2	lb/hr	1.2			
					5.1	tn/yr	5.1			
				SO ₂	1.5	lb/hr	1.5			
					6.7	tn/yr	6.7			
				TSP	0.81	lb/hr	0.81			
					3.6	tn/yr	3.6			
				PM ₁₀	0.81	lb/hr	0.81			
					3.6	tn/yr	3.6			
				PM _{2.5}	0.81	lb/hr	0.81			
					3.6	tn/yr	3.6			
				HAPs	9.3E-03	lb/hr	9.3E-03			
					4.1E-02	tn/yr	4.1E-02			

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Continued)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}	
	Unit No. {2}	Type {3}	Manufacturer and Model No.	Pollutant {5}	Quantity {6} (Per Each Boiler)		% by Weight	Method of Determination {7}		
					Actual	Units				Allowable
116-BLR-1A, 2A (Diesel)				NO _x	5.4	lb/hr	5.4			
					0.14	tn/yr	0.14			
				CO	0.67	lb/hr	0.67			
					0.02	tn/yr	0.02			
				VOC	0.24	lb/hr	0.24			
					0.006	tn/yr	0.006			
				SO ₂	0.1	lb/hr	0.1			
					0.004	tn/yr	0.004			
				TSP	1.4	lb/hr	1.4			
					0.04	tn/yr	0.04			
				PM ₁₀	1.4	lb/hr	1.4			
					0.04	tn/yr	0.04			
				PM _{2.5}	1.4	lb/hr	1.4			
					0.04	tn/yr	0.04			
				HAPs	0.09	lb/hr	0.09			
					0.0023	tn/yr	0.0023			

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Continued)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}
	Unit No. {2}	Type {3}	Manufacturer and Model No.	Pollutant {5}	Quantity {6} (Per Each Boiler)		% by Weight	Method of Determination {7}	
					Actual	Units			
176-BLR-1-3				NO _x	0.25	lb/hr	0.25		
					1.1	tn/yr	1.1		
				CO	0.75	lb/hr	0.75		
					3.29	tn/yr	3.29		
				VOC	0.060	lb/hr	0.060		
					0.26	tn/yr	0.26		
				SO ₂	0.16	lb/hr	0.16		
					0.68	tn/yr	0.68		
				TSP	0.083	lb/hr	0.083		
					0.36	tn/yr	0.36		
				PM ₁₀	0.083	lb/hr	0.083		
					0.36	tn/yr	0.36		
				PM _{2.5}	0.083	lb/hr	0.083		
					0.36	tn/yr	0.36		
				HAPs	9.54E-04	lb/hr	9.54E-04		
					4.18E-03	tn/yr	4.18E-03		

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.11.1.D.)

(Continued)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}	
	Unit No. {2}	Type {3}	Manufacturer and	Pollutant {5}	Quantity {6}		% by Weight	Method of Determination {7}		
					Actual	Units				Allowable
216-AST-1A				NO _x		lb/hr				
						tn/yr				
				CO		lb/hr				
						tn/yr				
		Stage 1 and Stage 2 Passive Vapor Recovery System		VOC		lb/hr		98	Engineering Estimate	40 CFR 63 Subpart CCCCC
					2.2E-2 ⁽¹⁾	tn/yr	2.2E-2 ⁽¹⁾			
				SO ₂		lb/hr				
						tn/yr				
				TSP		lb/hr				
						tn/yr				
				PM ₁₀		lb/hr				
						tn/yr				
			PM _{2.5}		lb/hr					
					tn/yr					
	Stage 1 and Stage 2 Passive Vapor Recovery System		HAPs		lb/hr		98	Engineering Estimate	40 CFR 63 Subpart CCCCC	
				2.9E-5 ⁽¹⁾	tn/yr	2.9E-5 ⁽¹⁾				

¹ Tank 216-AST-1A is equipped with a Stage 1 and Stage 2 Passive Vapor Recovery System with a control efficiency of 98%.

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Continued)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}	
	Unit No. {2}	Type {3}	Manufacturer and Model No.	Pollutant {5}	Quantity {6}		% by Weight	Method of Determination {7}		
					Actual	Units				Allowable
262-CRM-1				NO _x	1.18	lb/hr	1.18			
					2.59	tn/yr	2.58			
				CO	0.54	lb/hr	0.54			
					1.18	tn/yr	1.18			
				VOC	0.05	lb/hr	0.05			
					0.11	tn/yr	0.11			
				SO ₂	2.08	lb/hr	2.08			
					4.56	tn/yr	4.55			
				TSP	0.06	lb/hr	0.0557			
					0.13	tn/yr	0.12			
				PM ₁₀	0.06	lb/hr	0.0557			
					0.13	tn/yr	0.12			
				PM _{2.5}	0.06	lb/hr	0.0557			
					0.13	tn/yr	0.12			
				HAPs	3.77E-03	lb/hr	3.77E-03			
					8.26E-03	tn/yr	8.26E-03			

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Continued)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}	
	Unit No. {2}	Type {3}	Manufacturer and Model No.	Pollutant {5}	Quantity {6}		% by Weight	Method of Determination {7}		
					Actual	Units				Allowable
338-BLR-1				NO _x	0.39	lb/hr	0.39			
					1.72	tn/yr	1.72			
				CO	0.33	lb/hr	0.33			
					1.44	tn/yr	1.44			
				VOC	0.02	lb/hr	0.02			
					0.09	tn/yr	0.09			
				SO ₂	0.002	lb/hr	0.002			
					0.01	tn/yr	0.01			
				TSP	0.03	lb/hr	0.03			
					0.013	tn/yr	0.013			
				PM ₁₀	0.03	lb/hr	0.03			
					0.013	tn/yr	0.013			
				PM _{2.5}	0.03	lb/hr	0.03			
					0.013	tn/yr	0.013			
				HAPs	-	lb/hr	-			
					-	tn/yr	-			

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Continued)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}	
	Unit No. {2}	Type {3}	Manufacturer and Model No.	Pollutant {5}	Quantity {6} (Total for All Engines)			% by Weight		Method of Determination {7}
					Actual	Units	Allowable			
XXX-EG-X				NO _x	273.62	lb/hr	273.62			
					35.88	tn/yr	35.88			
				CO	208.12	lb/hr	208.12			
					23.99	tn/yr	23.99			
				VOC	12.62	lb/hr	12.62			
					1.49	tn/yr	1.49			
				SO ₂	15.81	lb/hr	15.81			
					1.76	tn/yr	1.76			
				TSP	11.86	lb/hr	11.86			
					1.45	tn/yr	1.45			
				PM ₁₀	11.86	lb/hr	11.86			
					1.45	tn/yr	1.45			
				PM _{2.5}	11.86	lb/hr	11.86			
					1.45	tn/yr	1.45			
				HAPs	30.54	lb/hr	30.54			
					3.08	tn/yr	3.08			

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Continued)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}
	Unit No. {2}	Type {3}	Manufacturer and Model No.	Pollutant {5}	Quantity {6}		% by Weight	Method of Determination {7}	
					Actual	Units			
XXX-DL-X				NO _x		lb/hr			
						tn/yr			
				CO		lb/hr			
						tn/yr			
				VOC		lb/hr			
						tn/yr			
				SO ₂		lb/hr			
						tn/yr			
				TSP	31.12	lb/hr	31.12		
					3.17	tn/yr	3.17		
				PM ₁₀		lb/hr			
						tn/yr			
				PM _{2.5}		lb/hr			
						tn/yr			
			HAPs		lb/hr				
					tn/yr				

SECTION 3 EMISSIONS FROM AIR POLLUTION CONTROL EQUIPMENT AND FROM UNCONTROLLED PROCESS EQUIPMENT
 (20 NMAC 11.42.II.1.1.D.)

(Continued)

Emission Unit Nos. {1}	CONTROL EQUIPMENT			AIR POLLUTANTS EMITTED {4}			CONTROL EFFICIENCY		APPLICABLE REQUIREMENTS {8}
	Unit No. {2}	Type {3}	Manufacturer and Model No.	Pollutant {5}	Quantity {6}		% by Weight	Method of Determination {7}	
					Actual	Units			
CHEM				NO _x		lb/hr			
						tn/yr			
				CO		lb/hr			
						tn/yr			
				VOC	*	lb/hr	*		
						17.4	tn/yr		
				SO ₂		lb/hr			
						tn/yr			
				TSP		lb/hr			
						tn/yr			
				PM ₁₀		lb/hr			
						tn/yr			
				PM _{2.5}		lb/hr			
						tn/yr			
				HAPs	*	lb/hr	*		
						9.4	tn/yr		

* Hourly emissions were not calculated due to the complexity of the assumptions required.

Section 3: Emissions From Air Pollution Control Equipment and from Uncontrolled Process Equipment

All emissions to the atmosphere, either controlled or uncontrolled if no control exists, associated with the operation of this facility must be identified in this section. This includes fugitive process emissions, and other fugitive or indirect emissions resulting from activities of this facility, e.g. fugitive dust from haul roads. [Insignificant activities are found in Package Element 9.]

Provide emissions rates from air pollution control equipment, waste abatement equipment, process control capture equipment, and from uncontrolled processes, operations or activities. Calculations made to determine the values shown on the form are to be shown and referenced in Package Element 4B (Emissions Calculations). These emissions include: pollutants for which the source is major; regulated air pollutants; and any hazardous or toxic air contaminants emitted as part of plant processes. Emissions from flares, sulfur recovery units, VOC afterburners, and wood waste burners must also be listed.

Sufficient information must be included for the department to evaluate, and verify, the operation and stated control efficiencies of the control equipment involved. Attach additional sheets as needed to list all control equipment. Include references to process flow sheets required in Package Element 4A and attach any equipment layout and assembly drawings as necessary to describe all air pollution control equipment.

Notes:

{1} List the emission unit numbers that feed each individual piece of control equipment. If multiple process units (with individual numbers) discharge to one control equipment unit, list all emission unit numbers that feed that control equipment unit. For liquid tank and solid material storage, use the tank or storage unit number.

{2} Corresponding to control equipment unit numbers from Package Element 4.

{3} Baghouse, cyclone, electrostatic precipitator, enclosures, scrubber, VOC afterburners, etc.

{4} Emissions after gases have passed through control equipment. Use one line for each pollutant emitted. Attach additional sheets if required.

{5} SO₂, NO_x, particulate matter, etc.

{6} "Actual" rates are based on actual production and hours of operation. "Allowable" values are based on maximum allowable production rates. If there is no control equipment, the values in the "Allowable" column are the same as the values in the "Quantity" column in Section 2. List quantities in both pounds per hour and tons per year. Yearly values are based on 8760 hours per year unless the applicant desires to restrict hours of operation as a permit condition. If the emission rate is limited by a federally enforceable applicable requirement, then provide the value of this rate.

{7} Field test results, manufacturer's data, etc. See note {6} from Section 2, Air Pollutant Emission Rates.

{8} Specify the requirement(s) that apply to this control equipment unit and process.

SECTION 4 COMPLIANCE MONITORING DEVICES AND EQUIPMENT
 (20.11.42.12.A.(4) NMAC)

(Use additional sheets if necessary)

Unit No. {1}	Pollutant Monitored or Measured	Type of Instrument {2}	Manufacturer and Model Number	Range {3}	Sensitivity	Accurac y	Emission Units {4}	Location of Monitor {5}
N/A -UNM's main facility is not subject to CAM								

Section 4: Compliance Monitoring Devices and Equipment

Use this section to list all compliance monitoring devices and equipment used at the facility to verify emission rates and other permit terms and conditions. Use one line for each monitoring device and piece of equipment.

Notes:

- {1} List the unit number of the compliance monitoring device as shown in Package Element 4A (Process Flow Sheets).
- {2} State the type of the monitoring device. E.g. Ultra Violet Photometric Analyzer, NDIR Photometer, Opacity Meter, EPA Sampling Train (specify the sampling method number), etc.
- {3} 0- 1,000 ppm, 0 - 50 g/m3, 0 - 100% opacity, etc.
- {4} Provide the unit number(s) (from Package Element 4A – Process Flow Sheets) of the emissions unit(s) being monitored by each device.
- {5} Describe the physical location of the monitoring device and the recording device. E.g. Monitor is located in ductwork 50' upstream from stack. Recorder is located in operating control room.

SECTION 5 FUELS AND FUEL USAGE
(20.11.42.12.A.(4) NMAC)

Unit No. {1}	Type of Equipment {2}	Equipment Manufacturer	Rated Capacity {3}	FUEL DATA {4}				
				Fuel Type {5}	Amount Per Year {6}	Heating Value (State Units) {7}	Percent Sulfur {8}	Percent Ash {9}
116-TRB-1	Turbine	Solar	7.5 MW	Natural Gas	846 MMscf/yr	900 Btu/scf	N/A	N/A
116-TRB-2	Turbine	Solar	7.7 MW	Natural Gas	762 MMscf/yr	900 Btu/scf	N/A	N/A
116-BLR-1A (Natural Gas)	Boiler	English	96.2 MMBtu/hr	Natural Gas	936 MMscf/yr	900 Btu/scf	N/A	N/A
116-BLR-1A (Diesel)	Boiler	English	96.2 MMBtu/hr	Diesel	35,109 gal/yr	140 MBtu/gal	<0.5 wt. %	N/A
116-BLR-2A (Natural Gas)	Boiler	English	96.2 MMBtu/hr	Natural Gas	936 MMscf/yr	900 Btu/scf	N/A	N/A
116-BLR-2A (Diesel)	Boiler	English	96.2 MMBtu/hr	Diesel	35,109 gal/yr	140 MBtu/gal	<0.5 wt. %	N/A
176-BLR-1-3	Boiler	Miura	3 @ 12.4 MMBtu/hr (De-rated capacity = 9.82 MMBtu/hr)	Natural Gas	95.6 MMscf/yr (each)	900 Btu/scf	N.A.	N/A

SECTION 5 FUELS AND FUEL USAGE
(20.11.42.12.A.(4) NMAC)

(Continued)

Unit No. {1}	Type of Equipment {2}	Equipment Manufacturer	Rated Capacity {3}	FUEL DATA {4}				
				Fuel Type {5}	Amount Per Year {6}	Heating Value (State Units) {7}	Percent Sulfur {8}	Percent Ash {9}
262-CRM-1	Crematorium	Advanced Combustion	2 MMBtu/hr	Natural Gas	9.7 MMscf/yr	900 Btu/scf	N.A.	N.A.
338-BLR-1	Boiler	Riello	4.0 MMBtu/hr	Natural Gas	35.04 MMscf/yr	1000 Btu/scf	N.A.	N.A.
XXX-EG-X	Emergency Generators	See Attached	Various	Natural Gas	7.1 MMscf/yr	900 Btu/scf	N.A.	N.A.
XXX-EG-X	Emergency Generators	See Attached	Various	Diesel	135.8 Mgal/yr	140 MBtu/gal	<0.5 wt. %	N.A.

^a Annual fuel usage is estimated based on AP-42, manufacturer data, or maximum operating data. The annual fuel use is not a permit limit for any of the units listed in this table.
^b Percent sulfur from permit applications. For diesel engines less than 600 hp, the assumed percent sulfur is not explicitly stated in EPA AP-42 Section 3.3.

Fuels and Fuel Usage

Report all the fuel usage for all process equipment at the facility. Flares and waste burners are not listed here unless supplemental fuel is used to sustain combustion. In that case, only the supplemental fuel is reported here.

Each unit within the plant is required to complete this Section and should be attached to this Section. Show calculations in Package Element 4B.

Report all fuel used in this section.

Report the process, or operational unit numbers as shown in Package Element 4A (Process Flow Sheets).

Identify the equipment. E.g. Boiler, diesel engine, furnace, gas engine, gas turbine, oven, space heater, etc.

Report the design rate and the normal rate, if these rates are different, e.g. million btu/hr, HP, etc. If these rates have been adjusted, the adjustment should be noted on the form. Ask the Division for reporting procedures.

If fuel is used "on standby", the data for that fuel must also be provided.

Report the fuel type: 1, 2, 4, or 6 fuel oil, refinery gas, coal, wood, etc.

Report the quantity depending on the fuel type: Million cubic feet of gas, gallons of fuel oil, pounds of LPG, etc. State what units you are using.

Report the energy content depending on the fuel type: Btu/thousand ft³ for gas, Btu/lb for solid fuel, or Btu/gallon for liquid fuel.

Report the sulfur content by weight and maximum percentage by weight. Sulfur content is not required if sweet pipeline quality natural gas is used as the fuel. Specify in "fuel type" that sweet pipeline gas specification under "sulfur". Provide fuel supplier specifications for sulfur content.

Report the ash content by weight and maximum percentage by weight. Ash content is not required if sweet pipeline quality natural gas is used as the fuel.

This section

SECTION 6A RAW MATERIALS PROCESSED
(20.11.42.12.A.(4) NMAC)

(Use additional sheets if necessary)

Unit No. {1}	Material {2a}	Composition {3}	Condition {4}	Quantity Used {5} (Specify Units)
N/A – No raw materials are handled at this facility.				

SECTION 6B MATERIALS PRODUCED (DO NOT INCLUDE EMISSIONS AND WASTE PRODUCTS LISTED IN SECTIONS 2, 3, & 10)
 (20.11.42.12.A.(4)(e)(iv) NMAC)

Unit No. {1}	Material {2b}	Composition {3}	Condition {4}	Production Rates {5} (Specify Units)
N/A – No materials are produced at this facility.				

Sections 6A and 6B: Raw Materials Processed and Materials Produced

This section addresses any feedstocks or raw materials used in the plant process, and materials or products (not including solid or liquid waste products) that are generated. As an example, sour natural gas is the raw material and sweet pipeline quality gas and natural gas liquids are the products. This section quantifies a portion of the facility material balance. Some unit numbers will correspond to process equipment, as for example where a stream is "refined", such as sour gas to sweet gas, or rock crushing with rock aggregate feed and various products are produced in stages (crushers, screens).

Calculations made to determine the values shown on the form are to be shown and referenced in Package Element 4B (Emissions Calculations).

Notes: (These apply to both 6A and 6B)

- {1} Corresponding to emissions, process or operational unit numbers as shown in Package Element 4A (Process Flow Sheets).
- {2a} What is the raw material -- for example: crude oil, sour gas, raw ore.
- {2b} What is the finished product -- for example: gasoline, diesel fuel, sweet gas.
- {3} List each major component with weight percentages and chemical compositions (if known), or attach separate analysis sheet.
- {4} Provide typical particle size distribution for aggregates, pumice dust, etc. and average moisture content if known.
- {5} Barrels per day, thousands of standard cubic feet per day, tons per hour, etc. Reference process flow sheets required in Package Element 4A, including material balances.

SECTION 7 STACK PARAMETERS
(20.11.42.12.A.(4) NMAC)

(Use additional sheets if necessary)

Stack No. {1}	Emission Unit Nos. {2}	Stack Height ft. {3}	Inside Stack Exit Diameter ft {4}	EXIT GAS CONDITIONS {5}			SAMPLING PORTS		
				Temp. EF	Velocity ft/sec {6}	Moisture % by Vol	Number	Size	Location {7}
116-TRB-1	116-TRB-1	53	4.5	300 F	78	N.A.			
116-TRB-2	116-TRB-2	53	4.5	300 F	89.6	N.A.			
116-BLR-1	116-BLR-1	40	3.125	320 F	80	N.A.			
116-BLR-2	116-BLR-2	40	3.125	320 F	80	N.A.			
176-BLR-1-3	176-BLR-1-3	50	2.167	270 F	11.7	N.A.			
262-CRM-1	262-CRM-1	26.46	1.67	1470 F	16.67	N.A.			
338-BLR-1	338-BLR-1	30	1.0	300 F	80	N.A.			
216-AST-1A	216-AST-1A	N.A.	N.A.	N.A.	N.A.	N.A.			
XXX-EG-X	XXX-EG-X	The emergency generators were not modeled. Stack parameters are not given.							
XX-DL-X	XX-DL-X	N.A.	N.A.	N.A.	N.A.	N.A.			
CHEM	CHEM	Various release points (VOC and HAP emissions from Chemical Stores throughout the facility)							

Section 7: Stack Parameters

This section is used to describe the release points of all emissions associated with the facility. This includes actual stacks as well as the release point information in cases where there is no stack, such as where fugitive releases occur.

This information is required for EPA's Aerometric Information Retrieval System database and also for air dispersion modeling that may be required for either this source or another source.

Notes:

- {1} Use stack numbers from Package Element 4A (Process Flow Sheets). If there is a release point with no stack, state the location of the release point.
- {2} If one stack serves multiple processes, operations, or emissions units, provide unit numbers for all emissions units discharging to this stack.
- {3} Height above ground of the stack exit or release point.
- {4} If stack is circular, give inside diameter at exit point. If stack is not circular, provide actual exit dimensions. If stack exit is not pointed up, give direction that stack points. State whether rain cap is used.
- {5} If conditions are not measured at actual stack exit, specify location at which measurements are made.
- {6} Show calculations in sufficient detail to allow permit engineer to verify actual velocity values. These calculations should be shown in Package Element 4B and clearly identified.
- {7} Provide the physical location(s) of the sampling ports. For example: 2 ports at 90 degrees, 25 ft. from top of stack.

SECTION 8A LIQUID STORAGE TANKS - MATERIAL DATA
 (20.11.42.12.A.(4) NMAC)

(Use additional sheets if necessary)

Tank No. {1}	Material Name {2}	Composition {3}	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb-mol)	Average Storage Temp., T _{av} (EF)	True Vapor Pressure at T _{av} (psia)	Maximum Storage Temp., T _{max} (EF)	True Vapor Pressure at T _{max} (psia)
216-AST-1A	Unleaded Gasoline	Mixture	6.07	66.00	58.54	5.0402	65.66	5.7809

Section 8A. Liquid Storage Tanks - Material Data

This section is used to describe any liquid materials that are stored at the plant and are potential sources of gaseous emissions. This includes raw feedstocks, and intermediate and final product storage. If your plant has no tanks which store volatile organic compounds, or other toxic or hazardous materials, write "NA" on the top of the form.

This information is requested for the calculation and characterization of fugitive emissions. EPA's reference AP-42 Section 12 lists reference data for liquid storage tanks.

The emissions data for the tanks should be provided in Sections 2 and 3 of this application form.

Notes:

- {1} The tank numbers are to be assigned by the applicant. Use a unique tank number for each tank. These are the same numbers as are used in Package Element 4A (Process Flow Sheets) to identify each tank.
- {2} Give the trade name or commonly used name for the liquid stored in the tanks. E.g. Stoddard Solvent, fuel oil, etc
- {3} Identify each major component (including sulfur) and give its weight percent. If space is insufficient, attach analysis sheet. The material name and tank number should be clearly identified on any attachments.

SECTION 8B LIQUID STORAGE TANKS - TANK DATA
 (20.11.42.12.A.(4) NMAC)

(Use additional sheets if necessary)

Tank No. {1}	Date Installed/ Modified {2}	Material(s) Stored {3}	Roof Type {4}	Seal Type {5}	Capacity (gal)	Diameter (ft)	Vapor Space Height (ft) {6}	Roof/ Shell Color {7}	Paint Cond. {8}	Annual Throughput (gal/yr) {9}	Turnovers per Year {10}
216- AST-1A	1997	Unleaded Gasoline	FX	N.A.	4200	8	4	White	Good	190,008	45.24

Section 8B: Liquid Storage Tanks - Tank Data

Notes:

- {1} Use tank number(s) from Section 8A.
- {2} Date (mo./yr.) tank was originally installed or constructed. If the tank was later modified or reconstructed, provide the date this work was completed and attach a separate description of the modifications or reconstruction.
- {3} If the tank is used to store more than one material, use a separate line for each material and provide all the requested data for each material.
- {4} Use the following abbreviations: Fixed roof - FX, Internal Floating Roof - IF, External Floating Roof - EF, Pressure - P.
- {5} Select the appropriate number and letter from the following list that describes the tank and seal type (e.g. "2b" indicates welded tank, liquid mounted resilient seal with weather shield);
NOTE: For pressure tanks, enter control pressure (psia).

WELDED TANK SEALS

- | | | |
|---------------------------|-----------------------------|----------------------------|
| 1. Mechanical shoe | 2. Liquid mounted resilient | 3. Vapor mounted resilient |
| a. Primary only | a. Primary only | a. Primary only |
| b. Shoe mounted secondary | b. Weather shield | b. Weather shield |
| c. Rim mounted secondary | c. Rim mounted secondary | c. Rim mounted secondary |

RIVETED TANK

- 4. Mechanical shoe seal
 - a. Primary only
 - b. Shoe mounted secondary
 - c. Rim mounted secondary
- {6} This applies to fixed roof tanks **only**. Give the average distance from liquid surface to tank roof. For all other tanks, write "N.A."
- {7} Use the following abbreviations: White - WH, Aluminum (specular) - AS, Aluminum (diffuse) - AD, Light Gray - LG, Medium Gray - MG, Black - BL, Other - OT.
- {8} Describe the condition of the paint on the tank as either: Good or Poor.
- {9} Enter throughput, in gallons/year, of each material that is stored in the tank.
- {10} Turnover = annual throughput (gal) / tank capacity (gal)

SECTION 9A SOLID MATERIAL STORAGE - MATERIAL DATA – Not Applicable
(20.11.42.12.A.(4) NMAC)

(Use additional sheets if necessary)

Storage Unit No. {1}	Material Name	Emissions Unit, Process or Operation Served {2}	Storage Type {3}	Composition {4}	Date Installed or Modified (Mo./Yr)
N/A – There no solid materials stored at this facility.					

Section 9A. Solid Material Storage - Material Data

This section is used to describe any solid stored materials used in the plant process which are potential sources of particulate matter. This includes raw feedstocks, intermediate and final product storage. If there is no solid material storage at the plant, write "NA" at the top of the form.

Emissions data for solid material that is stored on the plant site should be provided in Sections 2 and 3.

Notes:

- {1} Individual storage unit numbers are assigned by the applicant in Package Element 4A (Process Flow Sheets). These same unit numbers are used in this Section and in Sections 2 and 3 to identify the storage units.
- {2} State which process, operation or emissions unit is served and whether transfer equipment is used. E.g. open feed conveyor.
- {3} Examples of storage type: silo, open pile, shed, enclosed building, enclosed weigh bin or surge bin.
- {4} Give the chemical composition of the material being stored. If space is insufficient, attach analysis sheet. The material name and storage unit number should be identified clearly in any attachments.

SECTION 9B SOLID MATERIAL STORAGE - STORAGE DATA
 (20.11.42.12.A.(4) NMAC)

(Use additional sheets if necessary)

Storage Unit No. {1}	Transfer or Transport Method {2}		Maximum Hourly Throughput (specify units)	Annual Throughput (specify units)	Dust Control Method (Storage or Transfer) {3}
	Incoming	Outgoing			
N/A – There are no solid materials stored at this facility.					

Section 9B: Solid Material Storage - Storage Data

This section is used to specify the amounts and methods of solid material transfer in the facility process or operation

Notes:

- {1} Use the same storage unit numbers as in Section 9A.
- {2} Examples of transfer or transport method
Incoming: how material is loaded into the storage unit, e.g. truck, rail car, front end loader, etc.

Outgoing: how material is moved from the storage area to the process area, e.g. closed pneumatic feed, closed gravity feed, open gravity feed, enclosed screw conveyor, front end loader, open or enclosed belt conveyor, truck.
- {3} State what kind of dust control methods are used in the storage or transfer of material. E.g. silo bin filters, telescoping stacker chutes, enclosures, dust pickup to baghouse, etc.
If the storage unit is equipped with a stack, provide the stack parameters in Section 7 (Stack Parameters)

SECTION 10 WASTE PRODUCT DISPOSAL (SOLID AND LIQUID WASTES THAT DO NOT RESULT IN AIR EMISSIONS)
(20.11.42.12.A.(4) NMAC)

(Use additional sheets if necessary)

Equipment Unit No. {1}	WASTE MATERIAL		METHOD OF DISPOSAL {4}
	Type {2}	Amount {3}	
N/A – There is no waste disposal at this facility.			

Section 10. Waste Product Disposal

Use this section to describe solid and liquid waste product disposal. Any waste product disposal that results in emissions of air pollutants, such as flares or wood waste burners, should be listed and characterized in Sections 2 and 3 of this application form.

This form is designed to complete the material and mass balances of the applicant's operation. It is not part of the part of the air emissions characterization.

Be aware that incineration of waste materials is regulated and 20.11.68 NMAC or 20.11.69 NMAC may apply.

Notes:

- {1} Give the control equipment or process unit numbers from Sections 2 through 9 that produce solid or liquid waste products which are then disposed of.
- {2} For example: Waste paper, wood chips, rubbish, garbage, acids, oils, fly ash, tailings, sulfur, etc.
- {3} Provide the quantity of waste product generated in terms of pounds, tons, or gallons per hour and per year. Specify units used.
- {4} For example: Sanitary landfill, waste pickup, sewage treatment plant, etc.

SECTION 11 CERTIFICATION -- (20.11.42.12.A.(5) NMAC)

I, Teresa Costantinidis, hereby certify that the information and data submitted in this application package are as complete, true and accurate as possible, to the best of my personal knowledge and professional expertise and experience.

Signed this 9th day of May, 2023, upon my oath of affirmation, before a notary of the State of New Mexico

Teresa Costantinidis
SIGNATURE (Responsible Official)

May 9, 2023
DATE

Teresa Costantinidis
PRINTED NAME

Senior Vice President for Finance & Administration
TITLE

Subscribed and sworn to before me on this 9th day of May, 2023.

My authorization as a Notary of the State of New Mexico expires on the 29 day of January, 2024.

[Signature]
NOTARY'S SIGNATURE

May 9, 2023
DATE

Cenissa Martinez
NOTARY'S PRINTED NAME

STATE OF NEW MEXICO
NOTARY PUBLIC
CENISSA A. MARTINEZ
COMMISSION # 1089996
EXPIRES JANUARY 29, 2024

APPENDIX B. EMISSION CALCULATION SUPPORTING INFORMATION

HAPS (116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 176-BLR-1 – 3, 338-BLR-1, 216-AST-1, XXX-EG-X)

- AP-42 Table 3.1-3 (HAPs) (116-TRB-1, 116-TRB-2)
- AP-42 Table 1.4-3, 1.4-4 (HAPs from NG boiler) (116-BLR-1A, 116-BLR-2A, 176-BLR-1 – 3, 338-BLR-1)
- AP-42 Table 1.3-3, 1.3-9, 1.3-11 (VOC, HAPs) (116-BLR-1A, 116-BLR-2A)
- AP-42 Table 3.3-2 (sm diesel engine HAPs) (XXX-EG-X)
- AP-42 Table 3.4-3 (lg diesel engine HAPs) (XXX-EG-X)
- AP-42 Table 3.2-3 (NG engine HAPs) (XXX-EG-X)
- EPA – Technical Guidance – Stage II Vapor Recovery (216-AST-1)

Ford Turbine

- Manufacturer info on 116-TRB-1 – show NO_x, VOC and CO lb/hr
- AP-42 Table 3.1-2a (PM)

Ford Boilers

- Test data for CO lb/hr for 116-BLRs on NG

Steam Boilers and CHTM Boiler

- Manufacturer info on Miura Boilers (176-BLR-1 - 3)
- AP-42 Table 1.4-1 "Small Boiler", AP-42 Table 1.4-2 "Small Boiler" (176-BLR-1 – 3, 338-BLR-1)

ARF Crematorium

- Mfg info on crematorium (262-CRM-1)

Unpaved Parking Lots

- AP-42 Section 13.2.2 "Unpaved Roads" (XXX-DL-X)

**Hazardous Air Pollutants (HAPS)
Emission Background Documents**

**(116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 176-
BLR-1 – 3, 338-BLR-1, 216-AST-1, XXX-EG-X)**

3.1 Stationary Gas Turbines

3.1.1 General¹

Gas turbines, also called “combustion turbines”, are used in a broad scope of applications including electric power generation, cogeneration, natural gas transmission, and various process applications. Gas turbines are available with power outputs ranging in size from 300 horsepower (hp) to over 268,000 hp, with an average size of 40,200 hp.² The primary fuels used in gas turbines are natural gas and distillate (No. 2) fuel oil.³

3.1.2 Process Description^{1,2}

A gas turbine is an internal combustion engine that operates with rotary rather than reciprocating motion. Gas turbines are essentially composed of three major components: compressor, combustor, and power turbine. In the compressor section, ambient air is drawn in and compressed up to 30 times ambient pressure and directed to the combustor section where fuel is introduced, ignited, and burned. Combustors can either be annular, can-annular, or silo. An annular combustor is a doughnut-shaped, single, continuous chamber that encircles the turbine in a plane perpendicular to the air flow. Can-annular combustors are similar to the annular; however, they incorporate several can-shaped combustion chambers rather than a single continuous chamber. Annular and can-annular combustors are based on aircraft turbine technology and are typically used for smaller scale applications. A silo (frame-type) combustor has one or more combustion chambers mounted external to the gas turbine body. Silo combustors are typically larger than annular or can-annular combustors and are used for larger scale applications.

The combustion process in a gas turbine can be classified as diffusion flame combustion, or lean-premix staged combustion. In the diffusion flame combustion, the fuel/air mixing and combustion take place simultaneously in the primary combustion zone. This generates regions of near-stoichiometric fuel/air mixtures where the temperatures are very high. For lean-premix combustors, fuel and air are thoroughly mixed in an initial stage resulting in a uniform, lean, unburned fuel/air mixture which is delivered to a secondary stage where the combustion reaction takes place. Manufacturers use different types of fuel/air staging, including fuel staging, air staging, or both; however, the same staged, lean-premix principle is applied. Gas turbines using staged combustion are also referred to as Dry Low NO_x combustors. The majority of gas turbines currently manufactured are lean-premix staged combustion turbines.

Hot gases from the combustion section are diluted with additional air from the compressor section and directed to the power turbine section at temperatures up to 2600°F. Energy from the hot exhaust gases, which expand in the power turbine section, are recovered in the form of shaft horsepower. More than 50 percent of the shaft horsepower is needed to drive the internal compressor and the balance of recovered shaft horsepower is available to drive an external load.² Gas turbines may have one, two, or three shafts to transmit power between the inlet air compression turbine, the power turbine, and the exhaust turbine. The heat content of the exhaust gases exiting the turbine can either be discarded without heat recovery (simple cycle); recovered with a heat exchanger to preheat combustion air entering the combustor (regenerative cycle); recovered in a heat recovery steam generator to raise process steam, with or without supplementary firing (cogeneration); or recovered, with or without supplementary firing, to raise steam for a steam turbine Rankine cycle (combined cycle or repowering).

Table 3.1-3. EMISSION FACTORS FOR HAZARDOUS AIR POLLUTANTS FROM NATURAL GAS-FIRED STATIONARY GAS TURBINES^a

Emission Factors ^b - Uncontrolled		
Pollutant	Emission Factor (lb/MMBtu) ^c	Emission Factor Rating
1,3-Butadiene ^d	< 4.3 E-07	D
Acetaldehyde	4.0 E-05	C
Acrolein	6.4 E-06	C
Benzene ^e	1.2 E-05	A
Ethylbenzene	3.2 E-05	C
Formaldehyde ^f	7.1 E-04	A
Naphthalene	1.3 E-06	C
PAH	2.2 E-06	C
Propylene Oxide ^d	< 2.9 E-05	D
Toluene	1.3 E-04	C
Xylenes	6.4 E-05	C

^a SCC for natural gas-fired turbines include 2-01-002-01, 2-02-002-01, 2-02-002-03, 2-03-002-02, and 2-03-002-03. Hazardous Air Pollutants as defined in Section 112 (b) of the *Clean Air Act*.

^b Factors are derived from units operating at high loads (≥ 80 percent load) only. For information on units operating at other loads, consult the background report for this chapter (Reference 16), available at "www.epa.gov/ttn/chief".

^c Emission factors based on an average natural gas heating value (HHV) of 1020 Btu/scf at 60°F. To convert from (lb/MMBtu) to (lb/10⁶ scf), multiply by 1020. These emission factors can be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this heating value.

^d Compound was not detected. The presented emission value is based on one-half of the detection limit.

^e Benzene with SCONOX catalyst is 9.1 E-07, rating of D.

^f Formaldehyde with SCONOX catalyst is 2.0 E-05, rating of D.

1.4 Natural Gas Combustion

1.4.1 General¹⁻²

Natural gas is one of the major combustion fuels used throughout the country. It is mainly used to generate industrial and utility electric power, produce industrial process steam and heat, and heat residential and commercial space. Natural gas consists of a high percentage of methane (generally above 85 percent) and varying amounts of ethane, propane, butane, and inerts (typically nitrogen, carbon dioxide, and helium). The average gross heating value of natural gas is approximately 1,020 British thermal units per standard cubic foot (Btu/scf), usually varying from 950 to 1,050 Btu/scf.

1.4.2 Firing Practices³⁻⁵

There are three major types of boilers used for natural gas combustion in commercial, industrial, and utility applications: watertube, firetube, and cast iron. Watertube boilers are designed to pass water through the inside of heat transfer tubes while the outside of the tubes is heated by direct contact with the hot combustion gases and through radiant heat transfer. The watertube design is the most common in utility and large industrial boilers. Watertube boilers are used for a variety of applications, ranging from providing large amounts of process steam, to providing hot water or steam for space heating, to generating high-temperature, high-pressure steam for producing electricity. Furthermore, watertube boilers can be distinguished either as field erected units or packaged units.

Field erected boilers are boilers that are constructed on site and comprise the larger sized watertube boilers. Generally, boilers with heat input levels greater than 100 MMBtu/hr, are field erected. Field erected units usually have multiple burners and, given the customized nature of their construction, also have greater operational flexibility and NO_x control options. Field erected units can also be further categorized as wall-fired or tangential-fired. Wall-fired units are characterized by multiple individual burners located on a single wall or on opposing walls of the furnace while tangential units have several rows of air and fuel nozzles located in each of the four corners of the boiler.

Package units are constructed off-site and shipped to the location where they are needed. While the heat input levels of packaged units may range up to 250 MMBtu/hr, the physical size of these units are constrained by shipping considerations and generally have heat input levels less than 100 MMBtu/hr. Packaged units are always wall-fired units with one or more individual burners. Given the size limitations imposed on packaged boilers, they have limited operational flexibility and cannot feasibly incorporate some NO_x control options.

Firetube boilers are designed such that the hot combustion gases flow through tubes, which heat the water circulating outside of the tubes. These boilers are used primarily for space heating systems, industrial process steam, and portable power boilers. Firetube boilers are almost exclusively packaged units. The two major types of firetube units are Scotch Marine boilers and the older firebox boilers. In cast iron boilers, as in firetube boilers, the hot gases are contained inside the tubes and the water being heated circulates outside the tubes. However, the units are constructed of cast iron rather than steel. Virtually all cast iron boilers are constructed as package boilers. These boilers are used to produce either low-pressure steam or hot water, and are most commonly used in small commercial applications.

Natural gas is also combusted in residential boilers and furnaces. Residential boilers and furnaces generally resemble firetube boilers with flue gas traveling through several channels or tubes with water or air circulated outside the channels or tubes.

1.4.3 Emissions³⁻⁴

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM
NATURAL GAS COMBUSTION (Continued)

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM
NATURAL GAS COMBUSTION^a

CAS No.	Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
91-57-6	2-Methylnaphthalene ^{b,c}	2.4E-05	D
56-49-5	3-Methylchloranthrene ^{b,c}	<1.8E-06	E
	7,12-Dimethylbenz(a)anthracene ^{b,c}	<1.6E-05	E
83-32-9	Acenaphthene ^{b,c}	<1.8E-06	E
203-96-8	Acenaphthylene ^{b,c}	<1.8E-06	E
120-12-7	Anthracene ^{b,c}	<2.4E-06	E
56-55-3	Benz(a)anthracene ^{b,c}	<1.8E-06	E
71-43-2	Benzene ^b	2.1E-03	B
50-32-8	Benzo(a)pyrene ^{b,c}	<1.2E-06	E
205-99-2	Benzo(b)fluoranthene ^{b,c}	<1.8E-06	E
191-24-2	Benzo(g,h,i)perylene ^{b,c}	<1.2E-06	E
207-08-9	Benzo(k)fluoranthene ^{b,c}	<1.8E-06	E
106-97-8	Butane	2.1E+00	E
218-01-9	Chrysene ^{b,c}	<1.8E-06	E
53-70-3	Dibenzo(a,h)anthracene ^{b,c}	<1.2E-06	E
25321-22-6	Dichlorobenzene ^b	1.2E-03	E
74-84-0	Ethane	3.1E+00	E
206-44-0	Fluoranthene ^{b,c}	3.0E-06	E
86-73-7	Fluorene ^{b,c}	2.8E-06	E
50-00-0	Formaldehyde ^b	7.5E-02	B
110-54-3	Hexane ^b	1.8E+00	E
193-39-5	Indeno(1,2,3-cd)pyrene ^{b,c}	<1.8E-06	E
91-20-3	Naphthalene ^b	6.1E-04	E
109-66-0	Pentane	2.6E+00	E
85-01-8	Phenanthrene ^{b,c}	1.7E-05	D
74-98-6	Propane	1.6E+00	E

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM
NATURAL GAS COMBUSTION (Continued)

CAS No.	Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
129-00-0	Pyrene ^{b, c}	5.0E-06	E
108-88-3	Toluene ^b	3.4E-03	C

- ^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. Emission Factors preceded with a less-than symbol are based on method detection limits.
- ^b Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.
- ^c HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.
- ^d The sum of individual organic compounds may exceed the VOC and TOC emission factors due to differences in test methods and the availability of test data for each pollutant.

TABLE 1.4-4. EMISSION FACTORS FOR METALS FROM NATURAL GAS COMBUSTION^a

CAS No.	Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
7440-38-2	Arsenic ^b	2.0E-04	E
7440-39-3	Barium	4.4E-03	D
7440-41-7	Beryllium ^b	<1.2E-05	E
7440-43-9	Cadmium ^b	1.1E-03	D
7440-47-3	Chromium ^b	1.4E-03	D
7440-48-4	Cobalt ^b	8.4E-05	D
7440-50-8	Copper	8.5E-04	C
7439-96-5	Manganese ^b	3.8E-04	D
7439-97-6	Mercury ^b	2.6E-04	D
7439-98-7	Molybdenum	1.1E-03	D
7440-02-0	Nickel ^b	2.1E-03	C
7782-49-2	Selenium ^b	<2.4E-05	E
7440-62-2	Vanadium	2.3E-03	D
7440-66-6	Zinc	2.9E-02	E

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. Emission factors preceded by a less-than symbol are based on method detection limits. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020.

^b Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.

1.3 Fuel Oil Combustion

1.3.1 General¹⁻³

Two major categories of fuel oil are burned by combustion sources: distillate oils and residual oils. These oils are further distinguished by grade numbers, with Nos. 1 and 2 being distillate oils; Nos. 5 and 6 being residual oils; and No. 4 being either distillate oil or a mixture of distillate and residual oils. No. 6 fuel oil is sometimes referred to as Bunker C. Distillate oils are more volatile and less viscous than residual oils. They have negligible nitrogen and ash contents and usually contain less than 0.3 percent sulfur (by weight). Distillate oils are used mainly in domestic and small commercial applications, and include kerosene and diesel fuels. Being more viscous and less volatile than distillate oils, the heavier residual oils (Nos. 5 and 6) may need to be heated for ease of handling and to facilitate proper atomization. Because residual oils are produced from the residue remaining after the lighter fractions (gasoline, kerosene, and distillate oils) have been removed from the crude oil, they contain significant quantities of ash, nitrogen, and sulfur. Residual oils are used mainly in utility, industrial, and large commercial applications.

1.3.2 Firing Practices⁴

The major boiler configurations for fuel oil-fired combustors are watertube, firetube, cast iron, and tubeless design. Boilers are classified according to design and orientation of heat transfer surfaces, burner configuration, and size. These factors can all strongly influence emissions as well as the potential for controlling emissions.

Watertube boilers are used in a variety of applications ranging from supplying large amounts of process steam to providing space heat for industrial facilities. In a watertube boiler, combustion heat is transferred to water flowing through tubes which line the furnace walls and boiler passes. The tube surfaces in the furnace (which houses the burner flame) absorb heat primarily by radiation from the flames. The tube surfaces in the boiler passes (adjacent to the primary furnace) absorb heat primarily by convective heat transfer.

Firetube boilers are used primarily for heating systems, industrial process steam generators, and portable power boilers. In firetube boilers, the hot combustion gases flow through the tubes while the water being heated circulates outside of the tubes. At high pressures and when subjected to large variations in steam demand, firetube units are more susceptible to structural failure than watertube boilers. This is because the high-pressure steam in firetube units is contained by the boiler walls rather than by multiple small-diameter watertubes, which are inherently stronger. As a consequence, firetube boilers are typically small and are used primarily where boiler loads are relatively constant. Nearly all firetube boilers are sold as packaged units because of their relatively small size.

A cast iron boiler is one in which combustion gases rise through a vertical heat exchanger and out through an exhaust duct. Water in the heat exchanger tubes is heated as it moves upward through the tubes. Cast iron boilers produce low pressure steam or hot water, and generally burn oil or natural gas. They are used primarily in the residential and commercial sectors.

Another type of heat transfer configuration used on smaller boilers is the tubeless design. This design incorporates nested pressure vessels with water in between the shells. Combustion gases are fired into the inner pressure vessel and are then sometimes recirculated outside the second vessel.

Table 1.3-3. EMISSION FACTORS FOR TOTAL ORGANIC COMPOUNDS (TOC), METHANE, AND NONMETHANE TOC (NMTOC) FROM UNCONTROLLED FUEL OIL COMBUSTION^a

EMISSION FACTOR RATING: A

Firing Configuration (SCC)	TOC ^b Emission Factor (lb/10 ³ gal)	Methane ^b Emission Factor (lb/10 ³ gal)	NMTOC ^b Emission Factor (lb/10 ³ gal)
Utility boilers			
No. 6 oil fired, normal firing (1-01-004-01)	1.04	0.28	0.76
No. 6 oil fired, tangential firing (1-01-004-04)	1.04	0.28	0.76
No. 5 oil fired, normal firing (1-01-004-05)	1.04	0.28	0.76
No. 5 oil fired, tangential firing (1-01-004-06)	1.04	0.28	0.76
No. 4 oil fired, normal firing (1-01-005-04)	1.04	0.28	0.76
No. 4 oil fired, tangential firing (1-01-005-05)	1.04	0.28	0.76
Industrial boilers			
No. 6 oil fired (1-02-004-01/02/03)	1.28	1.00	0.28
No. 5 oil fired (1-02-004-04)	1.28	1.00	0.28
Distillate oil fired (1-02-005-01/02/03)	0.252	0.052	0.2
No. 4 oil fired (1-02-005-04)	0.252	0.052	0.2
Commercial/institutional/residential combustors			
No. 6 oil fired (1-03-004-01/02/03)	1.605	0.475	1.13
No. 5 oil fired (1-03-004-04)	1.605	0.475	1.13
Distillate oil fired (1-03-005-01/02/03)	0.556	0.216	0.34
No. 4 oil fired (1-03-005-04)	0.556	0.216	0.34
Residential furnace (A2104004/A2104011)	2.493	1.78	0.713

a To convert from lb/103 gal to kg/103 L, multiply by 0.12. SCC = Source Classification Code.

b References 29-32. Volatile organic compound emissions can increase by several orders of magnitude if the boiler is improperly operated or is not well maintained.

Table 1.3-9. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM FUEL OIL COMBUSTION^a

Organic Compound	Average Emission Factor ^b (lb/10 ³ Gal)	EMISSION FACTOR RATING
Benzene	2.14E-04	C
Ethylbenzene	6.36E-05 ^c	E
Formaldehyde ^d	3.30E-02	C
Naphthalene	1.13E-03	C
1,1,1-Trichloroethane	2.36E-04 ^c	E
Toluene	6.20E-03	D
o-Xylene	1.09E-04 ^c	E
Acenaphthene	2.11E-05	C
Acenaphthylene	2.53E-07	D
Anthracene	1.22E-06	C
Benz(a)anthracene	4.01E-06	C
Benzo(b,k)fluoranthene	1.48E-06	C
Benzo(g,h,i)perylene	2.26E-06	C
Chrysene	2.38E-06	C
Dibenzo(a,h) anthracene	1.67E-06	D
Fluoranthene	4.84E-06	C
Fluorene	4.47E-06	C
Indo(1,2,3-cd)pyrene	2.14E-06	C
Phenanthrene	1.05E-05	C
Pyrene	4.25E-06	C
OCDD	3.10E-09 ^c	E

^a Data are for residual oil fired boilers, Source Classification Codes (SCCs) 1-01-004-01/04.

^b References 64-72. To convert from lb/10³ gal to kg/10³ L, multiply by 0.12.

^c Based on data from one source test (Reference 67).

^d The formaldehyde number presented here is based only on data from utilities using No. 6 oil. The number presented in Table 1.3-7 is based on utility, commercial, and industrial boilers.

Table 1.3-11. EMISSION FACTORS FOR METALS FROM UNCONTROLLED NO. 6 FUEL OIL COMBUSTION^a

Metal	Average Emission Factor ^{b, d} (lb/10 ³ Gal)	EMISSION FACTOR RATING
Antimony	5.25E-03 ^c	E
Arsenic	1.32E-03	C
Barium	2.57E-03	D
Beryllium	2.78E-05	C
Cadmium	3.98E-04	C
Chloride	3.47E-01	D
Chromium	8.45E-04	C
Chromium VI	2.48E-04	C
Cobalt	6.02E-03	D
Copper	1.76E-03	C
Fluoride	3.73E-02	D
Lead	1.51E-03	C
Manganese	3.00E-03	C
Mercury	1.13E-04	C
Molybdenum	7.87E-04	D
Nickel	8.45E-02	C
Phosphorous	9.46E-03	D
Selenium	6.83E-04	C
Vanadium	3.18E-02	D
Zinc	2.91E-02	D

^a Data are for residual oil fired boilers, Source Classification Codes (SCCs) 1-01-004-01/04.

^b References 64-72. 18 of 19 sources were uncontrolled and 1 source was controlled with low efficiency ESP. To convert from lb/10³ gal to kg/10³ L, multiply by 0.12.

^c References 29-32,40-44.

^d For oil/water mixture, reduce factors in proportion to water content of the fuel (due to dilution). To adjust the listed values for water content, multiply the listed value by 1-decimal fraction of water (ex: For fuel with 9 percent water by volume, multiply by 1-0.9=.91).

3.3 Gasoline And Diesel Industrial Engines

3.3.1 General

The engine category addressed by this section covers a wide variety of industrial applications of both gasoline and diesel internal combustion (IC) engines such as aerial lifts, fork lifts, mobile refrigeration units, generators, pumps, industrial sweepers/scrubbers, material handling equipment (such as conveyors), and portable well-drilling equipment. The three primary fuels for reciprocating IC engines are gasoline, diesel fuel oil (No.2), and natural gas. Gasoline is used primarily for mobile and portable engines. Diesel fuel oil is the most versatile fuel and is used in IC engines of all sizes. The rated power of these engines covers a rather substantial range, up to 250 horsepower (hp) for gasoline engines and up to 600 hp for diesel engines. (Diesel engines greater than 600 hp are covered in Section 3.4, "Large Stationary Diesel And All Stationary Dual-fuel Engines".) Understandably, substantial differences in engine duty cycles exist. It was necessary, therefore, to make reasonable assumptions concerning usage in order to formulate some of the emission factors.

3.3.2 Process Description

All reciprocating IC engines operate by the same basic process. A combustible mixture is first compressed in a small volume between the head of a piston and its surrounding cylinder. The mixture is then ignited, and the resulting high-pressure products of combustion push the piston through the cylinder. This movement is converted from linear to rotary motion by a crankshaft. The piston returns, pushing out exhaust gases, and the cycle is repeated.

There are 2 methods used for stationary reciprocating IC engines: compression ignition (CI) and spark ignition (SI). This section deals with both types of reciprocating IC engines. All diesel-fueled engines are compression ignited, and all gasoline-fueled engines are spark ignited.

In CI engines, combustion air is first compression heated in the cylinder, and diesel fuel oil is then injected into the hot air. Ignition is spontaneous because the air temperature is above the autoignition temperature of the fuel. SI engines initiate combustion by the spark of an electrical discharge. Usually the fuel is mixed with the air in a carburetor (for gasoline) or at the intake valve (for natural gas), but occasionally the fuel is injected into the compressed air in the cylinder.

CI engines usually operate at a higher compression ratio (ratio of cylinder volume when the piston is at the bottom of its stroke to the volume when it is at the top) than SI engines because fuel is not present during compression; hence there is no danger of premature autoignition. Since engine thermal efficiency rises with increasing pressure ratio (and pressure ratio varies directly with compression ratio), CI engines are more efficient than SI engines. This increased efficiency is gained at the expense of poorer response to load changes and a heavier structure to withstand the higher pressures.¹

3.3.3 Emissions

Most of the pollutants from IC engines are emitted through the exhaust. However, some total organic compounds (TOC) escape from the crankcase as a result of blowby (gases that are vented from the oil pan after they have escaped from the cylinder past the piston rings) and from the fuel tank and carburetor because of evaporation. Nearly all of the TOCs from diesel CI engines enter the

Table 3.3-2. SPECIATED ORGANIC COMPOUND EMISSION FACTORS FOR UNCONTROLLED DIESEL ENGINES^a

EMISSION FACTOR RATING: E

Pollutant	Emission Factor (Fuel Input) (lb/MMBtu)
Benzene ^b	9.33 E-04
Toluene ^b	4.09 E-04
Xylenes ^b	2.85 E-04
Propylene	2.58 E-03
1,3-Butadiene ^{b,c}	<3.91 E-05
Formaldehyde ^b	1.18 E-03
Acetaldehyde ^b	7.67 E-04
Acrolein ^b	<9.25 E-05
Polycyclic aromatic hydrocarbons (PAH)	
Naphthalene ^b	8.48 E-05
Acenaphthylene	<5.06 E-06
Acenaphthene	<1.42 E-06
Fluorene	2.92 E-05
Phenanthrene	2.94 E-05
Anthracene	1.87 E-06
Fluoranthene	7.61 E-06
Pyrene	4.78 E-06
Benzo(a)anthracene	1.68 E-06
Chrysene	3.53 E-07
Benzo(b)fluoranthene	<9.91 E-08
Benzo(k)fluoranthene	<1.55 E-07
Benzo(a)pyrene	<1.88 E-07
Indeno(1,2,3-cd)pyrene	<3.75 E-07
Dibenz(a,h)anthracene	<5.83 E-07
Benzo(g,h,l)perylene	<4.89 E-07
TOTAL PAH	1.68 E-04

^a Based on the uncontrolled levels of 2 diesel engines from References 6-7. Source Classification Codes 2-02-001-02, 2-03-001-01. To convert from lb/MMBtu to ng/J, multiply by 430.

^b Hazardous air pollutant listed in the *Clean Air Act*.

^c Based on data from 1 engine.

3.4 Large Stationary Diesel And All Stationary Dual-fuel Engines

3.4.1 General

The primary domestic use of large stationary diesel engines (greater than 600 horsepower [hp]) is in oil and gas exploration and production. These engines, in groups of 3 to 5, supply mechanical power to operate drilling (rotary table), mud pumping, and hoisting equipment, and may also operate pumps or auxiliary power generators. Another frequent application of large stationary diesels is electricity generation for both base and standby service. Smaller uses include irrigation, hoisting, and nuclear power plant emergency cooling water pump operation.

Dual-fuel engines were developed to obtain compression ignition performance and the economy of natural gas, using a minimum of 5 to 6 percent diesel fuel to ignite the natural gas. Large dual-fuel engines have been used almost exclusively for prime electric power generation. This section includes all dual-fuel engines.

3.4.2 Process Description

All reciprocating internal combustion (IC) engines operate by the same basic process. A combustible mixture is first compressed in a small volume between the head of a piston and its surrounding cylinder. The mixture is then ignited, and the resulting high-pressure products of combustion push the piston through the cylinder. This movement is converted from linear to rotary motion by a crankshaft. The piston returns, pushing out exhaust gases, and the cycle is repeated.

There are 2 ignition methods used in stationary reciprocating IC engines, compression ignition (CI) and spark ignition (SI). In CI engines, combustion air is first compression heated in the cylinder, and diesel fuel oil is then injected into the hot air. Ignition is spontaneous because the air temperature is above the autoignition temperature of the fuel. SI engines initiate combustion by the spark of an electrical discharge. Usually the fuel is mixed with the air in a carburetor (for gasoline) or at the intake valve (for natural gas), but occasionally the fuel is injected into the compressed air in the cylinder. Although all diesel- fueled engines are compression ignited and all gasoline- and gas-fueled engines are spark ignited, gas can be used in a CI engine if a small amount of diesel fuel is injected into the compressed gas/air mixture to burn any mixture ratio of gas and diesel oil (hence the name dual fuel), from 6 to 100 percent diesel oil.

CI engines usually operate at a higher compression ratio (ratio of cylinder volume when the piston is at the bottom of its stroke to the volume when it is at the top) than SI engines because fuel is not present during compression; hence there is no danger of premature autoignition. Since engine thermal efficiency rises with increasing pressure ratio (and pressure ratio varies directly with compression ratio), CI engines are more efficient than SI engines. This increased efficiency is gained at the expense of poorer response to load changes and a heavier structure to withstand the higher pressures.¹

3.4.3 Emissions And Controls

Most of the pollutants from IC engines are emitted through the exhaust. However, some total organic compounds (TOC) escape from the crankcase as a result of blowby (gases that are vented from the oil pan after they have escaped from the cylinder past the piston rings) and from the fuel tank

Table 3.4-3. SPECIATED ORGANIC COMPOUND EMISSION FACTORS FOR LARGE UNCONTROLLED STATIONARY DIESEL ENGINES^a

EMISSION FACTOR RATING: E

Pollutant	Emission Factor (lb/MMBtu) (fuel input)
Benzene ^b	7.76 E-04
Toluene ^b	2.81 E-04
Xylenes ^b	1.93 E-04
Propylene	2.79 E-03
Formaldehyde ^b	7.89 E-05
Acetaldehyde ^b	2.52 E-05
Acrolein ^b	7.88 E-06

^aBased on 1 uncontrolled diesel engine from Reference 7. Source Classification Code 2-02-004-01. Not enough information to calculate the output-specific emission factors of lb/hp-hr. To convert from lb/MMBtu to ng/J, multiply by 430.

^bHazardous air pollutant listed in the *Clean Air Act*.

3.2 Natural Gas-fired Reciprocating Engines

3.2.1 General¹⁻³

Most natural gas-fired reciprocating engines are used in the natural gas industry at pipeline compressor and storage stations and at gas processing plants. These engines are used to provide mechanical shaft power for compressors and pumps. At pipeline compressor stations, engines are used to help move natural gas from station to station. At storage facilities, they are used to help inject the natural gas into high pressure natural gas storage fields. At processing plants, these engines are used to transmit fuel within a facility and for process compression needs (e.g., refrigeration cycles). The size of these engines ranges from 50 brake horsepower (bhp) to 11,000 bhp. In addition, some engines in service are 50 - 60 years old and consequently have significant differences in design compared to newer engines, resulting in differences in emissions and the ability to be retrofitted with new parts or controls.

At pipeline compressor stations, reciprocating engines are used to power reciprocating compressors that move compressed natural gas (500 - 2000 psig) in a pipeline. These stations are spaced approximately 50 to 100 miles apart along a pipeline that stretches from a gas supply area to the market area. The reciprocating compressors raise the discharge pressure of the gas in the pipeline to overcome the effect of frictional losses in the pipeline upstream of the station, in order to maintain the required suction pressure at the next station downstream or at various downstream delivery points. The volume of gas flowing and the amount of subsequent frictional losses in a pipeline are heavily dependent on the market conditions that vary with weather and industrial activity, causing wide pressure variations. The number of engines operating at a station, the speed of an individual engine, and the amount of individual engine horsepower (load) needed to compress the natural gas is dependent on the pressure of the compressed gas received by the station, the desired discharge pressure of the gas, and the amount of gas flowing in the pipeline. Reciprocating compressors have a wider operating bandwidth than centrifugal compressors, providing increased flexibility in varying flow conditions. Centrifugal compressors powered by natural gas turbines are also used in some stations and are discussed in another section of this document.

A compressor in storage service pumps gas from a low-pressure storage field (500 - 800 psig) to a higher pressure transmission pipeline (700 - 1000 psig) and/or pumps gas from a low-pressure transmission line (500 - 800 psig) to a higher pressure storage field (800 - 2000 psig).

Storage reciprocating compressors must be flexible enough to allow operation across a wide band of suction and discharge pressures and volume variations. The compressor must be able to compress at high compression ratios with low volumes and compress at low compression ratios with high volumes. These conditions require varying speeds and load (horsepower) conditions for the reciprocating engine powering the reciprocating compressor.

Reciprocating compressors are used at processing plants for process compression needs (e.g. refrigeration cycles). The volume of gas compressed varies, but the pressure needed for the process is more constant than the other two cases mentioned above.

3.2.2 Process Description¹⁻³

Natural gas-fired reciprocating engines are separated into three design classes: 2-cycle (stroke) lean-burn, 4-stroke lean-burn, and 4-stroke rich-burn. Two-stroke engines complete the power cycle in a

Table 3.2-3. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE RICH-BURN
 ENGINES^a
 (SCC 2-02-002-53)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO _x ^c 90 - 105% Load	2.21 E+00	A
NO _x ^c <90% Load	2.27 E+00	C
CO ^c 90 - 105% Load	3.72 E+00	A
CO ^c <90% Load	3.51 E+00	C
CO ₂ ^d	1.10 E+02	A
SO ₂ ^e	5.88 E-04	A
TOC ^f	3.58 E-01	C
Methane ^g	2.30 E-01	C
VOC ^h	2.96 E-02	C
PM10 (filterable) ^{ij}	9.50 E-03	E
PM2.5 (filterable) ^j	9.50 E-03	E
PM Condensable ^k	9.91 E-03	E
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane ^l	2.53 E-05	C
1,1,2-Trichloroethane ^l	<1.53 E-05	E
1,1-Dichloroethane	<1.13 E-05	E
1,2-Dichloroethane	<1.13 E-05	E
1,2-Dichloropropane	<1.30 E-05	E
1,3-Butadiene ^l	6.63 E-04	D
1,3-Dichloropropene ^l	<1.27 E-05	E
Acetaldehyde ^{l,m}	2.79 E-03	C
Acrolein ^{l,m}	2.63 E-03	C
Benzene ^l	1.58 E-03	B
Butyr/isobutyraldehyde	4.86 E-05	D
Carbon Tetrachloride ^l	<1.77 E-05	E

Table 3.2-3. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE RICH-BURN ENGINES
(Concluded)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Chlorobenzene ¹	<1.29 E-05	E
Chloroform ¹	<1.37 E-05	E
Ethane ⁿ	7.04 E-02	C
Ethylbenzene ¹	<2.48 E-05	E
Ethylene Dibromide ¹	<2.13 E-05	E
Formaldehyde ^{1,m}	2.05 E-02	A
Methanol ¹	3.06 E-03	D
Methylene Chloride ¹	4.12 E-05	C
Naphthalene ¹	<9.71 E-05	E
PAH ¹	1.41 E-04	D
Styrene ¹	<1.19 E-05	E
Toluene ¹	5.58 E-04	A
Vinyl Chloride ¹	<7.18 E-06	E
Xylene ¹	1.95 E-04	A

^a Reference 7. Factors represent uncontrolled levels. For NO_x, CO, and PM-10, "uncontrolled" means no combustion or add-on controls; however, the factor may include turbocharged units. For all other pollutants, "uncontrolled" means no oxidation control; the data set may include units with control techniques used for NO_x control, such as PCC and SCR for lean burn engines, and PSC for rich burn engines. Factors are based on large population of engines. Factors are for engines at all loads, except as indicated. SCC = Source Classification Code. TOC = Total Organic Compounds. PM10 = Particulate Matter ≤ 10 microns (μm) aerodynamic diameter. A "<" sign in front of a factor means that the corresponding emission factor is based on one-half of the method detection limit.

^b Emission factors were calculated in units of (lb/MMBtu) based on procedures in EPA Method 19. To convert from (lb/MMBtu) to (lb/10⁶ scf), multiply by the heat content of the fuel. If the heat content is not available, use 1020 Btu/scf. To convert from (lb/MMBtu) to (lb/hp-hr) use the following equation:

$$\text{lb/hp-hr} = \text{lb/MMBtu} \cdot \text{heat input, MMBtu/hr} / \text{operating HP, 1/hp}$$

^c Emission tests with unreported load conditions were not included in the data set.

^d Based on 99.5% conversion of the fuel carbon to CO₂. CO₂ [lb/MMBtu] = (3.67)(%CON)(C)(D)(1/h), where %CON = percent conversion of fuel carbon to CO₂,

- C = carbon content of fuel by weight (0.75), D = density of fuel, $4.1 \text{ E}+04 \text{ lb}/10^6 \text{ scf}$, and h = heating value of natural gas (assume 1020 Btu/scf at 60°F).
- ^e Based on 100% conversion of fuel sulfur to SO_2 . Assumes sulfur content in natural gas of $2,000 \text{ gr}/10^6 \text{ scf}$.
 - ^f Emission factor for TOC is based on measured emission levels from 6 source tests.
 - ^g Emission factor for methane is determined by subtracting the VOC and ethane emission factors from the TOC emission factor.
 - ^h VOC emission factor is based on the sum of the emission factors for all speciated organic compounds. Methane and ethane emissions were not measured for this engine category.
 - ⁱ No data were available for uncontrolled engines. PM10 emissions are for engines equipped with a PCC.
 - ^j Considered $\leq 1 \mu\text{m}$ in aerodynamic diameter. Therefore, for filterable PM emissions, $\text{PM}_{10}(\text{filterable}) = \text{PM}_{2.5}(\text{filterable})$.
 - ^k No data were available for condensable emissions. The presented emission factor reflects emissions from 4SLB engines.
 - ^l Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.
 - ^m For rich-burn engines, no interference is suspected in quantifying aldehyde emissions. The presented emission factors are based on FTIR and CARB 430 emissions data measurements.
 - ⁿ Ethane emission factor is determined by subtracting the VOC emission factor from the NMHC emission factor.

United States
Environmental Protection
Agency

Office of Air Quality
Planning and Standards
Research Triangle Park NC 27711

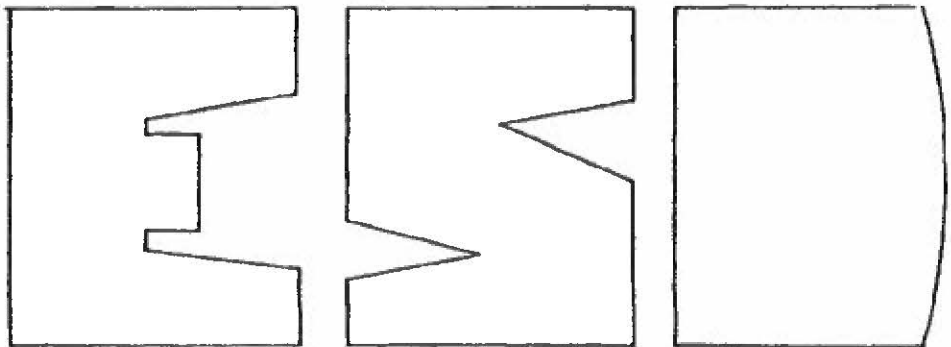
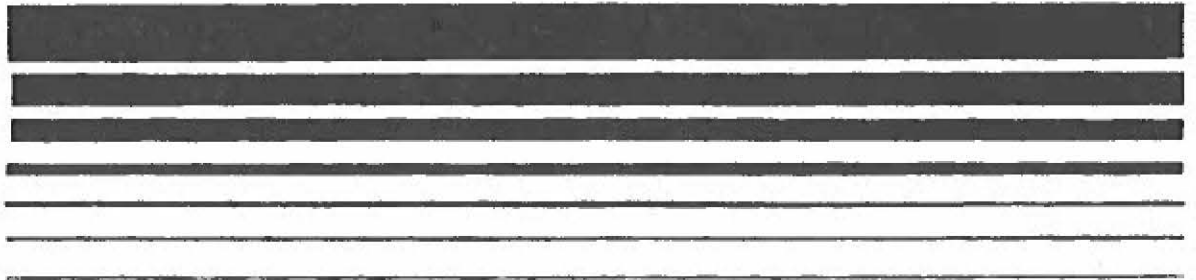
EPA-450/3-91-022a
November 1991

Air



Technical Guidance - Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities

Volume I: Chapters



EPA-450/3-91-022a

Technical Guidance - Stage II Vapor Recovery Systems for Control of Vehicle Refueling
at Gasoline Dispensing Facilities, Volume I: Chapters

3.0 SOURCES OF EMISSIONS

In this chapter, the emission sources at service stations are described along with factors that affect the rate at which emissions occur. In addition, emission estimates or emission factors are presented that represent emissions in different areas of the country. Emission rates for different model facilities are presented to show how total emissions vary by facility size and to characterize rates for facilities throughout the country.

3.1 GENERAL

In virtually all cases in the gasoline marketing chain, emissions of gasoline vapors are caused by the transfer of liquid gasoline from one container (or tank) to another. The liquid entering the fixed volume container displaces an equal volume of gasoline vapor/air mixture to the atmosphere. If the volume of vapor displaced from the container equals the volume of liquid loaded into the container, the ratio of vapor to liquid volume (V/L ratio) is equal to 1.

However, the volume of vapors displaced often does not equal the volume of liquid transferred. Temperature variations between the liquid loaded and the vapors in the tank can cause an expansion or contraction of the vapors causing the V/L ratio to vary from 1. When warm liquid enters a cool tank, the temperature in the tank increases thereby increasing the volume of vapors in the tank and increasing the volume of vapors displaced. This causes the volume of displaced vapors to be greater than the volume of

liquid loaded, resulting in a V/L ratio greater than 1. This is called vapor growth.

The opposite occurs when the liquid entering the fixed volume tank is cooler than the tank temperature. The cooler temperature reduces the vapor volume displaced and the V/L ratio is less than 1. This is called vapor shrinkage.

Vapor growth or vapor shrinkage can be a common occurrence when transferring liquids from service station underground tanks containing liquid of relatively stable temperature, insulated by the surrounding earth, into a vehicle fuel tank at extreme temperatures caused by over-road exposure to ambient conditions (fuel tanks very warm in summer, very cold in winter). Because vapor growth and vapor shrinkage occur so often, errors in emission estimates can easily be encountered by simply assuming the volume of vapors displaced equals the volume of liquid entering the tank. Testing of these emission sources requires accurate measurements of displaced volumes to calculate the mass of emissions released.

Because the amount of emissions that occur is tied so closely to the amount of liquid transferred into the tank or container, emission factors are often expressed in terms of mass emitted per volume of liquid loaded (i.e., pounds of VOC per 1,000 gallons of liquid loaded or milligrams of VOC per liter of liquid loaded).

Increased emphasis is being placed on the evaluation of the emissions of hazardous air pollutants (HAPs). The CAAA of 1990 specify 189 compounds that have been classified as HAPs. Several of these HAPs are typically found in gasoline vapors. Gasoline vapors are made up of a complex mixture of compounds originating from the evaporation of liquid gasoline.¹ Table 3-1 shows an example mixture of compounds found in displaced gasoline vapors. Several of these compounds correspond with compounds found on the list of 189

TABLE 3-1. EXAMPLE COMPOSITION OF GASOLINE VAPORS

Compound	Weight Percent
N-Propane	4.6
Isobutane	19.0
N-Butane	21.4
Isopentane	28.3
N-Pentane	5.3
2-2-Dimethyl Butane	0.6
2-3-Dimethyl Butane	1.0
2-Methyl Pentane	4.0
3-Methyl Pentane	2.3
N-Hexane	1.1
3-3-Dimethyl Pentane	1.1
3-Methyl Hexane	0.7
Methyl Cyclopentane	1.2
Cis-2-Pentene	0.6
Benzene	0.7
Toluene	1.0
Other ^a	<u>7.1</u>
	100

^a Other hydrocarbons with individual weight percent less than 0.5.

Source: Furey, Robert and Nagel, Bernard. Composition of Vapor Emitted From a Vehicle Gasoline Tank During Refueling. SAE Technical Paper Series #860086, February 1986.

HAPs listed in Title III of the CAAA. Table 3-2 summarizes the HAP compounds found in normal gasoline vapors and indicates the percent of total emissions, on a weight basis, that each HAP represents.² These HAP emission rates were calculated using liquid gasoline composition, Raoult's Law, and gasoline vapor analyses. These values may not compare exactly between Tables 3-1 and 3-2, since Table 3-1 is based on one experimental sample group and the normal fuel profile in Table 3-2 is based on a wide variety of samples.

The reformulated and oxygenated fuel requirements contained in Title II of the CAAA will affect the HAP content of gasoline. Also contained in Table 3.2 is an estimate of a vapor profile for a reformulated gasoline. Taken into account in this profile are the required reductions in benzene and total aromatic content, the addition of methyl tert butyl ether (MTBE) as an oxygenate, and the reduction of all other components due to the addition of a large volume of MTBE. HAP emissions from all Stage I gasoline marketing sources (pipelines, terminals, bulk plants, storage tanks, tank trucks, service station underground tank loading) are being evaluated for regulation under the National Emission Standards for Hazardous Air Pollutant (NESHAP) program.

An interesting point is with regard to MTBE. MTBE is a gasoline additive traditionally used in small amounts as an octane booster. However, with oxygenated fuel requirements contained in Title II of the 1990 Clean Air Amendments, the addition of MTBE in gasoline will be widespread. Approximately 15 weight percent MTBE in liquid gasoline is needed to meet the 2.7 weight percent oxygen requirement for carbon monoxide nonattainment areas, and 11 weight percent to meet the 2.0 weight percent oxygen requirements for the largest ozone nonattainment areas. This means that for gasolines containing MTBE, 15 percent or more of gasoline vapor could be made up of components listed by EPA as hazardous pollutants.

TABLE 3-2. GASOLINE HAZARDOUS AIR POLLUTANT VAPOR PROFILE

Hazardous Air Pollutant	HAP Content HAP/VOC wt percentage ratio	
	Arithmetic Average Normal Fuel	Estimated Reformulated Fuel
Hexane	1.6	1.4
Benzene	0.9	0.4
Toluene	1.3	1.1
2,2,4 Trimethylpentane (iso-octane)	0.8	0.7
Xylenes	0.5	0.4
Ethylbenzene	0.1	0.1
Naphthalene	0.5	0.0
Cumene	0.1	0.0
MTBE		8.7
TOTAL HAPS*	4.8	13

* Columns do not add to totals. Total HAPs as well as individual HAPs were calculated for each data point in the normal fuel analysis, and thus the totals are not simply sums of the individual components. Adjustments were made to this normal fuel based on the reformulated gasoline requirements to predict a reformulated profile.

Source: Preliminary Estimates from EPA Stage I NESHAP project on gasoline marketing.

**Ford Energy Center
Natural Gas Turbines
Emission Background Documents
(116-TRB-1, 116-TRB-2)**

Solar Turbines

A Caterpillar Company

Solar Turbines Incorporated

P.O. Box 85376
San Diego, CA 92186-5376
Tel: (619) 544-5000
Fax: (619) 544-2832

Greg Smith
GLHN
Tucson, AZ

FAX: 520.795.1822 (7 pages)

SUBJECT: University of New Mexico
Albuquerque, NM

Greg:

Here is performance, exhaust gas analysis and emissions for the Taurus 70S running on natural gas fuel for both ISO and Site Conditions at 59°F ambient.

Solar's emission guarantees at 15% O₂ dry, from 50-100% load, above 0°F ambient, are:

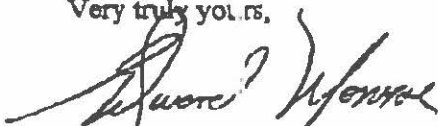
NO_x = 25 ppmv

CO = 50 ppmv

UHC = 25 ppmv

Please let me know if you need any additional information.

Very truly yours,



Edward Monnie
Solar Turbines Incorporated
Applications Engineering

SOLAR TURBINES INCORPORATED
 ENGINE PERFORMANCE CODE REV. 2.87
 CUSTOMER: UNIVERSITY OF NEW MEXICO
 JOB ID: HO1-1A1 *UVM/*

DATE RUN: 10-JUL-01
 RUN BY: Monroe, Edward

350

TAURUS 70-T10301S
 G3C
 STANDARD
 GAS
 T3D-1S REV. 1.0

DATA FOR NOMINAL PERFORMANCE

Fuel Type	SD NATURAL GAS	
Elevation	Feet	0
Inlet Loss	in. H2O	0
Exhaust Loss	in. H2O	0
Engine Inlet Temp.	Deg. F	59.0
Relative Humidity	%	60.0
Inlet Loss	kW	0
Exhaust Loss	kW	0
Specified Load	kW	FULL
Net Output Power	kW	7520
Fuel Flow	MMBtu/hr	75.94
Heat Rate	Btu/kW-hr	10098
Inlet Air Flow	lbm/hr	210637
Engine Exhaust Flow	lbm/hr	213837
PCD	psi (g)	233.1
PT Inlet Temp. (T ₃)	Deg. F	1357
Compensated PTIT	Deg. F	1400
Exhaust Temperature	Deg. F	906

ALAR TURBINES INCORPORATED
ENGINE PERFORMANCE CODE REV. 2.87
CUSTOMER: UNIVERSITY OF NEW MEXICO
ID: HO1-1A1 *U/M/*

DATE RUN: 10-JUL-01
RUN BY: Monroe, Edward

--- SUMMARY OF ENGINE EXHAUST ANALYSIS ---

GENERAL INPUT SPECIFICATIONS

ENGINE FUEL: SD NATURAL GAS
14.70 PSIA AMBIENT PRESSURE
60.0 PERCENT RELATIVE HUMIDITY
0.0064 --- SP. HUMIDITY (LBM H2O/LBM DRY AIR)

FUEL GAS COMPOSITION (VOLUME PERCENT)

LHV (Btu/SCF) = 919.2 SG = 0.5970 W.I. @60F = 1215.6

A = 0.0000 CH4 = 92.7899 C2H4 = 0.0000 C2H6 = 4.1600
C3H6 = 0.0000 C3H8 = 0.8400 C4 = 0.1800 C5 = 0.0400
C6 = 0.0400 C7 = 0.0000 C8 = 0.0000 CO = 0.0000
CO2 = 0.4400 H2 = 0.0000 H2O = 0.0000 H2S = 0.0001
N2 = 1.5100 O2 = 0.0000 SO2 = 0.0000 He = 0.0000

GENERAL OUTPUT DATA

3684. LBM/HR FUEL FLOW
20612. BTU/LBM LOWER HEATING VALUE
939. BTU/SCF LOWER HEATING VALUE
47465. SCFm EXHAUST FLOW @ 14.7 PSIA @ 60F
124765. ACFm ACTUAL EXHAUST FLOW CFM
213837. LBM/HR EXHAUST GAS FLOW
28.50 --- MOLECULAR WEIGHT OF EXHAUST GAS
57.18 --- AIR/FUEL RATIO

EXHAUST GAS ANALYSIS:

ARGON	CO2	H2O	N2	O2	
0.90	2.99	6.70	75.08	14.32	VOLUME PERCENT WET
0.96	3.21	0.00	80.47	15.35	VOLUME PERCENT DRY
2690.	9882.	9059.	157808.	34393.	LBM/HR
0.73	2.68	2.46	42.84	9.34	G/(G FUEL)

SOLAR TURBINES INCORPORATED
 ENGINE PERFORMANCE CODE REV. 2.87
 CUSTOMER: UNIVERSITY OF NEW MEXICO
 JOB ID: HO1-1A1 *U/M/1*

DATE RUN: 10-JUL-01
 RUN BY: Monroe, Edward

NEW EQUIPMENT PREDICTED EMISSION PERFORMANCE
 DATA FOR POINT NUMBER 1

Fuel: SD NATURAL GAS	Customer: UNIVERSITY OF NEW MEXICO
Water Injection: NO	Inquiry Number: HO1-1A1
Number of Engines Tested: 0	
Model: TAURUS 70-T10301S GSC	STANDARD GAS
Emissions Data: REV. 0.0	

CRITICAL WARNINGS IN USE OF DATA FOR PERMITTING

1. Short term permitting values such as PPMV or lbs/hr should be based on worst case actual operating conditions specific to the application and the site. Worst case for one pollutant is not necessarily the same for another. The values on this form are only predicted emissions at one specific operating condition; not necessarily the worst case.
2. Long term reference emission units (e.g. tons/yr) should reference the average conditions at the site (e.g. ISO). That number should not be derived from the worst case value referenced above, or conversely this average must not be used to calculate worst case.
3. Nominal values are based on actual test results, or predicted in the case of no actual engine tests. Expected maximum values should be referenced for permitting.

If a SoLoNOx model is planned to be installed in the future, use no less than 50 PPMV CO.

The following predicted emissions performance is based on the following specific single point: (see attached)

kW= 7520, %Full Load= 100.0, Elev= 0 ft, %RH= 60.0, Temperature= 59.0 F

NOX		CO		UHC		
NOM	MAX	NOM	MAX	NOM	MAX	
*	25.00	*	50.00	*	25.000	PPMvd at 15% O2
*	7.57	*	9.22	*	2.639	lbm/hr
*	33.15	*	40.37	*	11.560	ton/yr

* NOMINAL EMISSIONS DATA UNAVAILABLE FOR THIS ENGINE

OTHER IMPORTANT NOTES

1. Solar does not provide maximum values for water-to-fuel ratio, SOx, particulates, or conditions outside those above without separate written approval.
2. Solar can optionally provide factory testing in San Diego to ensure the actual unit(s) meet the above values within the tolerances quoted. Pricing and schedule impact will be provided upon request.
3. Fuel must meet Solar standard fuel specification ES 9-98. Predicted emissions are based on the attached fuel composition, or, San Diego natural gas or equivalent.
4. If the above information is being used regarding existing equipment, it should be verified by actual site testing.

OLAR TURBINES INCORPORATED
GINE PERFORMANCE CODE REV. 2.87
OMER: UNIVERSITY OF NEW MEXICO
JOB ID: HO1-1A1 *VNM 2*

DATE RUN: 10-JUL-01
RUN BY: Monroe, Edward

SITE CONDITIONS

TAURUS 70-T10301S
GSC
STANDARD
GAS
TSD-1S REV. 1.0

DATA FOR NOMINAL PERFORMANCE

Fuel Type	SD NATURAL GAS	
Elevation	Feet	5000
Inlet Loss	in. H2O	3.0
Exhaust Loss	in. H2O	8.0
Engine Inlet Temp.	Deg. F	59.0
Relative Humidity	%	60.0
Elevation Loss	kW	1336
Inlet Loss	kW	93
Exhaust Loss	kW	95
Specified Load	kW	FULL
Net Output Power	kW	6078
Fuel Flow	MMBtu/hr	62.65
Heat Rate	Btu/kW-hr	10307
Inlet Air Flow	lbm/hr	173539
Engine Exhaust Flow	lbm/hr	176179
PCD	psi (g)	192.0
PT Inlet Temp. (T _{in})	Deg. F	1357
Compensated PTIT	Deg. F	1400
Exhaust Temperature	Deg. F	916

SOLAR TURBINES INCORPORATED
 ENGINE PERFORMANCE CODE REV. 2.87
 CUSTOMER: UNIVERSITY OF NEW MEXICO
 ID: H01-1A1 *UNM2*

DATE RUN: 10-JUL-01
 RUN BY: Monroe, Edward

--- SUMMARY OF ENGINE EXHAUST ANALYSIS ---

GENERAL INPUT SPECIFICATIONS

ENGINE FUEL: SD NATURAL GAS
 12.23 PSIA AMBIENT PRESSURE
 60.0 PERCENT RELATIVE HUMIDITY
 0.0077 --- SP. HUMIDITY (LBM H2O/LBM DRY AIR)

FUEL GAS COMPOSITION (VOLUME PERCENT)

LHV (Btu/SCF) = 919.2 SG = 0.5970 W.I. @60F = 1215.6

A	=	0.0000	CH4	=	92.7899	C2H4	=	0.0000	C2H6	=	4.1600
C3H6	=	0.0000	C3H8	=	0.8400	C4	=	0.1800	C5	=	0.0400
C6	=	0.0400	C7	=	0.0000	C8	=	0.0000	CO	=	0.0000
CO2	=	0.4400	H2	=	0.0000	H2O	=	0.0000	H2S	=	0.0001
N2	=	1.5100	O2	=	0.0000	SO2	=	0.0000	He	=	0.0000

GENERAL OUTPUT DATA

3039.	LBM/HR	FUEL FLOW
20612.	BTU/LBM	LOWER HEATING VALUE
939.	BTU/SCF	LOWER HEATING VALUE
39136.	SCFm	EXHAUST FLOW @ 14.7 PSIA @ 60F
124514.	ACFm	ACTUAL EXHAUST FLOW CFM
176179.	LBM/HR	EXHAUST GAS FLOW
28.48	---	MOLECULAR WEIGHT OF EXHAUST GAS
57.10	---	AIR/FUEL RATIO

EXHAUST GAS ANALYSIS:

ARGON	CO2	H2O	N2	O2	
0.90	2.99	6.90	74.93	14.29	VOLUME PERCENT WET
0.96	3.21	0.00	80.48	15.35	VOLUME PERCENT DRY
2214.	8142.	7688.	129848.	28284.	LBM/HR
0.73	2.68	2.53	42.72	9.31	G/(G FUEL)

SOLAR TURBINES INCORPORATED
ENGINE PERFORMANCE CODE REV. 2.87
CUSTOMER: UNIVERSITY OF NEW MEXICO
ID: HO1-1A1 *UNM 2*

DATE RUN: 10-JUL-01
RUN BY: Monroe, Edward

NEW EQUIPMENT PREDICTED EMISSION PERFORMANCE
DATA FOR POINT NUMBER 1

Fuel: SD NATURAL GAS Customer: UNIVERSITY OF NEW MEXICO
Water Injection: NO Inquiry Number: HO1-1A1
Number of Engines Tested: 0
Model: TAUFJS 70-T10301S GSC STANDARD GAS
Emissions Data: REV. 0.0

CRITICAL WARNINGS IN USE OF DATA FOR PERMITTING

1. Short term permitting values such as PPMV or lbs/hr should be based on worst case actual operating conditions specific to the application and the site. Worst case for one pollutant is not necessarily the same for another. The values on this form are only predicted emissions at one specific operating condition; not necessarily the worst case.
2. Long term reference emission units (e.g. tons/yr) should reference the average conditions at the site (e.g. ISO). That number should not be derived from the worst case value referenced above, or conversely this average must not be used to calculate worst case.
3. Nominal values are based on actual test results, or predicted in the case of no actual engine tests. Expected maximum values should be referenced for permitting.
4. If a SoLoNOx model is planned to be installed in the future, use no less than 50 PPMV CO.

The following predicted emissions performance is based on the following specific single point: (see attached)

KW= 6078, %Full Load= 100.0, Elev= 5000 ft, %RH= 60.0, Temperature= 59.0 F

NOX		CO		UHC		
NOM	MAX	NOM	MAX	NOM	MAX	
*	25.00	*	50.00	*	25.000	PPMvd at 15% O2
*	6.24	*	7.59	*	2.175	lbm/hr
*	27.32	*	33.26	*	9.525	ton/yr

* NOMINAL EMISSIONS DATA UNAVAILABLE FOR THIS ENGINE

OTHER IMPORTANT NOTES

1. Solar does not provide maximum values for water-to-fuel ratio, SOx, particulates, or conditions outside those above without separate written approval.
2. Solar can optionally provide factory testing in San Diego to ensure the actual unit(s) meet the above values within the tolerances quoted. Pricing and schedule impact will be provided upon request.
3. Fuel must meet Solar standard fuel specification ES 9-98. Predicted emissions are based on the attached fuel composition, or, San Diego natural gas or equivalent.
4. If the above information is being used regarding existing equipment, it should be verified by actual site testing.

3.1 Stationary Gas Turbines

3.1.1 General¹

Gas turbines, also called “combustion turbines”, are used in a broad scope of applications including electric power generation, cogeneration, natural gas transmission, and various process applications. Gas turbines are available with power outputs ranging in size from 300 horsepower (hp) to over 268,000 hp, with an average size of 40,200 hp.² The primary fuels used in gas turbines are natural gas and distillate (No. 2) fuel oil.³

3.1.2 Process Description^{1,2}

A gas turbine is an internal combustion engine that operates with rotary rather than reciprocating motion. Gas turbines are essentially composed of three major components: compressor, combustor, and power turbine. In the compressor section, ambient air is drawn in and compressed up to 30 times ambient pressure and directed to the combustor section where fuel is introduced, ignited, and burned. Combustors can either be annular, can-annular, or silo. An annular combustor is a doughnut-shaped, single, continuous chamber that encircles the turbine in a plane perpendicular to the air flow. Can-annular combustors are similar to the annular; however, they incorporate several can-shaped combustion chambers rather than a single continuous chamber. Annular and can-annular combustors are based on aircraft turbine technology and are typically used for smaller scale applications. A silo (frame-type) combustor has one or more combustion chambers mounted external to the gas turbine body. Silo combustors are typically larger than annular or can-annular combustors and are used for larger scale applications.

The combustion process in a gas turbine can be classified as diffusion flame combustion, or lean-premix staged combustion. In the diffusion flame combustion, the fuel/air mixing and combustion take place simultaneously in the primary combustion zone. This generates regions of near-stoichiometric fuel/air mixtures where the temperatures are very high. For lean-premix combustors, fuel and air are thoroughly mixed in an initial stage resulting in a uniform, lean, unburned fuel/air mixture which is delivered to a secondary stage where the combustion reaction takes place. Manufacturers use different types of fuel/air staging, including fuel staging, air staging, or both; however, the same staged, lean-premix principle is applied. Gas turbines using staged combustion are also referred to as Dry Low NO_x combustors. The majority of gas turbines currently manufactured are lean-premix staged combustion turbines.

Hot gases from the combustion section are diluted with additional air from the compressor section and directed to the power turbine section at temperatures up to 2600°F. Energy from the hot exhaust gases, which expand in the power turbine section, are recovered in the form of shaft horsepower. More than 50 percent of the shaft horsepower is needed to drive the internal compressor and the balance of recovered shaft horsepower is available to drive an external load.² Gas turbines may have one, two, or three shafts to transmit power between the inlet air compression turbine, the power turbine, and the exhaust turbine. The heat content of the exhaust gases exiting the turbine can either be discarded without heat recovery (simple cycle); recovered with a heat exchanger to preheat combustion air entering the combustor (regenerative cycle); recovered in a heat recovery steam generator to raise process steam, with or without supplementary firing (cogeneration); or recovered, with or without supplementary firing, to raise steam for a steam turbine Rankine cycle (combined cycle or repowering).

Table 3.1-2a. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM STATIONARY GAS TURBINES

Emission Factors ^a - Uncontrolled				
Pollutant	Natural Gas-Fired Turbines ^b		Distillate Oil-Fired Turbines ^d	
	(lb/MMBtu) ^c (Fuel Input)	Emission Factor Rating	(lb/MMBtu) ^e (Fuel Input)	Emission Factor Rating
CO ₂ ^f	110	A	157	A
N ₂ O	0.003 ^g	E	ND	NA
Lead	ND	NA	1.4 E-05	C
SO ₂	0.94S ^h	B	1.01S ^h	B
Methane	8.6 E-03	C	ND	NA
VOC	2.1 E-03	D	4.1 E-04 ^j	E
TOC ^k	1.1 E-02	B	4.0 E-03 ^l	C
PM (condensable)	4.7 E-03 ^l	C	7.2 E-03 ^l	C
PM (filterable)	1.9 E-03 ^l	C	4.3 E-03 ^l	C
PM (total)	6.6 E-03 ^l	C	1.2 E-02 ^l	C

^a Factors are derived from units operating at high loads (≥ 80 percent load) only. For information on units operating at other loads, consult the background report for this chapter (Reference 16), available at "www.epa.gov/ttn/chieft". ND = No Data, NA = Not Applicable.

^b SCCs for natural gas-fired turbines include 2-01-002-01, 2-02-002-01 & 03, and 2-03-002-02 & 03.

^c Emission factors based on an average natural gas heating value (HHV) of 1020 Btu/scf at 60°F. To convert from (lb/MMBtu) to (lb/10⁶ scf), multiply by 1020. Similarly, these emission factors can be converted to other natural gas heating values.

^d SCCs for distillate oil-fired turbines are 2-01-001-01, 2-02-001-01, 2-02-001-03, and 2-03-001-02.

^e Emission factors based on an average distillate oil heating value of 139 MMBtu/10³ gallons. To convert from (lb/MMBtu) to (lb/10³ gallons), multiply by 139.

^f Based on 99.5% conversion of fuel carbon to CO₂ for natural gas and 99% conversion of fuel carbon to CO₂ for distillate oil. CO₂ (Natural Gas) [lb/MMBtu] = (0.0036 scf/Btu)(%CON)(C)(D), where %CON = weight percent conversion of fuel carbon to CO₂, C = carbon content of fuel by weight, and D = density of fuel. For natural gas, C is assumed at 75%, and D is assumed at 4.1 E+04 lb/10⁶scf. For distillate oil, CO₂ (Distillate Oil) [lb/MMBtu] = (26.4 gal/MMBtu) (%CON)(C)(D), where C is assumed at 87%, and the D is assumed at 6.9 lb/gallon.

^g Emission factor is carried over from the previous revision to AP-42 (Supplement B, October 1996) and is based on limited source tests on a single turbine with water-steam injection (Reference 5).

^h All sulfur in the fuel is assumed to be converted to SO₂. S = percent sulfur in fuel. Example, if sulfur content in the fuel is 3.4 percent, then S = 3.4. If S is not available, use 3.4 E-03 lb/MMBtu for natural gas turbines, and 3.3 E-02 lb/MMBtu for distillate oil turbines (the equations are more accurate).

^j VOC emissions are assumed equal to the sum of organic emissions.

^k Pollutant referenced as THC in the gathered emission tests. It is assumed as TOC, because it is based on EPA Test Method 25A.

^l Emission factors are based on combustion turbines using water-steam injection.

**Ford Energy Center
Natural Gas Turbines
Emission Background Documents**

(116-TRB-1, 116-TRB-2)

UNM - Ford Utilities Center

Summary of Test Data

Description: English Boilers - Two 96,200,000 Btu/hr English boilers (Units 1 & 2)

Unit	Pollutant Avg.	
	CO	
	lb/hr	tpy
1	0.11	0.49
2	1.37	5.99
1	2.36	10.33
2	2.38	10.42
1	0.04	0.20
2	1.29	5.66
1	0.38	1.68
2	0.87	3.81
1 -MAX	2.36	10.33
2-MAX	2.38	10.42
Unit 1 Safety Factor	107%	107%
Unit 2 Safety Factor	105%	105%
1	4.9	21.4
2	4.9	21.4

Proposed Emission Limits
Proposed Emission Limits

DRAFT

**Steam Plant
Natural Gas Boilers
Emission Background Documents
(176-BLR-1, 176-BLR-2, 176-BLR-3)**



PROFESSIONAL PRACTICE
SINCE 1963

DAVID C. GRIGSBY, AIA
ROGER B. HARWELL, PE
HENRY W. JOHNSTONE, PE
JOHN C. MCGANN, PE
THEODORE C. MOELLER, PE
WILLIAM I. NELSON, PE

April 14, 2011

UNIVERSITY OF NEW MEXICO
Physical Plant Department
Engineering & Energy Services Division
MSC07 4200
1 University of New Mexico
Albuquerque, New Mexico 87131-0001

Attention: Maria Probasco

Reference: University of New Mexico Emissions Reduction Project
GLHN Job No. 0940.00

Subject: De-rating Miura Boilers for Site Elevation

Maria,

As detailed in the attached letter from Miura North America Inc., the boilers installed on the University of New Mexico under the Emissions Reduction Project must be de-rated for elevation. Since the efficiency of the unit is not affected, this de-rating procedure pertains to both fuel input and heat output.

Each boiler is nominally rated for 12.4 MMBTU/hr of power input at sea level. As the attached letter indicates, units above 2,000 ft must be de-rated by 4% for every 1,000 feet above sea level. Thus the actual power input of the installed boilers at 5,200 ft elevation would be as follows:

De-rating Factor: $4\% * (5200/1000) = 20.8\%$,

Adjusted Power Input: $12.4 \text{ MMBTU/hr} * (1 - 0.208) = 9.82 \text{ MMBTU/hr}$

Sincerely,

GLHN Architects & Engineers, Inc.

Henry Johnstone, P.E.
Principal/Director of Mechanical Engineering
hjohnsto@glhn.com

HWJ:JZ:cfm

Attachments

2939 E. Broadway Blvd. Tucson, Arizona 85716-5311 www.glhn.com 520.881.4546 / Fax 520.795.1822

ARCHITECTURE / CIVIL, ELECTRICAL, AND MECHANICAL ENGINEERING / ENERGY MANAGEMENT
MEMBERS: AMERICAN INSTITUTE OF ARCHITECTS / CSI / ASHRAE / NSPE / ASCE / LES



March 11, 2011

Arizona Engineered Products
6735 North 8th Street
Phoenix, AZ 85014

Re: University of New Mexico Emmission Reduction Project

Attn: Thomas Baird:

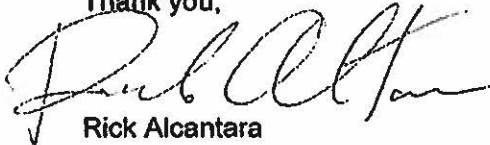
Per our conversation it is acceptable to Miura North America Inc., for University of New Mexico (UNM) to de-rate the safety relief valves on all 3-LX300SG steam boilers from 150psi rating to 100psi rating as long as the boilers operate at 70psi or higher (steam valve discharge capacity to be confirmed by others on the field).

The 3-LX 300SG steam boilers that were purchased for UNM have a rated heat output of 10,050,000btu/hr equivalent output of 10,350 lb/hr rated at sea level.

All Miura Boiler ratings are based on operation at sea level. For operations at elevations above 2,000 Feet (600 m), ratings must be reduced at a 4% per 1,000 feet (300 m) above seal level.

The sizing of the boilers for UNM to be done by others to confirm actual load demand required

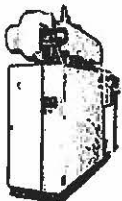
Thank you,



Rick Alcantara



Thank you, Sales Representative
Direct: (626)386-1556
Fax: (626)305-6624
Cell: (626)372-2635
Email: rick.alcantara@miuraboller.com



MIURA NORTH AMERICA INC
1945 South Myrtle Ave.
Monrovia, CA 91016-4854
E-mail: LA@miuraboller.com
Tel: (626) 305-6822 Fax: (626) 305-6624
Visit our homepage www.miuraboller.com

Engineered For Greater Efficiency, Lower Costs.



日本語 Representative Login Partner Login

search...

Search

Home About Miura Products Features Efficiency Brochures Media Center Representatives Contact Miura

Miura Steam is Engineered for Greater Efficiency, Lower Costs, & Reduced Environmental Impact

Top Products

- Steam Boilers
- Hot-Water Boilers
- BOILERMATE(R) Water Treatment
- MW
- MI System (for modular installations)
- Colormetry
- BL Mikro Controller
- Ancillaries

Top Features

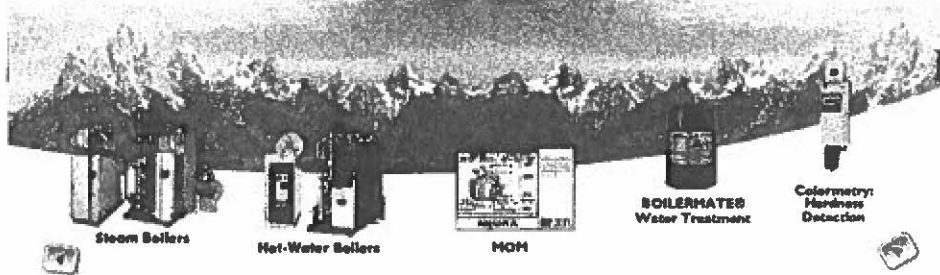
- MOM
- Maintenance Contract
- Green Technology
- Fuel Savings
- Space Saving Design
- Warranty

Efficiency

- In-Service Efficiency
- In-Service Efficiency Study
- Combustion Efficiency
- Fuel-to-Steam Efficiency

Calendar

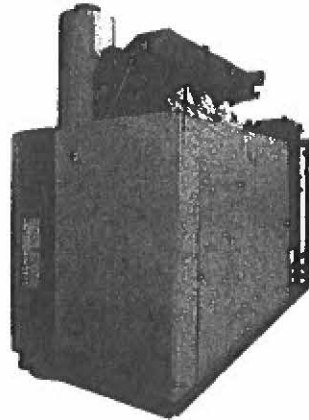
- Public Calendar
- Miura Calendar Login



LX-300 SG



LX-300 Zero-Side-Clearance Steam Boiler Packs All the Horsepower You Need in 1/4 the Space



Small footprint design offers high-efficiency, On-Demand Steam Saving money, space, and start-up time

Modular design allows flexibility to customize your steam plant to meet any demand and load profile optimized for superior energy management
Zero-side-clearance design reduces boiler room size and cuts construction costs

- Achieves 87% efficiency using Miura's built-in energy recovery & water treatment systems
- Steam production from cold start in 5 minutes
- Saves up to 20% on fuel costs & CO2 emissions on average
- New design innovations optimize combustion for consistent low NOx emissions
- Ultra Low NOx Model Now Available (9 ppm)

MIURA's exclusive "low water content, water tube" design is the most versatile boiler available in the marketplace today. A once-through, forced circulation steam boiler producing steam in just 5 minutes while maintains an 85% fuel-to-steam efficiency.

Specifications Dimensions and Schematic Note

Specifications	
LX-300 SG	
Utilization Horsepower	300HP
Maximum Pressure	170 psig MAWP
Equivalent Output	10,350 LB/HR
Heat Output	10,050,000 BTU/HR
Efficiency (fuel to steam)	87%
Heating Surface Area	574 FT ²
Operational Weight	10,940 LBS
Shipping Weight	9,800 LBS
Dimensions Given are Approximate	
Width	63 in.
Length	153 1/2 in.
Height	127 in.
Combustion System	Proprietary Forced Draft, Step Fired Modulation Hi-Low-Off

LX Series

- LX(L)-50SG
- LX(L)-100SG
- LX-150SG
- LX(L)-200SG
- LX-300SG

More Images

- [LX Dimensions](#)
- [LX Schematic](#)
- [Space Comparison 1](#)
- [Space Comparison 2](#)

View CAD Drawings

- [Boiler Ass'y Outside View \(CAD\) 12/9](#)
- [Boiler System Diagram \(CAD\) 12/9](#)
- [Orientation of In & Outlet \(CAD\) 12/9](#)
- [Boiler Ass'y Outside View \(CAD\) 11/24](#)
- [Boiler System Diagram \(CAD\) 11/24](#)
- [Orientation of In & Outlet \(CAD\) 11/24](#)
- [Orientation of In & Outlet \(CAD\) 11/22](#)

Downloads

- [Boiler Ass'y Outside View 12/9](#)
- [Boiler System Diagram 12/9](#)
- [Orientation of In & Outlet 12/9](#)
- [Boiler Ass'y Outside View 11/24](#)
- [Boiler System Diagram 11/24](#)
- [Orientation of In & Outlet 11/22](#)

Ignition System	4 Position Step Burner (Hi-Low-Ignition-Off)
Power Supply	208, 230, 460, 575V, 3 phase, 60Hz
Max. Electrical Consumption	35.2 KVA
Fuel Type	Natural Gas or Propane (3-5 PSIG)
Gas Consumption	11,500 SCFH
Gas Supply Pressure	3-5 PSIG Natural Gas or Propane
Main Steam Outlet Valve	4 in.
Safety Valve Outlet	One 1/2 in.
Main Water Inlet	1 1/4 in.
Fuel Gas Inlet	2 1/2 in.
Automatic Surface Blowdown	3/8 in.
Manual Blowdown	One 1 in. & One 1 1/4 in.
Chimney Diameter (ID)	20 in.
Flame Detector	Ultraviolet Flame Eye Sensor
Pressure Control	Adjustable Pressure Transducer and Switch
Liquid Volume Control	Electric Conductivity Type
Overheat Protection	Low Water Cut Off & Thermocouple

[Back]

[Sitemap](#) © 2011 Miura North America Inc.

MIURA

March 11, 2011

Arizona Engineered Products
6735 North 8th Street
Phoenix, AZ 85014

Re: University of New Mexico Emission Reduction Project

Attn: Thomas Baird

Per our conversation it is acceptable to Miura North America Inc., for University of New Mexico (UNM) to de-rate the safety relief valves on all 3-LX300SG steam boilers from 150psi rating to 100psi rating as long as the boilers operate at 70psi or higher (steam valve discharge capacity to be confirmed by others on the field).

The 3-LX 300SG steam boilers that were purchased for UNM have a rated heat output of 10,050,000btu/hr equivalent output of 10,350 lb/hr rated at sea level.

All Miura Boiler ratings are based on operation at sea level. For operations at elevations above 2,000 Feet (600 m), ratings must be reduced at a 4% per 1,000 feet (300 m) above seal level.

The sizing of the boilers for UNM to be done by others to confirm actual load demand required

Thank you,



Rick Alcantara

MIURA

Thank you, Sales Representative
Direct: (626)386-1556
Fax: (626)305-6624
Cell: (626)372-2635
Email: rick.alcantara@miuraboiler.com



MIURA NORTH AMERICA INC
1945 South Myrtle Ave.
Monrovia, CA 91016-4854
E-mail: LA@miuraboiler.com
Tel: (626) 305-6622 Fax: (626) 305-6624
Visit our homepage www.miuraboiler.com

Engineered For Greater Efficiency, Lower Costs.

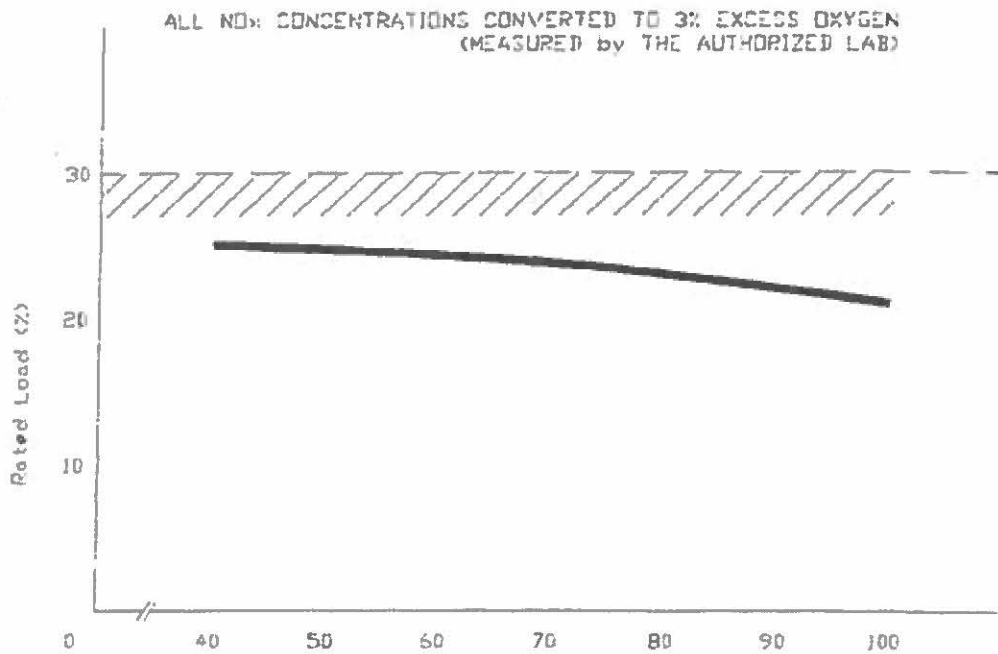
SECTION ONE - INTRODUCTION

1.1 - FEATURES

The MIURA BOILER is a low water content, water tube design, which provides full output within 5 minutes. In addition, it is a compact, safe, cost saving boiler. Such features contribute to the success of the Miura boiler obtaining more than 50% of the market share in Japan, Korea and Taiwan.

Miura Boiler Co., Ltd. developed the new Low NO_x Boiler by using the most advanced technical methods. The flat shaped burner and the rectangular shaped boiler vessel are uniquely designed for the LX.

It is known that the temperature of the combustion flame should be less than 1800°C (3272°F) to prevent NO_x generation. Generally, the combustion flame will have some high temperature areas generating NO_x. Miura engineers have calculated the temperature distribution in the combustion and heat exchanging areas. From theoretical analysis and rigorous testing the designed temperature distribution is homogeneously less than 1,800°C (3,272°F). The burner surface is made as large as possible and the furnace volume as small as possible, to optimize the combustion process. As a result, the LX has NO_x emissions of less than 30 PPM at 3% converted O₂ (see Fig. 1). Miura's emissions meet and exceed all current and proposed North American NO_x regulations.



Rated Load (%)
NO_x TEST DATA
Figure 1

≤ 20 PPM NO_x

≤ 100 PPM CO

1.4 Natural Gas Combustion

1.4.1 General¹⁻²

Natural gas is one of the major combustion fuels used throughout the country. It is mainly used to generate industrial and utility electric power, produce industrial process steam and heat, and heat residential and commercial space. Natural gas consists of a high percentage of methane (generally above 85 percent) and varying amounts of ethane, propane, butane, and inerts (typically nitrogen, carbon dioxide, and helium). The average gross heating value of natural gas is approximately 1,020 British thermal units per standard cubic foot (Btu/scf), usually varying from 950 to 1,050 Btu/scf.

1.4.2 Firing Practices³⁻⁵

There are three major types of boilers used for natural gas combustion in commercial, industrial, and utility applications: watertube, firetube, and cast iron. Watertube boilers are designed to pass water through the inside of heat transfer tubes while the outside of the tubes is heated by direct contact with the hot combustion gases and through radiant heat transfer. The watertube design is the most common in utility and large industrial boilers. Watertube boilers are used for a variety of applications, ranging from providing large amounts of process steam, to providing hot water or steam for space heating, to generating high-temperature, high-pressure steam for producing electricity. Furthermore, watertube boilers can be distinguished either as field erected units or packaged units.

Field erected boilers are boilers that are constructed on site and comprise the larger sized watertube boilers. Generally, boilers with heat input levels greater than 100 MMBtu/hr, are field erected. Field erected units usually have multiple burners and, given the customized nature of their construction, also have greater operational flexibility and NO_x control options. Field erected units can also be further categorized as wall-fired or tangential-fired. Wall-fired units are characterized by multiple individual burners located on a single wall or on opposing walls of the furnace while tangential units have several rows of air and fuel nozzles located in each of the four corners of the boiler.

Package units are constructed off-site and shipped to the location where they are needed. While the heat input levels of packaged units may range up to 250 MMBtu/hr, the physical size of these units are constrained by shipping considerations and generally have heat input levels less than 100 MMBtu/hr. Packaged units are always wall-fired units with one or more individual burners. Given the size limitations imposed on packaged boilers, they have limited operational flexibility and cannot feasibly incorporate some NO_x control options.

Firetube boilers are designed such that the hot combustion gases flow through tubes, which heat the water circulating outside of the tubes. These boilers are used primarily for space heating systems, industrial process steam, and portable power boilers. Firetube boilers are almost exclusively packaged units. The two major types of firetube units are Scotch Marine boilers and the older firebox boilers. In cast iron boilers, as in firetube boilers, the hot gases are contained inside the tubes and the water being heated circulates outside the tubes. However, the units are constructed of cast iron rather than steel. Virtually all cast iron boilers are constructed as package boilers. These boilers are used to produce either low-pressure steam or hot water, and are most commonly used in small commercial applications.

Natural gas is also combusted in residential boilers and furnaces. Residential boilers and furnaces generally resemble firetube boilers with flue gas traveling through several channels or tubes with water or air circulated outside the channels or tubes.

1.4.3 Emissions³⁻⁴

Table 1.4-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO)
FROM NATURAL GAS COMBUSTION^a

Combustor Type (MMBtu/hr Heat Input) [SCC]	NO _x ^b		CO	
	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
Large Wall-Fired Boilers (>100) [1-01-006-01, 1-02-006-01, 1-03-006-01]				
Uncontrolled (Pre-NSPS) ^c	280	A	84	B
Uncontrolled (Post-NSPS) ^c	190	A	84	B
Controlled - Low NO _x burners	140	A	84	B
Controlled - Flue gas recirculation	100	D	84	B
Small Boilers (<100) [1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03]				
Uncontrolled	100	B	84	B
Controlled - Low NO _x burners	50	D	84	B
Controlled - Low NO _x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [1-01-006-04]				
Uncontrolled	170	A	24	C
Controlled - Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3) [No SCC]				
Uncontrolled	94	B	40	B

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

^b Expressed as NO₂. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

^c NSPS=New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17, 1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984.

TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION^a

Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
CO ₂ ^b	120,000	A
Lead	0.0005	D
N ₂ O (Uncontrolled)	2.2	E
N ₂ O (Controlled-low-NO _x burner)	0.64	E
PM (Total) ^c	7.6	D
PM (Condensable) ^c	5.7	D
PM (Filterable) ^c	1.9	B
SO ₂ ^d	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds.

VOC = Volatile Organic Compounds.

^b Based on approximately 100% conversion of fuel carbon to CO₂. $CO_2[\text{lb}/10^6 \text{ scf}] = (3.67) (\text{CON}) (\text{C})(\text{D})$, where CON = fractional conversion of fuel carbon to CO₂, C = carbon content of fuel by weight (0.76), and D = density of fuel, 4.2x10⁴ lb/10⁶ scf.

^c All PM (total, condensable, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM₁₀, PM_{2.5} or PM₁ emissions. Total PM is the sum of the filterable PM and condensable PM. Condensable PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

^d Based on 100% conversion of fuel sulfur to SO₂.

Assumes sulfur content is natural gas of 2,000 grains/10⁶ scf. The SO₂ emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO₂ emission factor by the ratio of the site-specific sulfur content (grains/10⁶ scf) to 2,000 grains/10⁶ scf.

**Animal Research Facility
Natural Gas Crematorium
Emission Background Documents**

(262-CRM-1)

EQUIPMENT SPECIFICATION
MODEL No. CA-300-P PATHOLOGICAL UNIT

Side 211
 Basic metal
 50 pounds

Number
 2-300P-02-2B
 (2-05-2B)

RATED CAPACITY:

TYPE "0"	200	LBS./HR.
TYPE "1"	300	LBS./HR.
TYPE "2"	375	LBS./HR.
TYPE "3"		LBS./HR.
TYPE "4"	200-240	LBS./HR.
OTHER	CONTACT FACTORY	
MAXIMUM CHARGE	3	CU. YD.

AUX. BURNERS: (GAS OR OIL)

PRIMARY CHAMBER:
 2--ADJUSTABLE TO 800,000 BTU/HR.
 AFTERBURNER:
 1--ADJUSTABLE TO 1.2 MM BTU/HR.

BASIC DIMENSIONS

PRIMARY CHAMBER:

OUTSIDE DIAMETER	68"
SHELL THICKNESS	3/4"
INSULATION (1900°)	2"
REFRACTORY (2600°)	4"
INSIDE DIAMETER	56"
CHAMBER LENGTH	76"
CHAMBER VOLUME	107 FT. ³
HEARTH AREA	30.9 FT. ²

EXHAUST STACK:

OUTSIDE DIAMETER	26"
CASING GAUGE	12
REFRACTORY (2600°)	3"
INSIDE DIAMETER	20"
SECTION LENGTH	6'0"
NO. OF SECTIONS	3
TOTAL HEIGHT FROM SLAB	26'-5 1/2'
TOTAL STACK WEIGHT	3800 LBS.

UTILITY REQUIREMENTS

ELECTRICAL SERVICE:

110 VOLTS 3 WIRE 1 PHASE
 20 AMP 1 HP 60 HZ.

FUEL:

NATURAL GAS #2 OIL
 MAX. FIRING.....2800 CFH 10 GPH
 AVERAGE W/TEMP.
 CONTROL ON
 AFTERBURNER.....1400 CFH 9 GPH

WEIGHTS:

BASIC UNIT	14,000	LBS.
STACK	3,800	LBS.
TOTAL	17,800	LBS.

Post-Its Fax Note	7671	Date	11/30	# of pages	1
To	Safety	From	W. Malone		
Co./Dept.		Co.	ARF - MED 9.		
Phone #		Phone #	7-3936		
Fax #	7-7006	Fax #	7-0129		

Reference Drawing B-1858

Reagan 767-5625

2185 E. Baker View Road

**Unpaved Parking Lots
Emission Background Documents
(XXX-DL-X)**

13.2.2 Unpaved Roads

13.2.2.1 General

Dust plumes trailing behind vehicles traveling on unpaved roads are a familiar sight in rural areas of the United States. When a vehicle travels an unpaved road, the force of the wheels on the road surface causes pulverization of surface material. Particles are lifted and dropped from the rolling wheels, and the road surface is exposed to strong air currents in turbulent shear with the surface. The turbulent wake behind the vehicle continues to act on the road surface after the vehicle has passed.

13.2.2.2 Emissions Calculation And Correction Parameters

The quantity of dust emissions from a given segment of unpaved road varies linearly with the volume of traffic. Field investigations also have shown that emissions depend on correction parameters (average vehicle speed, average vehicle weight, average number of wheels per vehicle, road surface texture, and road surface moisture) that characterize the condition of a particular road and the associated vehicle traffic.¹⁻⁴

Dust emissions from unpaved roads have been found to vary in direct proportion to the fraction of silt (particles smaller than 75 micrometers [μm] in diameter) in the road surface materials.¹ The silt fraction is determined by measuring the proportion of loose dry surface dust that passes a 200-mesh screen, using the ASTM-C-136 method. Table 13.2.2-1 summarizes measured silt values for industrial and rural unpaved roads.

Since the silt content of a rural dirt road will vary with location, it should be measured for use in projecting emissions. As a conservative approximation, the silt content of the parent soil in the area can be used. Tests, however, show that road silt content is normally lower than in the surrounding parent soil, because the fines are continually removed by the vehicle traffic, leaving a higher percentage of coarse particles.

Unpaved roads have a hard, generally nonporous surface that usually dries quickly after a rainfall. The temporary reduction in emissions caused by precipitation may be accounted for by not considering emissions on "wet" days (more than 0.254 millimeters [mm] [0.01 inches (in.)] of precipitation).

The following empirical expression may be used to estimate the quantity of size-specific particulate emissions from an unpaved road, per vehicle kilometer traveled (VKT) or vehicle mile traveled (VMT):

$$E = k(1.7) \left[\frac{s}{12} \right] \left[\frac{S}{48} \right] \left[\frac{W}{2.7} \right]^{0.7} \left[\frac{w}{4} \right]^{0.5} \left[\frac{365-p}{365} \right] \quad (\text{kilograms [kg]/VKT}) \quad (1)$$

$$E = k(5.9) \left[\frac{s}{12} \right] \left[\frac{S}{30} \right] \left[\frac{W}{3} \right]^{0.7} \left[\frac{w}{4} \right]^{0.5} \left[\frac{365-p}{365} \right] \quad (\text{pounds [lb]/VMT})$$

Table 13.2.2-1. TYPICAL SILT CONTENT VALUES OF SURFACE MATERIAL ON INDUSTRIAL AND RURAL UNPAVED ROADS^a

Industry	Road Use Or Surface Material	Plant Sites	No. Of Samples	Silt Content (%)	
				Range	Mean
Copper smelting	Plant road	1	3	16 - 19	17
Iron and steel production	Plant road	19	135	0.2 - 19	6.0
Sand and gravel processing	Plant road	1	3	4.1 - 6.0	4.8
Stone quarrying and processing	Plant road	2	10	2.4 - 16	10
	Haul road	1	10	5.0 - 15	9.6
Taconite mining and processing	Service road	1	8	2.4 - 7.1	4.3
	Haul road	1	12	3.9 - 9.7	5.8
Western surface coal mining	Haul road	3	21	2.8 - 18	8.4
	Access road	2	2	4.9 - 5.3	5.1
	Scraper route	3	10	7.2 - 25	17
	Haul road (freshly graded)	2	5	18 - 29	24
Rural roads	Gravel/crushed limestone	3	9	5.0 - 13	8.9
	Dirt	7	32	1.6 - 68	12
Municipal roads	Unspecified	3	26	0.4 - 13	5.7
Municipal solid waste landfills	Disposal routes	4	20	2.2 - 21	6.4

^a References 1,5-16.

where:

- E = emission factor
- k = particle size multiplier (dimensionless)
- s = silt content of road surface material (%)
- S = mean vehicle speed, kilometers per hour (km/hr) (miles per hour [mph])
- W = mean vehicle weight, megagrams (Mg) (ton)
- w = mean number of wheels
- p = number of days with at least 0.254 mm (0.01 in.) of precipitation per year (see discussion below about the effect of precipitation.)

The particle size multiplier in the equation, k , varies with aerodynamic particle size range as follows:

Aerodynamic Particle Size Multiplier (k) For Equation 1					
$\leq 30 \mu\text{m}^a$	$\leq 30 \mu\text{m}$	$\leq 15 \mu\text{m}$	$\leq 10 \mu\text{m}$	$\leq 5 \mu\text{m}$	$\leq 2.5 \mu\text{m}$
1.0	0.80	0.50	0.36	0.20	0.095

^a Stokes diameter.

The number of wet days per year, p , for the geographical area of interest should be determined from local climatic data. Figure 13.2.2-1 gives the geographical distribution of the mean annual number of wet days per year in the United States.¹⁷ The equation is rated "A" for dry conditions ($p = 0$) and "B" for annual or seasonal conditions ($p > 0$). The lower rating is applied because extrapolation to seasonal or annual conditions assumes that emissions occur at the estimated rate on days without measurable precipitation and, conversely, are absent on days with measurable precipitation. Clearly, natural mitigation depends not only on how much precipitation falls, but also on other factors affecting the evaporation rate, such as ambient air temperature, wind speed, and humidity. Persons in dry, arid portions of the country may wish to base p (the number of wet days) on a greater amount of precipitation than 0.254 mm (0.01 in.). In addition, Reference 18 contains procedures to estimate the emission reduction achieved by the application of water to an unpaved road surface.

The equation retains the assigned quality rating, if applied within the ranges of source conditions that were tested in developing the equation, as follows:

Ranges Of Source Conditions For Equation					
Road Silt Content (wt %)	Mean Vehicle Weight		Mean Vehicle Speed		Mean No. Of Wheels
	Mg	ton	km/hr	mph	
4.3 - 20	2.7 - 142	3 - 157	21 - 64	13 - 40	4 - 13

Moreover, to retain the quality rating of the equation when addressing a specific unpaved road, it is necessary that reliable correction parameter values be determined for the road in question. The field and laboratory procedures for determining road surface silt content are given in AP-42 Appendices C.1 and C.2. In the event that site-specific values for correction parameters cannot be obtained, the appropriate mean values from Table 13.2.2-1 may be used, but the quality rating of the equation is reduced by 1 letter.

For calculating annual average emissions, the equation is to be multiplied by annual vehicle distance traveled (VDT). Annual average values for each of the correction parameters are to be substituted for the equation. Worst-case emissions, corresponding to dry road conditions, may be calculated by setting $p = 0$ in the equation (equivalent to dropping the last term from the equation). A separate set of nonclimatic correction parameters and a higher than normal VDT value may also be justified for the worst-case average period (usually 24 hours). Similarly, in using the equation to

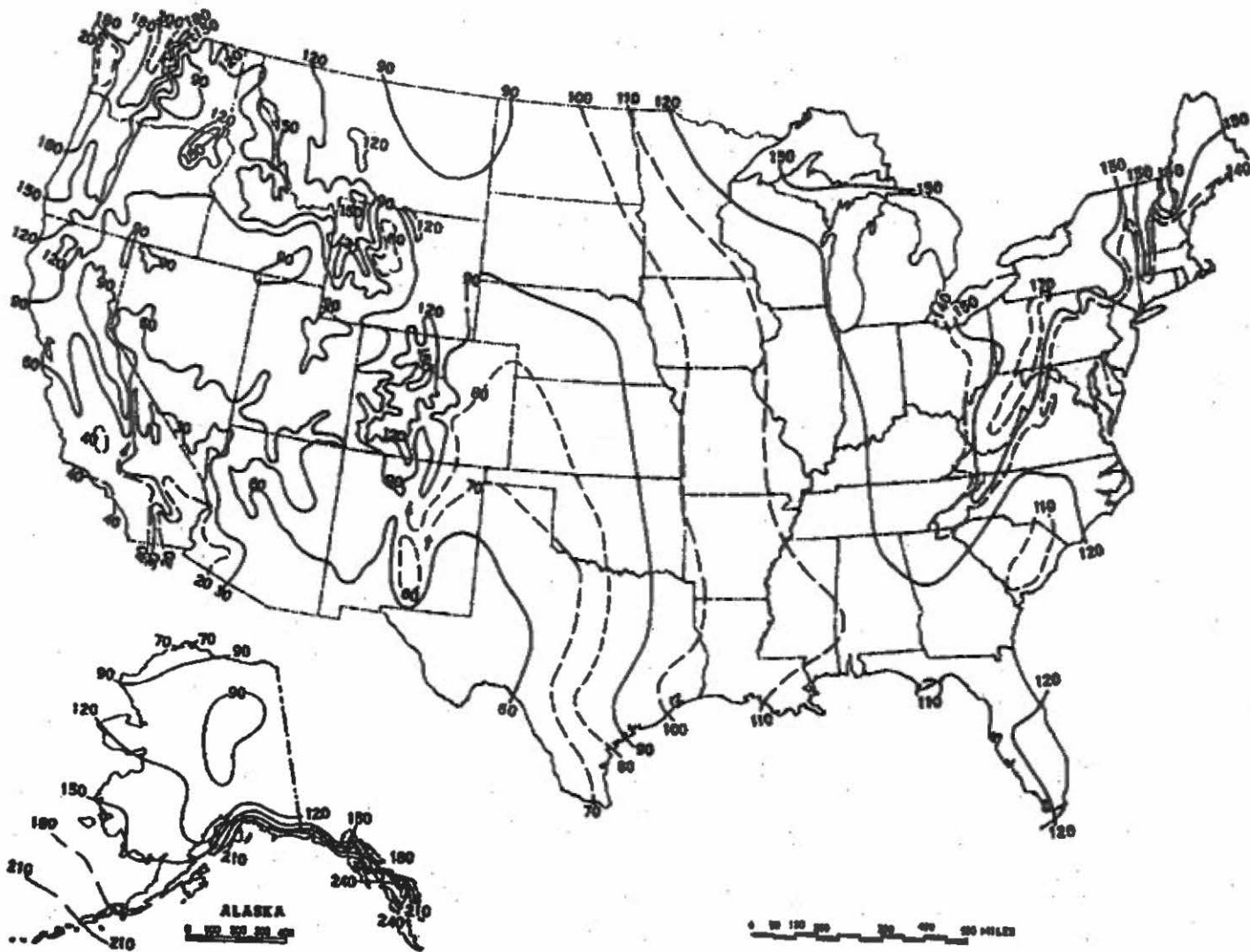


Figure 13.2.2-1. Mean number of days with 0.01 inch or more of precipitation in United States.

APPENDIX C. ANNUAL COMPLIANCE CERTIFICATION REPORT



ENVIRONMENTAL HEALTH & SAFETY

*Department of Environmental Health and Safety
MSC07 4100, 1 University of New Mexico
Phone: 505-277-2753 Fax: 505-277-9006
Email: EHSWEB-L@list.unm.edu*

Date: 5/28/2021
To: Teresa Costantinidis, Senior Vice President for Finance and Administration
From: Casey Hall, Director, Environmental Health and Safety *CBH*
Subject: Annual Compliance Certification

UNM is required annually to submit a certification of our compliance with the Title V operating permit issued by the City of Albuquerque Environmental Health Division (CABQ EHD) and in accordance with the Clean Air Act. This document acts as a self-audit that UNM has followed all requirements and regulations set out in the Title V permit.

Please sign on the requested page as the responsible official for UNM and an EHS employee will deliver the document to the City. The document is due to the City of Albuquerque by Friday June 11, 2021.

If you have any questions or concerns please contact me at (315) 885-8683.



**City of Albuquerque Environmental Health Department
Air Quality Division
Annual Compliance Certification Report Form
(20.11.42.12.C.(5).(c) NMAC)**

PART 1

Identifying Information	
Source Name: The University of New Mexico, Main Campus	County: Bernalillo
Source Address: Scholes Hall 160, Bldg. 10	
City: Albuquerque	State: NM Zip Code: 87131-001
Responsible Official: Teresa Costantinidis	Ph. No. 505-277-7250 Fax No.
Technical Contact: Casey Hall	Ph. No. 505-277-0305 Fax No. 505-277-9006
Principal Company Product or Business: University	Primary SIC Code: 8221
Permit No. 0536-RN1	Permit Issued Date: May 14 th 2018
Reporting Period	The reporting period should be the one-year, or shorter period, required by your operating permit. It will be assumed that the beginning date begins and ends at Midnight (12 A.M.), unless otherwise specified
Period Beginning	14 / May / 2020
Period Ending	14 / May / 2021
Certification of Truth, Accuracy, and Completeness	
I, <u>Teresa Costantinidis</u> certify that, based on information and belief formed after reasonable inquiry, the statements and information contained in the attached annual compliance certification are true, accurate, and complete.	
Signature <u>Teresa A. Costantinidis</u>	Date: <u>May 28, 2021</u>
Title: <u>Senior Vice President for Finance and Administration</u>	

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or Intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
1.0	Section Heading - No action required	I	N/A
1.1	Review of general conditions and enforceability; payment of permitting fees	I	Yes
1.1.1	Review of the permit conditions	I	Yes
1.1.2	No compliance action required	I	Yes
1.1.3	This is an allowance given to CABQ - no action required	I	Yes
1.1.4	All requested information provided to CABQ EHD. Any further information will be furnished if required.	I	Yes
1.1.5	No such request by permittee - no action required	I	Yes
1.1.6	No action needed to comply	I	Yes
1.2	Regulatory Statement - no action required	I	Yes
1.3	Regulatory Statement - no action required	I	Yes
1.4	Annual fees paid - order form on record from 8/13/2020	I	Yes
1.5	Documents included with each submission signed by the UNM SVP for Finance and Administration	I	Yes
1.6	Regulatory Statement - no action required	I	Yes
1.7	SLEIS and e-GGRT emission inventories submitted each March	I	Yes
1.8	No new requirements in last year	I	Yes
1.9	Regulatory Statement - no action required	I	Yes
2.0	Section Heading - No action required	I	Yes
2.1	Some equipment deviates from that listed in 0536-RN1 2.1	I	Dev
3.0	Section Heading - No action required	I	Yes
3.1 of the permit (Applicable Requirements)	Applicable Requirements in Table 1, including recordkeeping, testing of applicable units, monitoring of fuel usage maintenance of fugitive dust control permit - Please see further information contained within the ACC.	I	Dev
3.1.1	TRB-2 gas producer replaced May 2019. City was notified in accordance with this section.	I	Yes
3.1.2	All required notifications from 40 CFR 60 Subpart A have been sent to the city, for compliance with Subpart GG see annual compliance testing report submitted for 116-TRB-1.	I	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or Intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
3.1.3	116-TRB-2 meets all requirements under 40 CFR 60 Subpart A and KKKK	I	Yes
3.1.4	Compliance with NSPS was shown in initial compliance tests.	I	Yes
3.1.5	All emergency generators listed comply with and are operated in accordance with the required regulations	I	Yes
3.1.6	Only #2 low sulfur fuel is delivered to UNM Generators	I	Yes
3.1.7	The catalytic converter was installed during the original installation and is functional	I	Yes
3.1.8	Less than 17,175 gals of diesel burned in last 12 months, only #2 ulsd is used	I	Yes
3.1.9	UNM only takes delivery of fuel that meets these requirements, verified by monthly checklists filled out by staff	I	Yes
3.1.10	UNM follows the manufacturers' maintenance and operations instructions as well as complying with 40 CFR 89 and 1068; 94 does not apply	I	Yes
3.1.11	All engines meet the requirements of 40 CFR Part 60 Subpart IIII	I	Yes
3.1.12	Compliance verified through: communication with operator, monthly compliance checklist, and procedures for operation of crematorium. Pathological waste is shipped offsite for proper disposal	I	Yes
3.1.13	See following subsections for compliance	I	Yes
3.1.13.A.	Source was compliant by 1/10/2011, see below	I	Yes
3.1.13.B.	Regulatory statement - no requirements	I	Yes
3.1.13.B.1	Part of O&M plan posted on site, compliance documented monthly via visual inspections required by NMPST Bureau	I	Yes
3.1.13.B.2	Regulatory statement - no requirements	I	Yes
3.1.13.B.2.a)	Part of O&M plan posted on site, compliance documented monthly via visual inspections required by NMPST Bureau	I	Yes
3.1.13.B.2.b)	Part of O&M plan posted on site, compliance documented monthly via visual inspections required by NMPST Bureau	I	Yes
3.1.13.B.2.c)	Part of O&M plan posted on site, compliance documented monthly via visual inspections required by NMPST Bureau	I	Yes
3.1.13.B.2.d)	Part of O&M plan posted on site, compliance documented monthly via visual inspections required by NMPST Bureau. Further verified via yearly IDDE and P2 inspection.	I	Yes
3.1.13.B.3.	Records are available, request from CABQ was satisfied.	I	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or Intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
3.1.13.C	Section Heading - No action required	I	Yes
3.1.13.C.1	Tank Designed to comply with 40 CFR 63.11132 - Submerged tank filling	I	Yes
3.1.13.C.2	Tank Designed to comply	I	Yes
3.1.13.C.3	Tank installed before 2006	I	Yes
3.1.13.C.4	Optional and not applicable to this tank	I	Yes
3.1.13.C.5	Not applicable to this tank	I	Yes
3.1.14	Programmatic permit and plan are maintained	I	Yes
3.1.15	All applicable submissions and record keeping requirements in 40 CFR 98 have been completed, see e-GGRT submission	I	Yes
3.1.16	Engines are maintained consistent with and meet all applicable standards set forth in 40 CFR 60 Subpart IIIJ and verified through our reasonable inquiry checklists from technicians	I	Yes
3.1.17	Certified engines were purchased and all applicable requirements of Subpart IIIJ are adhered to, see previous section	I	Yes
3.2 of the permit (Emission Limits)	Testing, as outlined in sub-conditions 3.2 and individual ATC and source reg conditions)	I	Yes
3.2.1	Compliance verified by performance tests as required or by proper maintenance and reasonable inquiry process otherwise	I	Yes
3.2.1.1	Section Heading - No action required	I	Yes
3.2.1.1.1	Confirmed via regular maintenance, operations as specified by manufacturer and through reasonable inquiry checklist	I	Yes
3.2.1.2	Section Heading - No action required	I	Yes
3.2.1.2.1	Once yearly opacity testing, conducted by UNM EHS	I	Yes
3.2.1.2.2	An initial compliance test was conducted and showed values under these. See above for compliance with opacity requirements.	I	Yes
3.2.1.3	Section Heading - No action required	I	Yes
3.2.1.3.1	Pipeline natural gas is burned in the units, providing compliance with this section	I	Yes
3.2.1.3.2	See performance tests for compliance value. Equation is used in semi-annual report.	I	Yes
3.2.1.3.3	3rd party contractor See submitted compliance test reports for these units	I	Yes
3.2.1.3.4	See 3rd party contractor performance compliance test for verification	I	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
3.2.1.3.5	See 3rd party contractor performance compliance test for verification	I	Yes
3.2.1.3.6	The resulting value is 210 ppmv @ 15% O2. See the semi-annual report for compliance.	I	Yes
3.2.1.3.7	Verified by annual performance test, see test report	I	Yes
3.2.1.3.8	The turbines feed a common steam header, however Turbine 2 uses concentration based NOx standard, and therefore we are not quantifying the useful output	I	Yes
3.2.1.3.9	This equation is the one used in the semi-annual report and compliance test report	I	Yes
3.2.1.3.10	116-TRB-1 meets SO2 emission rates, see below	I	Yes
3.2.1.3.10.i	Verified by annual performance test, see test report	I	Yes
3.2.1.3.10.ii	Gas composition records are in the test report cited above	I	Yes
3.2.1.3.11	116-TRB-2 meets SO2 emission rates, see below	I	Yes
3.2.1.3.11.i	Verified by annual performance test, see test report	I	Yes
3.2.1.3.11.ii	Gas composition records are in the test report cited above	I	Yes
3.2.1.3.12	See performance tests for compliance value. Equation is used in semi-annual report.	I	Yes
3.2.1.3.13	See performance tests for compliance value. Equation is used in semi-annual report.	I	Yes
3.2.1.3.14	Pipeline natural gas is proven by gas report from vendor and is the only available gas source. Compliance with condition 2(o) of ATC#1643-M1 shown above, 3rd party contractor.	I	Yes
3.2.1.3.15	Verified during biannual performance test	I	Yes
3.2.1.3.16	Diesel burning on one unit, one day for training purposes. Boiler run in accordance with all manufacturer recommendations during diesel exercise.	I	yes
3.2.1.4	Section Heading - No action required	I	Yes
3.2.1.4.1	Opacity for all sources listed was done in CY21 by EHS staff, except for 116-EG-1 which has Method 9 done by 3rd party contractor during compliance test. Note 034-EG-1 is now a diesel generator and has a different opacity limit.	I	Yes
3.2.1.4.2	Method 9 opacity tests were conducted by EHS staff within last 12 months	I	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or Intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
3.2.1.4.3	Emissions are under those set out by following permitted power, UNM follows manufacturer's operations and maintenance plan	I	Yes
3.2.1.4.4	Listed Engines are installed and operated in accordance with manufacturer's requirements. All are certified engines.	I	Yes
3.2.1.4.5	Opacities were verified within last 12 months by UNM staff	I	Yes
3.2.1.4.6	Listed Engine is installed and operated in accordance with manufacturer's requirements. 191-EG-1 is a certified engine.	I	Yes
3.2.1.4.7	Listed Engine is installed and operated in accordance with manufacturer's requirements. 253-EG-2 is a certified engine.	I	Yes
3.2.1.4.8	191-EG-1A is a certified engine	I	Yes
3.2.1.4.9	Engine 253-EG-2 is a certified engine	I	Yes
3.2.1.4.10	Listed Engines are installed and operated in accordance with manufacturer's requirements. All are certified engines. 204 opacity verified by EHS.	I	Yes
3.2.1.4.11	Listed Engines are installed and operated in accordance with manufacturer's requirements. All are certified engines. 072 Opacity Verified by EHS	I	Yes
3.2.1.4.12	Generators are EPA certified models operated in accordance with manufacturers specifications. 253-EG-1 Opacity verified by EHS	I	Yes
3.2.1.4.13	EPA certified generator installed and operated according to manufacturers specs	I	Yes
3.2.1.4.14	EPA certified generator installed and operated according to manufacturers specs	I	Yes
3.2.1.4.15	EPA certified generator installed and operated according to manufacturers specs	I	yes
3.2.1.4.16	EPA certified generator installed and operated according to manufacturers specs	I	Yes
3.2.1.4.17	EPA certified generators installed and operated according to manufacturers specs	I	Yes
3.2.1.4.18	EPA certified generator installed and operated according to manufacturers instructions	I	Yes
3.2.1.4.19	EPA certified generator installed and operated according to manufacturers instructions	I	Yes
3.2.1.4.20	EPA certified generator installed and operated according to manufacturers instructions	I	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or Intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
3.2.1.4.21	EPA certified generator installed and operated according to manufacturers instructions	I	Yes
3.2.1.4.22	EPA certified generator installed and operated according to manufacturers instructions	I	Yes
3.2.1.4.23	EPA certified generator installed and operated according to manufacturers instructions	I	Yes
3.2.1.5	Section Heading - No action required	I	Yes
3.2.1.5.1	Verified using EPA TANKS program	I	Yes
3.2.1.6	Section Heading - No action required	I	Yes
3.2.1.6.1	12 month rolling total calculated monthly. Compliance in semi-annual submissions.	I	Yes
3.2.1.6.2	12 month rolling total calculated monthly. See semi-annual submissions. Total HAPS are under 7 tons therefore any single HAP is under 7 tons. Tables of individual HAPs is included in semi-annual report.	I	Yes
3.2.1.7	Section Heading - No action required	I	Yes
3.2.1.7.1	Emissions for external combustion sources are operated in accordance with manufacturers recommendations and have regular scheduled maintenance performed	I	Yes
3.2	Regulatory call out, no action required.	I	Yes
3.3 of the permit (Operational Requirements)	Section Heading - No action required	I	Yes
3.3.1	Section Heading - No action required	I	Yes
3.3.1.1	Regulatory statement - no compliance required	I	Yes
3.3.1.2	Calculated monthly - see semi-annual reports for records	I	Yes
3.3.2	Section Heading - No action required	I	Yes
3.3.2.1	Unit operated fewer hours than this - see semi-annual report	I	Yes
3.3.2.2	Unit used less gas than this. See semi-annual report.	I	Yes
3.3.2.3	Unit was not charged over 3 CY/day - see semi-annual report	I	Yes
3.3.2.4	Unit is operated as such. Verified via reasonable inquiry checklist.	I	Yes
3.3.3	Section Heading - No action required	I	Yes
3.3.3.1	Unit operated fewer hours than this - see semi-annual report. Unit is only supplied with pipeline gas. Purchase records available for inspection	I	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or Intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
3.3.3.2	Unit operated fewer hours than this - see semi-annual report. Unit is only supplied with pipeline gas. Purchase records available for inspection	I	Yes
3.3.3.3	Unit operated fewer hours than this on pipeline gas see semi-annual	I	Yes
3.3.3.4	Less than 17,175 gals of diesel burned in last 12 months, only #2 ulsd is used. Recorded at fuel gauge	I	Yes
3.3.3.5	Unit operated fewer hours than this on pipeline gas see semi-annual	I	Yes
3.3.3.6	Less than 17,175 gals of diesel burned in last 12 months, only #2 ulsd is used. Recorded at fuel Gauge	I	Yes
3.3.4	Section Heading - No action required	I	Yes
3.3.4.1	Generators operated fewer hours than listed - tracked via TMA system	I	Yes
3.3.4.1.1	Generators operated fewer hours than listed - tracked via TMA system. Generators not operated for peak shaving	I	Yes
3.3.4.1.2	Units operated fewer than 100 hours in the last 12 months including maintenance and readiness checks	I	Yes
3.3.4.1.3	Units operated fewer than 50 hours in the last 12 months	I	Yes
3.3.4.1.4	Units operated less than 300 hours in the last 12 months. Units were not operated for peak shaving	I	Yes
3.3.4.1.5	Units operated only for emergency generation use and monthly maintenance. Unit used less than 500 hours	I	Yes
3.3.4.1.6	Unit operated less than 200 hours and only used for emergency generation or for monthly exercising/maintenance	I	Yes
3.3.5	Section Heading - No action required	I	Yes
3.3.5.1	Vapor recovery system installed	I	Yes
3.3.5.2	Systems are regularly maintained and checked by staff	I	Yes
3.3.5.3	Throughput tracked monthly, less than 190,000 gallons of throughput in last 12 months	I	Yes
3.3.6	Section Heading - No action required	I	Yes
3.3.6.1	Regulatory statement - no action required	I	Yes
3.4 Emissions Monitoring and Testing	Monitoring and Testing of emission units, per table in section 3.4 see sections below for more details	I	Yes
3.4.1	Section Heading - No action required	I	Yes
3.4.1.1	Natural gas usage is continuously monitored and recorded	C	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
3.4.2	Section Heading - No action required	I	Yes
3.4.2.1	Opacity check part of reasonable inquiry checklist, was performed by UNM in last 12 months	I	Yes
3.4.2.2	Initial compliance test was completed	I	Yes
3.4.2.3	Fuel usage and charge rates are monitored and recorded	I	Yes
3.4.3	Section Heading - No action required	I	Yes
3.4.3.1	Initial compliance test was completed on both units	I	Yes
3.4.3.2	Initial compliance test was completed on both units	I	Yes
3.4.3.3	Annual compliance tests were conducted and accepted by CABQ	I	Yes
3.4.3.4	Compliance test was completed for TRB-2 after gas producer replacement in May 2019	I	Yes
3.4.3.5	Conducted as part of annual emissions testing	I	Yes
3.4.3.6	Opacity checked as part of compliance testing	I	Yes
3.4.3.7	Initial compliance tests were conducted	I	Yes
3.4.3.8	Compliance testing is done on a 25 month schedule. See submitted test reports for methods.	I	Yes
3.4.3.9	Compliance testing done at multiple loads, see test reports	I	Yes
3.4.3.10	No monitoring required - only natural gas is combusted in units	I	Yes
3.4.3.11	No monitoring required - only natural gas is combusted in units	I	Yes
3.4.3.12	Fuel consumption monitored continuously, rolling totals calculated monthly	C	Yes
3.4.3.13	Fuel consumption monitored continuously, rolling totals calculated monthly	C	Yes
3.4.4	Section Heading - No action required	I	Yes
3.4.4.1	Hours are monitored and recorded in TMA, part of monthly checklist	I	Yes
3.4.4.2	Hours are monitored and recorded in TMA, part of monthly checklist	I	Yes
3.4.4.3	Hours are monitored and recorded in TMA, part of monthly checklist	I	Yes
3.4.4.4	Hours are monitored and recorded in TMA, part of monthly checklist	I	Yes
3.4.4.5	Initial compliance testing completed and submitted to CABQ except for 253-EG-1 which is allowed by this section	I	Yes
3.4.4.6	Yearly compliance testing conducted on 116-EG-1 and reports submitted to CABQ	I	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or Intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
3.4.4.7	Initial compliance testing completed in accordance with this section. See test reports submitted to and accepted by CABQ	I	Yes
3.4.5	Section Heading - No action required	I	Yes
3.4.5.1	Throughput tracked monthly using Veederroot and purchase records	I	Yes
3.4.6	Section Heading - No action required	I	Yes
3.4.6.1	Chemical usage tracked via purchasing records. VOC's calculated monthly	I	Yes
3.4.6.2	Chemical usage tracked via purchasing records. HAP's calculated monthly	I	Yes
3.4.7	Section Heading - No action required	I	Yes
3.4.7.1	Green house gas reporting done via e-GGRT	I	Yes
3.4.8	CABQ is notified of testing 30 days prior to test	I	Yes
3.4.9	Regulatory Statement - No action required	I	Yes
3.4.10	No requests from the city in the last 12 months - no action required	I	Yes
3.4.11	Regulatory Statement - No action required	I	Yes
4.0	Section Heading - No action required	I	Yes
4.1 of the permit (Recordkeeping Requirements)	Recordkeeping of emissions unit parameters, as described in Recordkeeping table are all complied with. Copies are electronic or paper	I	Yes
4.1.1	Section Heading - No action required	I	Yes
4.1.1.1	Required fuel consumption records are kept electronically for 2 years for 176-BLR-1,2,3	I	Yes
4.1.2	Section Heading - No action required	I	Yes
4.1.2.1	Records kept electronically by EHS	I	Yes
4.1.2.1	Records kept electronically by EHS	I	Yes
4.1.3	Section Heading - No action required	I	Yes
4.1.3.1	Records kept on site	I	Yes
4.1.3.2	Hard copies of performance tests kept on location, Electronic Copies kept at EHS	I	Yes
4.1.3.3	Sulfur content of fuel kept as part of fuel billing	I	Yes
4.1.3.4	Fuel records kept on site and in EHS database	I	Yes
4.1.3.5	Fuel records kept on site and in EHS database	I	Yes
4.1.3.6	Emission records kept by EHS	I	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other Information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
4.1.4	Section Heading - No action required	I	Yes
4.1.4.1	Records kept by EHS & compiled monthly via maintenance by UNM personnel in TMA database	I	Yes
4.1.4.2	Initial test records for generators kept on file. Only 116-EG-1 has yearly testing requirements. The test records are kept on file	I	Yes
4.1.4.3	Records kept by EHS compiled monthly via maintenance by UNM personnel	I	Yes
4.1.5	Section Heading - No action required	I	Yes
4.1.5.1	Monthly throughput records kept by EHS	I	Yes
4.1.5.2	Records are available and given to CABQ upon request	I	Yes
4.1.6	Section Heading - No action required	I	Yes
4.1.6.1	These records are kept by EHS and rolling totals are calculated monthly	I	Yes
4.1.6.2	These records are kept by EHS and rolling totals are calculated monthly	I	Yes
4.1.7	Section Heading - No action required	I	Yes
4.1.7.1	Green house gas records are kept	I	Yes
4.2 of the permit (Data Recording Requirements)	Section Heading - No action required	I	Yes
4.2.1	Records are kept. See the emission tests for further information	I	Yes
4.2.2	Records are kept. See the emission tests for further information	I	Yes
4.2.3	Records are kept. See the emission tests for further information	I	Yes
4.2.4	Records are kept. See the emission tests for further information	I	Yes
4.2.5	Records are kept. See the emission tests for further information	I	Yes
4.2.6	Records are kept. See the emission tests for further information	I	Yes
4.3 of the permit (Maintenance of Records)	Maintain copies of all monitoring and measurement data for at least 5 years. The data is collected by Contractors and UNM staff. UNM SRS keeps the records on file. Note UNM does not have CEMS	I	Yes
4.4 of the permit (off-permit changes)	Review records of any off-permit changes that result in emissions not regulated by this permit - no such changes have been made within period	I	Yes
5.0 Reporting	Section Heading - No action required	I	Yes
5.1 of the permit (Monitoring Reports)	Section Heading - No action required	I	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or Intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
5.1.1	Monitoring reports as described in Table 5.1 of the permit are submitted as required. See the copies of semi-annual submissions	I	Yes
5.1.2	Section Heading - No action required	I	Yes
5.1.2.1	Monthly fuel consumption reported - see semi-annual submission	I	Yes
5.1.2.2	This information is reported in semi-annual	I	Yes
5.1.2.2.i	This information is reported in semi-annual	I	Yes
5.1.2.2.ii	This information is reported in semi-annual	I	Yes
5.1.3	Section Heading - No action required	I	Yes
5.1.3.1	This information was reported to the City		
5.1.4	Section Heading - No action required	I	Yes
5.1.4.1	City was notified of replacement that occurred in May 2019	I	Yes
5.1.4.2	City was notified of actual date occurred in May 2019	I	Yes
5.1.4.3	Information given to city in June 2019, note the date of manufacture was omitted	I	Yes
5.1.4.4	The fuel usage is reported in the semi-annual report	I	Yes
5.1.4.5	The rolling totals are reported as part of semi-annual submission	I	Yes
5.1.5	Section Heading - No action required	I	Yes
5.1.5.1	This information is reported in the semi-annual report	I	Yes
5.1.6	Section Heading - No action required	I	Yes
5.1.6.1	Throughput tracked monthly and submitted as part of the semi-annual report	I	Yes
5.1.6.2	This information is reported as part of ATC permit submission	I	Yes
5.1.7	Section Heading - No action required	I	Yes
5.1.7.1	HAPs totals are reported in Tons. A list of individual HAPS is included in semi-annual report.	I	Yes
5.1.7.2	VOCs are reported on a monthly and rolling 12 month basis as part of semi-annual submissions	I	Yes
5.1.8	Section Heading - No action required	I	Yes
5.1.8.1	This information is reported to the EPA via e-GGRT	I	Yes
5.2 of the permit (Reporting Deviations)	Submit reports of deviations when they occur. Deviations report attached to this ACC. New deviations are for ATC permits, reports sent on day of discovery.	I	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or Intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
5.3 of the permit (Reporting Excess Emissions)	Submit reports of excess emissions, when they occur. No excess emissions occurred during reporting period.	I	Yes
6.0 Compliance	Section Heading - No action required	I	Yes
6.1 of the permit (Compliance Certification)	Section Heading - No action required	I	Yes
6.1.1	This report fills the requirements of Section 6.1.1 and is submitted in accordance with this section	I	Yes
6.1.2	No dispersion modeling was performed during reporting period	I	Yes
6.2	Section Heading - No action required	I	Yes
6.2.1	Department representatives allowed in. Please coordinate with EHS.	I	Yes
6.2.2	Access to documents given upon request	I	Yes
6.2.3	Facility inspections facilitated upon request	I	Yes
6.2.4	Sampling or monitoring can be coordinated upon request	I	Yes
6.3	Copy of permit posted in office along with ATC at each individual source	I	Yes
7.0 Emergencies	Section Heading - No action required	I	Yes
7.1	Definition - no action required	I	Yes
7.2	Preamble - no action required	I	Yes
7.2.1	No emergency recorded during reporting period	I	Yes
7.2.2	No emergency recorded during reporting period	I	Yes
7.2.3	No emergency recorded during reporting period	I	Yes
7.2.4	No emergency recorded during reporting period	I	Yes
7.3	No emergency recorded during reporting period	I	Yes
7.4	No emergency recorded during reporting period	I	Yes
7.5	No emergency recorded during reporting period	I	Yes
7.6	No emergency recorded during reporting period	I	Yes
8.0 Permit Reopening and Revocation	Section Heading - No action required	I	Yes
8.1	Preamble - no action required	I	Yes
8.1.1	Regulatory Statement - No action required	I	Yes
8.1.2	Regulatory Statement - No action required	I	Yes

PART 2

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>			
Permit Term or Condition Identification No.	Method(s) or other information or other facts used to determine the compliance status	Data Collection Frequency continuous (C) or Intermittent (I)	In Compliance? If so type "Yes". If not type "Dev" and complete table entitled "Deviation Reporting (Part 3)"
8.1.3	Regulatory Statement - No action required	I	Yes
8.1.4	Regulatory Statement - No action required	I	Yes
8.2	No revocation occurred therefore this section is not applicable at this time	I	Yes
9.0 of the permit (Certification of reports and compliance certifications for accuracy, truth and completeness)	Certification by a responsible official - SVP for Finance and Administration. The responsible official has access to reasonable inquiry documentation.	I	Yes
10.0 Confidential Information	Section Heading - No action required	I	Yes
10.1	Regulatory statement - No action required	I	Yes
10.2	Regulatory statement - No action required	I	Yes
10.3	Regulatory statement - No action required	I	Yes
10.4	Regulatory statement - No action required	I	Yes
11.0 Airborne Particulate Matter	Section Heading - No action required	I	Yes
11.1	Fugitive dust control permits applied for when applicable. UNM also ensures that contractors taking ownership of UNM property obtain Fugitive Dust Control Permits when required.	I	Yes
11.2	UNM has in place operations manuals for the control of fugitive dust from such locations.	I	Yes
12.0 Credible Evidence	Section Heading - No action required	I	Yes
12.1	Regulatory Statement	I	Yes
13.0 Annual Fees	Section Heading - No action required	I	Yes
13.1	Annual fees paid	I	Yes

PART 3

Deviation Reporting	
Question	(Yes/No)
Are there any deviations being reported with this annual compliance certification. If yes complete the table entitled "Deviation Summary Report" (Part 4)	Yes
Have there been any previous deviation reports (ie. "Region 6 Operating Permits Deviation Summary Report") forwarded to the EPA. If yes, attach the Deviation Summary Report to this annual compliance certification or complete the table entitled "Deviation Summary Report" (Part 4)	No
Have all quarter or semiannual deviation reports been submitted to AEHD? If yes part 4 does not need to include on your submittal to state. However it is required for the EPA's review.	N/A

PART 4

Annual Compliance Certification Data for Operating Permit No. <u>0536-RN1</u>						
No	Emission Unit ID	Poll	Applicable Requirement (Include Rule Citation)	Monitoring Method (Include Rule Citation)	Monitoring Frequency	Total # of Deviations
1	034-EG-1, 046-EG-1, 048-EG-1, 057-EG-1, 072-EG-1, 083-EG-1, 116-TRB-1, 116-TRB-2, 122-EG-1, 191-EG-1, 194-EG-1, 200-EG-1, 211-EG-3, 227-EG-1, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, 253-EG-2, 260-EG-2, 262-CRM-1, 266-EG-1, 301-EG-1, 302-EG-1A	N/A	Condition 2.1 of permit (previously reported in corrected ACC dated 2/26/15 and 6/29/15)	Authorized process equipment table: Model number, Serial Number, Manufacturer	Annual	24
2	200 EG-1	N/A	Condition 2.1 of permit (previously reported in corrected ACC dated 2/26/15 and 6/29/15)	Authorized process equipment table: Rated Process Rate	Annual	1
3	338-BLR-1	N/A	20.11.41.2 NMAC	Technical Revision	Annual	1

No	Deviation Start		Deviation End		No. of Days	Cause of Deviation	Corrective Action Taken
	Date	Time	Date	Time			
1	1/28/15 & 6/26/20	N/A	N/A	N/A	N/A	Serial Numbers and/or model numbers and/or manufacturer and/or dates of manufacture/installation listed on equipment name plates are different from those listed on Title V permit. Specific cause of deviation for generators is unknown. Some units have been replaced causing issues.	UNM is working with CABQ to identify and prepare new permit submissions for all units that do not match. Some units may require the addition of a plate to mark their serial#/Process rate/Model#
2	1/28/2015 (Discovery Date)	N/A	N/A	N/A	N/A	Equipment rated capacities on equipment name plate are higher than what is listed on Title V permit. Specific cause of deviation is unknown.	See response to 1) above.
3	6/26/2020	N/A	N/A	N/A	N/A	Unit was replaced without a proper permit revision as required by 20.11.41.2 NMAC.	UNM is in the process of correcting all permits to match conditions. Additionally, Facilities Management now has a checklist item as part of any boiler replacement to notify EHS before replacement to ensure proper permitting action is taken.

APPENDIX D. CURRENT TITLE V OPERATING PERMIT



**ALBUQUERQUE/BERNALILLO COUNTY
AIR QUALITY CONTROL BOARD
TITLE V OPERATING PERMIT #0536-RN1
AIRS #35/001/00141
FACILITY ID: FA0002997 RECORD ID: PR0001254**



**Issued to: The Regents of the University of New Mexico
Scholes Hall 160, Bldg. 10
1800 Roma NE
Albuquerque, NM 87131-0001**

**Certified Mail 7016 1370 0000 2023 7472
Return Receipt Requested**

Facility: The University of New Mexico – Main Campus

The Albuquerque Environmental Health Department (Department) and the Albuquerque/Bernalillo County Air Quality Control Board (A/BCAQCB); pursuant to the Federal Clean Air Act (CAA, also known herein as the Federal Act); the New Mexico Air Quality Control Act, NMSA 1978, as amended 74-2-4, 74-2-5.C; the Joint Air Quality control Board Ordinance, Revised Ordinances of Albuquerque 1994, 9-5-1-4; the Joint air quality Control Board Ordinance, Bernalillo County Ordinance 94-5; A/BCAQCB Regulation Title 20, New Mexico Administrative Code (NMAC), Chapter 11 (20.11 NMAC), Part 41 (20.11.41 NMAC), Authority-To-Construct; Part 42 (20.11.42 NMAC), Operating Permits; hereby issue Operating Permit 536-M2 to The Regents of the University of New Mexico (UNM) and is hereby authorized to operate the following processes at:

Facility/Location	Process Description	SIC	NAICS
University of New Mexico – Main Campus Albuquerque, NM 87131-0001	Colleges, Universities, and Professional Schools	8221	611310

This Operating Permit has been issued based on the review of the application received by the Albuquerque Environmental Health Department (Department), Air Quality Program (Program) August 19, 2013, which was deemed complete on October 18, 2013, and on the National Ambient Air Quality Standards, New Mexico Ambient Air Quality Standards, and Air Quality Control Regulations for Albuquerque/Bernalillo County, as amended. This permit places enforceable limitations and standards on processes at the Facility. The term of this permit is five (5) years. This permit will expire on May 14, 2023 which is five years from the date of issuance, pursuant to 20.11.42.12.(C) NMAC. Application for renewal of this permit is due by May 14, 2022 which is twelve (12) months prior to the date of expiration, pursuant to 20.11.42.12.A.(2).(a).(ii) NMAC. This Title V Operating Permit #0536-RN1 supersedes the Title V Operating Permit #0536-M1 issued on October 15, 2014.

Pursuant to the New Mexico Air Quality Control Act, NMSA 1978, as amended, all terms and conditions in this permit are enforceable by the Department, including any provisions designed to limit this Facility's emissions. Furthermore, pursuant to 20.11.42.12.C.(1).(e) NMAC, all terms and conditions are enforceable under the Federal Act by the Administrator of the United States Environmental Protection Agency (EPA) and citizens, unless the term or condition is specifically designated in this permit as not being enforceable under the Federal Act.

Issued on the 14th day of May, 2018

Isreal J. Tavares
Isreal Tavares, Environmental Health Manager
Permitting Section
Air Quality Program
Environmental Health Department
City of Albuquerque

TABLE OF CONTENTS

Introduction.....	1
Permit Shield.....	1
Total Emissions.....	10
Insignificant Activities.....	10
Permit Terms and Conditions.....	12
1.0 General Conditions.....	12
2.0 Facility Information.....	13
2.1 Process Equipment.....	13
3.0 Requirements for Individual Emission Units.....	18
3.1 Applicable Requirements.....	18
3.2 Emission Limits.....	21
3.2.1.1 Steam Plant Boilers Emission Limit Requirements.....	25
3.2.1.2 ARF Crematorium Emission Limit Requirements.....	25
3.2.1.3 Ford Utilities Emission Limit Requirements.....	26
3.2.1.4 Emergency Internal Combustion Engines Emission Limit Requirements.....	28
3.2.1.5 Above Ground Storage Tanks Emission Limit Requirements.....	30
3.2.1.6 Chemical Usage Emission Limit Requirements.....	30
3.2.1.7 External Combustion Emission Limit Requirements.....	30
3.3 Operational Requirements.....	31
3.3.1 Steam Plant Boilers Operational Requirements.....	31
3.3.2 ARF Crematorium Operational Requirements.....	31
3.3.3 Ford Utilities Operational Requirements.....	31
3.3.4 Emergency Internal Combustion Engines Operational Requirements.....	32
3.3.5 Above Ground Storage Tanks Operation Requirements.....	33
3.3.6 External Combustion Operational Requirements.....	33
3.4 Emissions Monitoring and Testing Requirements.....	33
3.4.1 Steam Plant Boilers Monitoring and Testing Requirements.....	36
3.4.2 ARF Crematorium Emissions Monitoring and Testing Requirements.....	36
3.4.3 Ford Utilities Emissions Monitoring and Testing Requirements.....	36
3.4.4 Emergency Internal Combustion Engines Emissions Monitoring and Testing.....	37
3.4.5 Above Ground Storage Tanks Emissions Monitoring and Testing Requirements.....	38
3.4.6 Chemical Usage Monitoring and Testing Requirements.....	39
3.4.7 Mandatory Greenhouse Gas Reporting Rule - Monitoring Requirements.....	39
4.0 Recordkeeping.....	40
4.1 Recordkeeping Requirements.....	40
4.1.1 Steam Plant Boilers Recordkeeping Requirements.....	40
4.1.2 ARF Crematorium Recordkeeping Requirements.....	40
4.1.3 Ford Utilities Recordkeeping Requirements.....	41
4.1.4 Emergency Internal Combustion Engines Recordkeeping Requirements.....	41
4.1.5 Above Ground Storage Tanks Recordkeeping Requirements.....	41
4.1.6 Chemical Usage Recordkeeping Requirements.....	41
4.1.7 Mandatory Greenhouse Gas Reporting Rule - Recordkeeping Requirements.....	42
4.2 Data Recording Requirements.....	42
4.3 Maintenance of Records.....	42
4.4 Off Permit Changes.....	42
5.0 Reporting.....	42
5.1 Monitoring Reports.....	42
5.1.1 Reporting Requirements Table.....	42
5.1.2 Steam Plant Boiler Reporting Requirements.....	43
5.1.3 ARF Crematorium Reporting Requirements.....	44
5.1.4 Ford Utilities Reporting Requirements.....	44

5.1.4	Ford Utilities Reporting Requirements.....	44
5.1.5	Emergency Internal Combustion Engines Reporting Requirements.....	44
5.1.6	Above Ground Storage Tanks Reporting Requirements.....	44
5.1.7	Chemical Usage Reporting Requirements.....	45
5.1.8	Mandatory Greenhouse Gas Rule Reporting Requirements.....	45
5.2	Reporting Deviations.....	45
5.3	Reporting Excess Emissions.....	45
6.0	Compliance.....	46
6.1	Compliance Certification.....	46
6.2	Inspections.....	46
6.3	Posting of Permit.....	46
7.0	Emergencies.....	46
8.0	Permit Reopening and Revocation.....	47
9.0	Certification.....	48
10.0	Confidential Information.....	48
11.0	Airborne Particulate Matter.....	48
12.0	Credible Evidence	49
13.0	Annual Fees.....	49
	Appeal Procedures.....	50
	Submittal of Reports and Certifications.....	50
	Referenced Attachments	51

Definition of Abbreviations and Acronyms

<u>Abbreviation/Acronym</u>	<u>Definition</u>
A/BCAQCB --	The Albuquerque/Bernalillo County Air Quality Control Board
Administrator --	The Administrator of the United States Environmental Protection Agency
ATC --	Authority-To-Construct
CAA --	The Federal Clean Air Act
CEMS--	Continuous Emissions Monitoring System
CH ₄ --	methane
CO--	Carbon monoxide
CO ₂ --	Carbon dioxide
Department or Director - -	The City of Albuquerque Environmental Health Department/Air Quality Program
EPA --	United States Environmental Protection Agency
Facility - -	The University of New Mexico and the Owner/Operator or Responsible Official
Federal Act - -	The Federal Clean Air Act
GDF	Gasoline Dispensing Facility
GHG - -	Greenhouse gas
HAP - -	Hazardous Air Pollutant
hp - -	Horsepower
kW - -	Kilowatt
lb/hr - -	Pound per Hour
NAICS - -	North American Industrial Classification System
NESHAP - -	National Emission Standards for Hazardous Air Pollutants
NMSA - -	New Mexico Statutes Annotated
NMAC - -	New Mexico Administrative Code
20.11 NMAC - -	New Mexico Administrative Code, Title 20, Chapter 11
N ₂ O--	Nitrous oxide
PM ₁₀ - -	Particulate Matter, 10 microns or less
PM _{2.5} - -	Particulate Matter, 2.5 microns or less
ppm - -	Parts per million
PTE - -	Potential to emit
REG - -	Source Registration a/k/a Certificate of Registration
SIC - -	Standard Industrial Classification
TPY - -	Tons per year
TSP - -	Total Suspended Particulate
μg/m ³ - -	Micrograms per cubic meter
VOC--	Volatile organic compounds

INTRODUCTION

This facility is state chartered research university. The major processes associated with the facility are as follows: The University of New Mexico (UNM) consists of steam boilers, various heating equipment, combined cycle natural gas turbines, a crematorium, emergency generators, above ground storage tank, chemical usage and unpaved parking lots.

Pursuant to 20.11.42.12.C.(1).(a) NMAC, the Department specifies, with this permit, terms and conditions upon the operation of this facility to assure compliance with all applicable requirements, as defined in 20.11.42 NMAC at the time this permit is issued or as specified in the schedule of compliance contained herein.

Permit Shield

Pursuant to 20.11.42.12.C.(9) NMAC, compliance with the conditions of this permit shall be deemed to be compliance with any applicable requirements existing as of the date of permit issuance and identified in Table 1. The requirements in Table 1 are applicable to this facility with specific requirements identified for individual emission units. Emission units with no applicable requirements are not shown in Table 1. The requirements in Table 1A are pending review from the United States Environmental Protection Agency and are therefore non-applicable under the federal permit shield. The Department has determined that the requirements in Table 2 as identified in the permit application are not applicable to this source.

This permit shield does not extend to administrative amendments, to minor permit modifications, to changes made under section 502(b)(10) of the federal Act, or to permit terms for which notice has been given to reopen or revoke all or part.

The Department deems compliance with applicable conditions of this operating permit to be in compliance with Authority to Construct (ATC) Permits #0490-RV1, 0087-M1, 1174, 1373, 1601-M1-RV1, 1643-M1, 1646, 1647, 1662-RV1, 1691, 1715-RV1, 1716, 1898, 1975-M1, 1976-M1, 1979, 1980-M1, 1981, 1982, 2008, 2038, 2135, 2141, 2176, 3019, 3020, 3137, and 3143, and Air Quality Construction Permits (AQCP) #1750-1AR, 1809-M1-2AR, 1852-M1-1AR, 1692-M1-1AR, 3255-M1, 3300, and 3299 and Source Registrations #0504-RV1, 0624, 0717, 1673, 1689, 1690, 1700, 1766, 1881, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1978, and 2167 and Fugitive Programmatic Dust Control Permit #P05-0006H.

Table 1: APPLICABLE REQUIREMENTS FOR THIS FACILITY

There may be other requirements than those listed here.

Applicable Requirements	Federally Enforceable	Entire Facility	Emission Unit Nos.
20.11.5 NMAC - Visible Air Contaminants This regulation limits visible emissions from stationary sources	X		083-EG-1, 21-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 053-EG-1, 057-EG-1, 058-EG-1, 060-EG-1, 072-EG-1, 153-EG-1, 116-EG-1A, 260-EG-2, 205-EG-1, 255-EG-1, 253-EG-1A, 195-EG-1, 112-EG-1, 227-EG-1, 266-EG-1, 034-EG-1, 262-CRM-1, 059-EG-1, 048-EG-1, 259-H-8, 194-EG-1, 249-EG-1, 024-EG-1, 234-EG-1A, 228-EG-1, 122-EG-1, 046-EG-1, 248-EG-1, 081-EG-1, 082-EG-1, 085-EG-1, 211-EG-2, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, 301-EG-1, 338-EG-1, 341-EG-1, 311A-EB-1, 311B-EB-1, 200-EG-1, 204-EG-1, 211-EG-3, 288-EG-1, 289-EG-1, 291-EG2, 302-EG-1A, 191-EG-1A, and 253-EG-2.

Applicable Requirements	Federally Enforceable	Entire Facility	Emission Unit Nos.
<p>20.11.8 NMAC - Ambient Air Quality Standards</p> <p>This regulation adopts the Federal and State ambient air quality standards.</p>	X	X	216-AST-1A, 083-EG-1, 021-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 053-EG-1, 057-EG-1, 060-EG-1, 072-EG-1, 153-EG-1, 116-EG-1A, 260-EG-2, 205-EG-1, 255-EG-1, 253-EG-1A, 195-EG-1, 112-EG-1, 227-EG-1, 266-EG-1, 034-EG-1, 262-CRM-1, 059-EG-1, 048-EG-1, 259-H-8, 194-EG-1, 249-EG-1, 024-EG-1, 234-EG-1A, 228-EG-1, 122-EG-1, 046-EG-1, 248-EG-1, 081-EG-1, 082-EG-1, 085-EG-1, 058-EG-1, 211-EG-2, 151-DL-4, 204-DL-2, 260-DL-1, 250-DL-1, 273-DL-1, 276-DL-1, 276-DL-2, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, 301-EG-1, 338-EG-1, 341-EG-1, 311A-EB-1, 311B-EB-1, 200-EG-1, 211-EG-3, 288-EG-1, 289-EG-1, 302-EG-1A, 191-EG-1A, 204-EG-1, 291-EG-2, and 253-EG-2.
<p>20.11.20 NMAC - Fugitive Dust Control</p> <p>This regulation requires the use of reasonable precautions to prevent particulate matter that is generated from becoming airborne, requires permits for disturbances exceeding ¼ acre, and requires controls on dirt roads.</p>	X	X	151-DL-4, 204-DL-2, 260-DL-1, 250-DL-1, 273-DL-1, 276-DL-1, and 276-DL-2.
<p>20.11.40 NMAC - Source Registration</p> <p>This regulation addresses registration of a stationary air pollution sources.</p>	X	X	211-EG-3, 048-EG-1, 259-H-8, 194-EG-1, 249-EG-1, 024-EG-1, 234-EG-1A, 228-EG-1, 122-EG-1, 046-EG-1, 248-EG-1, 081-EG-1, 082-EG-1, 211-EG-2, 341-EG-1, 311A-EB-1, and 311B-EB-1.
<p>20.11.41 NMAC -Authority-To-Construct</p> <p>This regulation addresses pre-construction permitting of stationary air pollution sources</p>	X	X	216-AST-1A, 083-EG-1, 021-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 053-EG-1, 057-EG-1, 058-EG-1, 060-EG-1, 072-EG-1, 153-EG-1, 085-EG-1, 116-EG-1A, 260-EG-2, 205-EG-1, 255-EG-1, 253-EG-1A, 195-EG-1, 112-EG-1, 227-EG-1, 266-EG-1, 034-EG-1, 262-CRM-1, 059-EG-1, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, 301-EG-1, 338-EG-1, 200-EG-1, 288-EG-1, 289-EG-1, 302-EG-1A, 191-EG-1A, 204-EG-1, 291-EG-2, and 253-EG-2.
<p>20.11.42 NMAC - Operating Permits</p> <p>This regulation addresses permitting of Title V major sources</p>	X	X	216-AST-1A, 083-EG-1, 021-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 053-EG-1, 057-EG-1, 060-EG-1, 072-EG-1, 153-EG-1, 116-EG-1A, 260-EG-2, 205-EG-1, 255-EG-1, 253-EG-1A, 195-EG-1, 112-EG-1, 227-EG-1, 266-EG-1, 034-EG-1, 262-CRM-1, 059-EG-1, 048-EG-1, 259-H-8, 194-EG-1, 249-EG-1, 024-EG-1, 234-EG-1A, 228-EG-1, 122-EG-1, 046-EG-1, 248-EG-1, 081-EG-1, 082-EG-1, 085-EG-1, 058-EG-1, 211-EG-2, 151-DL-4, 204-DL-2, 260-DL-1, 250-DL-1, 273-DL-1, 276-DL-1, 276-DL-2, 053-EG-1, 072-EG-1, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, 301-EG-1, 338-EG-1, 341-EG-1, 311A-EB-1, 311B-EB-1, 200-EG-1, 211-EG-3, 288-EG-1, 289-EG-1, 302-EG-1A, 191-EG-1A, 204-EG-1, 291-EG-2, and 253-EG-2.

Applicable Requirements	Federally Enforceable	Entire Facility	Emission Unit Nos.
<p>20.11.49 NMAC - Excess Emissions</p> <p>This regulation pertains to any source whose operation results in an emission of a regulated air pollutant, including fugitive emissions, in excess of the quality, rate, opacity or concentration specified by an air quality regulation or permit condition</p>	X	X	216-AST-1A, 083-EG-1, 021-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 053-EG-1, 057-EG-1, 060-EG-1, 072-EG-1, 153-EG-1, 116-EG-1A, 260-EG-2, 205-EG-1, 255-EG-1, 253-EG-1A, 195-EG-1, 112-EG-1, 227-EG-1, 266-EG-1, 034-EG-1, 262-CRM-1, 059-EG-1, 048-EG-1, 259-H-8, 194-EG-1, 249-EG-1, 024-EG-1, 234-EG-1A, 228-EG-1, 122-EG-1, 046-EG-1, 248-EG-1, 081-EG-1, 082-EG-1, 085-EG-1, 058-EG-1, 211-EG-2, 176-BLR-1, 176-BLR-2, 176-BLR-3, 176-BLR-4, 176-BLR-5, 176-BLR-6, 176-BLR-7, 338-BLR-1, 301-EG-1, 338-EG-1, 341-EG-1, 311A-EB-1, 311B-EB-1, 200-EG-1, 211-EG-3, 288-EG-1, 289-EG-1, 302-EG-1A, 191-EG-1A, 204-EG-1, 291-EG-2, and 253-EG-2.
<p>20.11.63 NMAC - New Source Performance Standards for Stationary Sources</p> <p>This regulation pertains to the national performance standards for stationary sources and incorporates the federal NSPS regulations</p>	X		116-BLR-1A, 116-BLR-2A, 116-TRB-1, and 116-TRB-2, 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 072-EG-1, 085-EG-1, 112-EG-1, 195-EG-1, 253-EG-1A, 176-BLR-1, 176-BLR-2, 176-BLR-3, 200-EG-1, 204-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, 302-EG-1A, 191-EG-1A, and 253-EG-2.
<p>20.11.65 NMAC - Volatile Organic Compounds</p> <p>This regulation pertains to sources of hydrocarbon vapors from facilities and sources not otherwise regulated or exempted by 40 CFR 60; including volatile organic compounds and petroleum liquids</p>	X		216-AST-1A
<p>20.11.68 NMAC - Incinerators and Crematories</p> <p>This regulation has an established standard for crematories.</p>	X		262-CRM-1
<p>20.11.90 NMAC - Source Surveillance; Administration and Enforcement</p> <p>This regulation pertains to source surveillance, performance tests and administration and enforcement regulations</p>	X	X	216-AST-1A, 083-EG-1, 021-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 060-EG-1, 153-EG-1, 116-EG-1A, 260-EG-2, 205-EG-1, 255-EG-1, 253-EG-1A, 195-EG-1, 112-EG-1, 227-EG-1, 266-EG-1, 034-EG-1, 262-CRM-1, 053-EG-1, 057-EG-1, 059-EG-1, 072-EG-1, 048-EG-1, 259-H-8, 194-EG-1, 249-EG-1, 024-EG-1, 234-EG-1A, 228-EG-1, 122-EG-1, 046-EG-1, 248-EG-1, 081-EG-1, 082-EG-1, 085-EG-1, 058-EG-1, 204-EG-1, 211-EG-2, 151-DL-4, 204-DL-2, 260-DL-1, 250-DL-1, 273-DL-1, 276-DL-1, 276-DL-2, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, 301-EG-1, 338-EG-1, 341-EG-1, 311A-EB-1, 311B-EB-1, 200-EG-1, 211-EG-3, 288-EG-1, 289-EG-1, 291-EG-2, 302-EG-1A, 191-EG-1A, and 253-EG-2.

Applicable Requirements	Federally Enforceable	Entire Facility	Emission Unit Nos.
<p>40 CFR 50 - National Ambient Air Quality Standards</p> <p>This regulation adopts Federal ambient air quality standards.</p>	X	X	<p>216-AST-1A, 083-EG-1, 021-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 053-EG-1, 057-EG-1, 060-EG-1, 072-EG-1, 153-EG-1, 116-EG-1A, 260-EG-2, 205-EG-1, 255-EG-1, 253-EG-1A, 195-EG-1, 112-EG-1, 227-EG-1, 266-EG-1, 034-EG-1, 262-CRM-1, 059-EG-1, 048-EG-1, 259-H-8, 194-EG-1, 249-EG-1, 024-EG-1, 234-EG-1A, 228-EG-1, 122-EG-1, 046-EG-1, 248-EG-1, 081-EG-1, 082-EG-1, 085-EG-1, 058-EG-1, 211-EG-2 151-DL-4, 204-DL-2, 260-DL-1, 250-DL-1, 273-DL-1, 276-DL-1, 276-DL-2, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, 301-EG-1, 338-EG-1, 341-EG-1, 311A-EB-1, 311B-EB-1, 200-EG-1, 211-EG-3, 288-EG-1, 289-EG-1, 291-EG-2, 302-EG-1A, 191-EG-1A, and 253-EG-2.</p>
<p>40 CFR 60 NSPS Subpart Dc - Standards of Performance For Small Industrial-Commercial-Institutional Steam Generating Units</p> <p>This regulation pertains to two boilers at UNM. These boilers were constructed after June 9, 1989 and have a design capacity of between 10 MMBtu/hr and 100 MMBtu/hr</p>	X		<p>116-BLR-1A, 116-BLR-2A, 176-BLR-1, 176-BLR-2, and 176-BLR-3.</p>
<p>40 CFR 60 NSPS Subpart GG -Standards of Performance For Stationary Gas Turbines</p> <p>This regulation pertains to one three turbines at UNM. These units were constructed after October 3, 1977 and have a heat input greater than 10 MMBtu/hr</p>	X		<p>116-TRB-1</p>
<p>40 CFR 60 Subpart KKKK - Standards of Performance for Stationary Combustion Turbines</p> <p>This regulation pertains to one turbine at UNM. This unit was constructed after February 18, 2005 and has heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the higher heating value of the fuel.</p>	X		<p>116-TRB-2</p>

Applicable Requirements	Federally Enforceable	Entire Facility	Emission Unit Nos.
<p>40 CFR 60 NSPS Subpart IIII --Standards of Performance For Stationary Compression Ignition Internal Combustion Engines</p> <p>This regulation is applicable to diesel engines that were ordered after July 11, 2005 and were manufactured after April 1, 2006 and are not a fire pump engines.</p>	X		053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 072-EG-1, 085-EG-1, 112-EG-1, 195-EG-1, 253-EG-1A, 200-EG-1, 204-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A.
<p>40 CFR 60 NSPS Subpart JJJJ -- Standards of Performance for Stationary Spark Ignition Internal Combustion Engines</p> <p>This regulation is applicable to spark ignition internal combustion engines (SI ICE) that commence construction after June 12, 2006; where the SI ICE was manufactured on or after January 1, 2009 for emergency engines with a maximum engine power greater than 19KW (25 HP).</p>	X		191-EG-1A and 253-EG-2.

Applicable Requirements	Federally Enforceable	Entire Facility	Emission Unit Nos.
<p>40 CFR 63 NESHAP Subpart CCCCCC-National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities</p> <p>This Regulation is applicable to Gasoline Dispensing Facilities (GDF). A GDF means any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine used solely for competition. These facilities include, but are not limited to, facilities that dispense gasoline into on- and off-road, street, or highway motor vehicles, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline-fueled engines and equipment.</p> <p>Based on the requested annual throughput for gasoline, this facility's monthly throughput would amount to equal to or greater than 10,000 but less than 100,000 gallons of gasoline. Therefore, the applicable requirements of 40 CFR Part 63, Subpart CCCCCC are §63.11116 and §63.11117 as well as Subpart A - General Provisions of 40 CFR Part 63.</p>	X		216-AST-1A

Applicable Requirements	Federally Enforceable	Entire Facility	Emission Unit Nos.
<p>40 CFR 98 - Mandatory Greenhouse Gas Reporting: Subpart A- General Provisions and Subpart C - General Stationary Fuel Combustion Sources</p> <p>This regulation establishes mandatory greenhouse gas reporting requirements and UNM is a facility has the aggregate maximum rated heat input capacity of the stationary combustion units at the facility is 30 MMBtu/h or greater</p>	X		116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 262-CRM-1, 259-H-8, 176-BLR-1, 176-BLR-2, 176-BLR-3, and 338-BLR-1.

Table 1A: APPLICABLE REQUIREMENTS FOR THIS FACILITY

The following regulations are pending review from the United States Environmental Protection Agency's and are therefore non-applicable under the federal permit shield.

Applicable Requirements	Locally Enforceable	Entire Facility	Emission Unit Nos.
<p>20.11.2 NMAC Fees*</p> <p>This regulation establishes annual emissions fees for sources with source registrations, authority-to-construct permits, and Title V operation permits.</p>	X	X	216-AST-1A, 083-EG-1, 021-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 053-EG-1, 057-EG-1, 060-EG-1, 072-EG-1, 153-EG-1, 116-EG-1A, 260-EG-2, 205-EG-1, 255-EG-1, 253-EG-1A, 195-EG-1, 112-EG-1, 227-EG-1, 266-EG-1, 034-EG-1, 262-CRM-1, 059-EG-1, 048-EG-1, 259-H-8, 194-EG-1, 249-EG-1, 024-EG-1, 234-EG-1A, 228-EG-1, 122-EG-1, 046-EG-1, 248-EG-1, 081-EG-1, 082-EG-1, 085-EG-1, 058-EG-1, 204-EG-1, 211-EG-2, 151-DL-4, 204-DL-2, 260-DL-1, 250-DL-1, 273-DL-1, 276-DL-1, 276-DL-2, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1, 301-EG-1, 338-EG-1, 341-EG-1, 311A-EB-1, 311B-EB-1, 200-EG-1, 211-EG-3, 288-EG-1, 289-EG-1, 302-EG-1A, 191-EG-1A, 291-EG-2, and 253-EG-2.

Applicable Requirements	Locally Enforceable	Entire Facility	Emission Unit Nos.
<p>20.11.47 NMAC - Emissions Inventory Requirements *</p> <p>This regulation requires sources to provide an emissions inventory to the Program on an annual basis</p>	X	X	<p>216-AST-1A, 083-EG-1, 021-EG-1, 116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 053-EG-1, 057-EG-1, 060-EG-1, 072-EG-1, 153-EG-1, 116-EG-1A, 260-EG-2, 205-EG-1, 255-EG-1, 253-EG-1A, 195-EG-1, 112-EG-1, 227-EG-1, 266-EG-1, 034-EG-1, 262-CRM-1, 059-EG-1, 048-EG-1, 259-H-8, 194-EG-1, 249-EG-1, 024-EG-1, 234-EG-1A, 228-EG-1, 122-EG-1, 046-EG-1, 248-EG-1, 081-EG-1, 082-EG-1, 085-EG-1, 058-EG-1, 204-EG-1, 211-EG-2, 151-DL-4, 204-DL-2, 260-DL-1, 250-DL-1, 273-DL-1, 276-DL-1, 276-DL-2, 176-BLR-1, 176-BLR-2, 176-BLR-3, 301-EG-1, 338-EG-1, 341-EG-1, 311A-EB-1, 311B-EB-1, 200-EG-1, 211-EG-3, 288-EG-1, 289-EG-1, 302-EG-1A, 191-EG-1A, 291-EG-2, and 253-EG-2.</p>

Table 2: The Department has determined that the following requirements identified in the Permit Application are not Applicable Requirements for this facility

{The applicant may have identified more or fewer requirements than are listed here.}

Applicable Requirements as identified in the Permit Application	Not Applicable For This Facility ⁽¹⁾	No Requirements ⁽²⁾
<p>20.11.43 NMAC Stack Height Requirements 20.11.43.6 NMAC - This regulation pertains to stack heights as used to evaluate air quality impacts. The stack heights for emission source at UNM Main Campus do not exceed heights that are considered to be good engineering practices.</p>	X	X
<p>20.11.60 NMAC Permitting in Non-Attainment Areas 20.11.60.2 NMAC - Source is not located in a nonattainment area</p>	X	X
<p>20.11.61 NMAC Prevention of Significant Deterioration 20.11.61.7.JJ(2) NMAC - any stationary source listed in Table 1 of 20.11.61.26 NMAC, which emits, or has the potential to emit 250 tons per year or more of any regulated new source review pollutants and UNM Main campus is not nor is it equipped with any named PSD Source Categories. The Main Campus PTE is less than 250 tpy of any regulated pollutant. The Main Campus had never had a PTE of greater than 250 tpy therefore a contemporaneous period has not been triggered and netting calculations are not required.</p>	X	X
<p>20.11.64 NMAC Emission Standards for Hazardous Air Pollutants for Stationary Sources 20.11.64.13 NMAC - UNM Main Campus is neither a listed source nor a major source for HAPs</p>	X	X
<p>20.11.67 NMAC Equipment, Emissions, Limitations 20.11.67.2A NMAC - This regulation limits emission from coal, oil, gas burning equipment. There is no coal burning equipment at UNM Main Campus. Most oil and gas burning equipment at the facility predates the effective date of this regulation and is not affected by this regulation. The heat rate of proposed or newly installed oil or gas burning do not meet the applicability requirements of this regulation.</p>	X	X
<p>40 CFR 61 Subpart I - National Emission Standards for Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered By Subpart H 40 CFR § 61.100 - This subpart establishes standards for radionuclides from non-DOE facilities. UNM is licensed by the NRC and this NSPS therefore does not apply.</p>	X	

(1) No existing or planned operation/activity at this facility triggers the applicability of these requirements.

(2) Although these regulations may provide guidance, they do not impose any specific requirements on the operation of the facility as described in this permit.

Total Emissions

The total emissions from this facility, excluding insignificant or trivial activities, are shown in the following table. Emission limitations for individual units are shown in section 3.2.

Total Regulated Pollutant Emissions from Entire Facility PTE:

Pollutant	Emissions (tons per year)
Nitrogen Oxides (NO _x)	138.05
Carbon Monoxide (CO)	160.53
Nitrogen Oxides + Volatile Organic Compounds (NO _x + VOC)	6.54
Total Suspended Particulates (TSP)	15.78
Particulate Matter (PM ₁₀)	15.5
Particulate Matter (PM _{2.5})	15.5
Volatile Organic Compounds (VOC)	52.81
Sulfur Dioxide (SO ₂)	31.42
Hazardous Air Pollutants (HAPs)	12.91

Table above is for information only, not an enforceable condition

Insignificant Activities Emissions from Entire Facility (for information only, not an enforceable condition):

Activities that meet the criteria of being insignificant or de minimis pursuant to this paragraph, do not trigger modification requirements under 20.11.41 NMAC or 20.11.42 NMAC are shown in the table below. The listed insignificant activities emissions in the below table are in addition to the listed Potential-To-Emit (PTE) and are for informational purposes only. Pursuant to Albuquerque/Bernalillo County Air Quality Control Regulations Title 20, Chapter 11, Part 42 (Part 42), Operating Permits, the Director of the Environmental Health Department (Department) may list certain activities located at major source as insignificant based on the activities' actual limitations, emission rates, or production rates and approved by the Administrator of the US Environmental Protection Agency (EPA). However, the Department may not consider any activity for which applicable requirements apply as insignificant, regardless of whether the activity meets the criteria as approved by EPA. The Facility is not required to notify the Department of changes that qualify under this section; however, the Facility shall maintain sufficient records to demonstrate compliance with the provisions of this section.

Emission Units	Process	Pollutant/Parameter (All Totaled)
216-AST-2A	Diesel storage tank (970 gallons)	VOC < 1 tpy
260-BLR-1 and 260-BLR-2	2.049 MMBtu/hr boilers from A-to-C Permit # 1715-RV1	NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy
259-H-8	3.85 MMBtu/hr furnace from A-to-C Permit #0717-JAR	CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy; NO _x < 1.2 tpy
308-BLR-1 and 308-BLR-2	0.49 MMBUT/hr boilers from A-to-C Permit #1691	NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy
308-BLR-3 and 308-BLR-4	2.01 MMBUT/hr boilers from A-to-C Permit #1691	NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy

308-BLR-5	1.47 MMBUT/hr boiler from A-to-C Permit #1691	NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy
301-H-XX	Twenty Four (24) Heaters with combined 2.84 MMBtu/hr from A-to-C Permit #1691	Combined: CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy; NO _x < 1.8 tpy Each: NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy
341-BLR-1	3.4 MMBUT/hr boiler from A-to-C Permit #0504-RV1	NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy
329-BLR-1, 329-BLR-2, and 329-BLR-3	4.05 MMBUT/hr boilers from REG #1673	SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy; NO _x < 2.5 tpy CO, < 2.1 tpy
332-BLR-1 and 333-BLR-1	0.72 MMBUT/hr boilers from REG #1689	NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy
337-BLR-1	0.97 MMBUT/hr boiler from REG #1689	NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy
339-BLR-1	4.00 MMBUT/hr boiler from REG #1689	SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy; NO _x < 2.4 tpy CO, < 2.1 tpy
332-H-1	Four (4) Heaters with combined 0.4 MMBtu/hr from REG #1689	NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy
307-BLR-1	0.96 MMBUT/hr boiler from REG #1690	NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy
307-BLR-1	3.34 MMBUT/hr boiler from REG #1690	CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy; NO _x < 1.4 tpy
307-H-1	2.22 MMBUT/hr heater from REG #1690	SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy; NO _x < 1.5 tpy CO, < 1.2 tpy
302-H-1	2.0 MMBUT/hr heater from Air Quality Construction Permit #1692-M1-1AR	NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy
302-BLR-1A	1.5 MMBUT/hr boiler from Air Quality Construction Permit #1692-M1-1AR	NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy
302-H-XX	Misc. External Combustion Equipment	Each: NO _x , CO, SO ₂ , VOC, PM ₁₀ , PM _{2.5} < 1 tpy

* The listed insignificant activities emissions in the above table are added to the portion of the PTE in the Table entitled "Total Emissions" which equals the total PTE for this source and are for informational purposes only.

PERMIT TERMS AND CONDITIONS

1.0 GENERAL CONDITIONS

1.1 The following permit terms and conditions are placed upon the permittee in accordance with 20.11.42.12.B.(2) NMAC and 20.11.42.12.C.(1).(b) NMAC.

1.1.1 The permittee shall abide by all terms and conditions of this permit, except as allowed under section 502(b)(10) of the federal Act. Any permit noncompliance is grounds for enforcement action and significant or repetitive noncompliance may result in termination of this permit. Additionally, noncompliance with federally enforceable conditions of this permit constitutes a violation of the federal Act.

1.1.2 It shall not be a defense for the permittee in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

1.1.3 If the Department determines that cause exists to modify, reopen and revise, revoke and reissue, or terminate this permit, this shall be done in accordance with 20.11.42.13.F NMAC.

1.1.4 The permittee shall furnish any information the Department requests in writing to determine if cause exists for reopening and revising, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. This information shall be furnished within the time period specified by the Department. Additionally, the permittee shall furnish, upon request by the Department, copies of records required by the permit to be maintained by the permittee.

1.1.5 A request by the permittee that this permit be modified, revoked and reissued, or terminated, or a notification by the permittee of planned changes or anticipated noncompliance, shall not stay any conditions of this permit.

1.1.6 This permit does not convey property rights of any sort, or any exclusive privilege.

1.2 The issuance of this permit, or the filing or approval of a compliance plan, does not relieve the permittee from civil or criminal liability for failure to comply with the state or federal Acts, or any applicable state or federal regulation or law. This condition is pursuant to 20.11.42.12.C.(1).(f) NMAC and New Mexico Air Quality Control Act NMSA 1978 74-2-2 through 74-2-23.

1.3 Severability Clause - If any section, paragraph, sentence, clause or word of this permit is for any reason held to be unconstitutional or otherwise invalid by any court, the decision shall not affect the validity of remaining provisions of permit #536. This condition is pursuant to 20.11.42.12.C.(1).(a).(iv) NMAC.

1.4 The permittee shall pay fees to the Department consistent with the fee schedule in 20.11.02 NMAC - Permit Fees. The fees will be assessed and invoiced separately from this permit. This condition is pursuant to 20.11.42.12.C.(1).(a).(v) NMAC.

1.5 A responsible official (as defined in 20.11.42 NMAC) shall certify the accuracy, truth and completeness of every report and compliance certification submitted to the Department as required by this permit. These certifications shall be part of each document. This condition is pursuant to 20.11.42.12.A.(5) NMAC.

1.6 Revocation or termination of this permit by the Department terminates the permittee's right to operate this facility. This condition is pursuant to 20.11.42.2.B.(2) NMAC.

1.7 Upon request by the Department, the permittee shall submit an emissions inventory for this facility.

This condition is pursuant to 20.11.42.12.C.(1).(a) NMAC.

1.8 The source will continue to comply with all applicable requirements. For applicable requirements that will become effective during the term of the permit, the source will meet such requirements on a timely basis. This condition is pursuant to 20.11.42.12.C.(6).(c) NMAC.

1.9 The conditions of Authority-to-Construct Permits #0490-RV1, 0087-M1, 1174, 1373, 1601-M1-RV1, 1643-M1, 1646, 1647, 1662-RV1, 1691, 1715-RV1, 1716, 1898, 1975-M1, 1976-M1, 1979, 1980-M1, 1981, 1982, 2008, 2038, 2135, 2141, 2176, 3019, 3020, 3143, 3137, and Air Quality Construction Permits # 1750-1AR, 1809-M1-2AR, 1852-M1-1AR, 1692-M1-1AR, 3255-M1, 3299, and 3300, and Source Registrations #0504-RV1, 0624, 0717, 1673, 1689, 1690, 1700, 1766, 1881, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1978, and 2167 are incorporated into this permit in addition to all other applicable requirements including emission limits.

2.0 FACILITY INFORMATION

The following conditions are placed upon the permittee pursuant to 20.11.42.12.C.(1).(g) NMAC.

2.1 All of the process equipment authorized for this facility is listed in the table(s) shown below (emission units that were identified as insignificant are not included):

Process Equipment Table for Steam Plant

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of Mfg. Equipment	Date of Installation	Rated Process Rate
176-BLR-1 (ATC #1601-M1-RV1)	Natural Gas Fired Boiler	Miura	LX-300SG	48S492816	2009	03.2011	12.4 MMBtu/hr
176-BLR-2 (ATC #1601-M1-RV1)	Natural Gas Fired Boiler	Miura	LX-300SG	48S402892	2010	03.2011	12.4 MMBtu/hr
176-BLR-3 (ATC #1601-M1-RV1)	Natural Gas Fired Boiler	Miura	LX-300SG	48S402893	2010	03.2011	12.4 MMBtu/hr

Process Equipment Table for Animal Research Facility Crematorium

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of Mfg. Equipment	Date of Installation	Rated Process Rate
262-CRM-1 (ATC #1982)	Natural Gas Fired ARF Crematorium	Advanced Combustion	CA-300-P	2-300P-02-2B	Unknown	1986	2 MMBtu/hr

Process Equipment Table for Ford Utilities Center

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of Mfg. Equipment	Date of Installation	Rated Process Rate
116-TRB-1 (ATC #1643-	Gas Turbine	Solar Turbine	Taurus 70	TG03014	6/2012 (core)	10.2004	7.5 MW

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of Mfg. Equipment	Date of Installation	Rated Process Rate
M1)							
116-TRB-2 (ATC #1643-M1)	Gas Turbine	Solar Turbine	Taurus 70	TG13437	2013	2013	7.7 MW
116-BLR-1A (ATC #1643-M1)	Boiler ¹	English	80SH250	230071	2003	11/2003	96.2 MM Btu/hr
116-BLR-2A (ATC #1643-M1)	Boiler ¹	English	80SH250	230072	2003	11/2003	96.2 MM Btu/hr

¹ Boiler units are designed to fire natural gas or fuel oil #2.

Process Equipment Table for External Combustion Equipment

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of Mfg. Equipment	Date of Installation	Rated Process Rate
338-BLR-1 (ATC #0490-RV1)	Boiler (Natural Gas)	Ajax	WNG 8000	49040	1997	1997	8.0 MMBtu/hr

Process Equipment Table for Emergency Internal Combustion Engines

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of Mfg. Equipment	Date of Installation	Rated Process Rate
021-EG-1 (ATC #1373)	Diesel Fired Emergency Generator	Detroit	R1237KO5	347425	March 1998	01/2000	910 hp
034-EG-1 (ATC #1981)	Natural Gas Fired Emergency Generator	International	V549	123676	1975	1975	100 hp
048-EG-1 (REG #624)	Diesel Fired Emergency Generator	Generac	5.0L	92460	1998	1998	166 hp
060-EG-1 (ATC #1646)	Diesel Fired Emergency Generator	Cummins	LTA10-G1	35047404	10/2001	11/2002	380 hp
083-EG-1 (ATC #1174)	Diesel Fired Emergency Generator	Generac	A5399.12.0 2	6d24- 297589	03/2000	03/2001	325 hp
153-EG-1 (ATC #1647)	Diesel Fired Emergency Generator	Cummins	QSX 15-G9 NR2	79059635	8/2004	2004	750 hp
205-EG-1 (ATC #1716)	Diesel Fired Emergency Generator	Kohler	300REOZV	776539	11/03	2004	462 hp
260-EG-2 (ATC #1715- RV1)	Natural Gas Fired Emergency Generator	Cummins	GTA-28	25289112	04/2004	2004	900 hp
266-EG-1 (ATC #1980-M1)	Diesel Fired Emergency Generator	Generac	UM353920 6	887033	1988	1988	240 hp
116-EG-1A (ATC #1662- RV1)	Natural Gas Fired Emergency Generator	Caterpillar	SR4	CTL00746	2003	2004	1052 hp
255-EG-1 (AQCP #1750- 1AR)	Natural Gas Fired Emergency Generator	GM	GM-8.1L	8.1L-08972	2004	2005	225 hp
253-EG-1A (AQCP #1809- M1-2AR)	Diesel Fired Emergency Generator	Cummins	QST30-G5	37224830	2006	2007	1490 hp (rated) 1102 hp (governed)
195-EG-1 (AQCP #1852- M1-1AR)	Diesel Fired Emergency Generator	Cummins	QSL9-G2	46562404	12/2005	2007	364 hp
204-EG-1 (ATC #3137)	Diesel Fired Emergency Generator	Cummins	QSB7- G5NR3	73611565	11/16/2013	7/23/2014	324 hp
112-EG-1 (ATC #1898)	Diesel Fired Emergency Generator	Caterpillar	C9 DITA	S9L01312	2007	2007	480 hp
227-EG-1 (ATC #1979)	Diesel Fired Emergency Generator	Cummins	V12-500- GS	5.0.40271	1973	1973	402 hp
194-EG-1 (REG #1700)	Diesel Fired Emergency Generator	Perkins	D50P2	U273145	2003	2003	67 hp
249-EG-1 (REG #1766)	Natural Gas Fired Emergency Generator	Ford	WSG- 10681- 6005-A	03 06 056796	5/2003	2005	137 hp

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of Mfg. Equipment	Date of Installation	Rated Process Rate
024-EG-1 (REG #1881)	Diesel Fired Emergency Generator	Cummins	4BT3.9-G1	45158032	3/1995	2007	88 hp
053-EG-1 (AQCP #3299)	Diesel Fired Emergency Generator	Caterpillar	C4.4	E5G00337	11/14/2016	03/28/2017	132 hp
057-EG-1 (AQCP #3255-M1)	Diesel Fired Emergency Generator	Caterpillar	C4.4	E3L01203	2016	3/28/2017	69 hp
072-EG-1 (AQCP #3300)	Diesel Fired Emergency Generator	Caterpillar	C9 ACERT	S9P0137	11/14/2016	03/29/2017	480 hp
059-EG-1 (ATC #2008)	Diesel Fired Emergency Generator	Cummins	4BTA3.9-G5	21820602	2007	12/2008	99 hp
234-EG-1A (REG #1968)	Diesel Fired Emergency Generator	Generac	2.4L	96954	2008	2009	32 hp
228-EG-1 (REG #1969)	Diesel Fired Emergency Generator	Allis Chalmers	DBGFC637-20JU	1825187	Pre 1975	1975	60 hp
122-EG-1 (REG #1970)	Diesel Fired Emergency Generator	Isuzu	QD-130-500	501056	1980	1980	102 hp
046-EG-1 (REG #1971)	Diesel Fired Emergency Generator	Cummins	6BT-5.9	44142265	1985	1985	166 hp
248-EG-1 (REG #1972)	Diesel Fired Emergency Generator	Onan	120DX-18R/LAA	L78019139	1977	1977	27 hp
081-EG-1 (REG #1973)	Natural Gas Fired Emergency Generator	Onan	15.ORTC-4R/13374T	087369440	1974	1974	27 hp
082-EG-1 (REG #1974)	Natural Gas Fired Emergency Generator	Onan	15.ORTC-4R/13374T	087369441	1973	1973	27 hp
085-EG-1 (ATC #1975-M1)	Diesel Fired Emergency Generator	Cummins	4BTAA3.3 G7	72009677	12/7/2012	05/20/2014	99 hp
058-EG-1 (ATC #1976-M1)	Diesel Fired Emergency Generator	Cummins	QSB5-G3 NR3	73610377	11/14/2013	7/19/2014	145 hp
211-EG-2 (REG #1978)	Natural Gas Fired Emergency Generator	Cummins/Ford	LSG-8751-6005-A	225335-22-RH	2001	2001	129 hp
301-EG-1 (ATC #1691)	Diesel Fired Emergency Generator	Cummins	NH 230GS	10492712	1975	1976	230 hp
338-EG-1 (ATC #0490-RV1)	Diesel Fired Emergency Generator	Cummins	LTA10-G1	34817648	4/1996	1997	380 hp
341-EG-1 (REG #0504-RV1)	Diesel Fired Emergency Generator	Cummins	LTA10-G1	34858330	1997	1997	380 hp
311A-EB-1 (REG #1690)	Natural Gas Fired Emergency Blower	Vanguard	303-447	9810221	1990s	1990s	16 hp
311B-EB-1 (REG #1690)	Natural Gas Fired Emergency Blower	Vanguard	303-447	95042811	1990s	1990s	16 hp

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of Mfg. Equipment	Date of Installation	Rated Process Rate
200-EG-1 (ATC #2038)	Diesel Fired Emergency Generator	Perkins	C6.6	CAT00C66 PN6D01225	5-14-2009	2010	206 hp
211-EG-3 (REG #2167)	Natural Gas Fired Emergency Generator	Kohler	30 RGZ	2026692	1-04-2005	7-13-2012	75 hp
288-EG-1 (ATC #2141)	Diesel Fired Emergency Generator	Cummins	QSB7-G3- NR3	73164867	9-2009	2011	250 hp
289-EG-1 (ATC #2176)	Diesel Fired Emergency Generator	Cummins	QLS 9-G3 NR3	73274655	7-11-2011	7-12-2012	399 hp
291-EG-2 (ATC #3143)	Diesel Fired Emergency Generator	Cummins	4BTAA3.3- G7	72010122	2-13-2013	2014	99 hp
302-EG-1A (AQCP #1692- M1-1AR)	Diesel Fired Emergency Generator	Cummins	QSK-50- G4-NR2	37224830	2009	2010	2220 hp (rated) 1848 hp (governed)
191-EG-1A (ATC #3019)	Natural Gas Fired Emergency Generator	Cummins	EH72	6002392	7-2005	8-2013	25 hp
253-EG-2 (ATC #3020)	Natural Gas Fired Emergency Generator	Cummins	250GFBC	GM12F268 5998	7-2012	10-2012	383 hp

Process Equipment Table for Above Ground Storage Tanks – UNM Automotive Center

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of Mfg. Equipment	Date of Installation	Rated Process Rate
216-AST-1A (ATC #0087- M1)	Gasoline storage tank (4,200 gallons)	Unknown	Unknown	Unknown	Unknown	1997	190,000 gal/yr throughput

Process Equipment Table for Unpaved Parking Lots

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of Mfg. Equipment	Date of Installation	Rated Process Rate
151-DL-4	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.36 VMT/hr
204-DL-2	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	11.9 VMT/hr
260-DL-1	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.27 VMT/hr
250-DL-1	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.17 VMT/hr
273-DL-1	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.11 VMT/hr
276-DL-1	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.30 VMT/hr
276-DL-2	Unpaved parking lot	N/A	N/A	N/A	N/A	N/A	0.28 VMT/hr

Process Equipment Table for Chemical Usage

Emission Unit	Unit Description	Manufacturer	Model Number	Serial Number	Date of Mfg. Equipment	Date of Installation	Rated Process Rate
CHEM ATC #2135	Chemical Usage	N/A	N/A	N/A	N/A	N/A	N/A

3.0 REQUIREMENTS FOR INDIVIDUAL EMISSIONS UNITS

Information regarding applicable requirements, emission limits, operational limitations and requirements, work practices, and monitoring, testing and recordkeeping requirements is provided below for each emissions unit or set of similar units.

3.1 Applicable Requirements for this facility are shown in Table 1. For the emission units found in the "Process Equipment" table in Condition 2.1, these units are subject to the unit-specific requirements that are referenced in Table 1. This condition is pursuant to 20.11.42.12.C.(1).(a) NMAC.

3.1.1 The replacement/substitution of the gas producer component, which is the integrated unit including the power turbine, combustor, and axial compressor is authorized provided that the replacement/substitution component does not increase the potential to emit (PTE) of Emission Units #116-TRB-1 and 116-TRB-2.

3.1.2 Emission Unit #116-TRB-1 is subject to Federal New Source Performance Standards (NSPS) 40 CFR 60 Subpart A General Provisions, and Subpart GG -- Standards of Performance for Stationary Gas Turbines. The permittee shall comply with both the notification requirements of Subpart A and the specific requirements of Subpart GG.

3.1.3 Emission Unit #116-TRB-2 is subject to Federal New Source Performance Standards (NSPS) 40 CFR 60 Subpart KKKK - Standards of Performance for Stationary Combustion Turbines. This unit is an affected facility with a heat input at peak load equal to or greater than 10.7 gigajoules per hour, based on the higher heating value of the fuel fire and has commenced construction, modification, or reconstruction after February 18th, 2005. Unit # 116-TRB-2 shall comply with all applicable requirements of 40 CFR Part 60, Subparts A and KKKK.

3.1.4 Emission Units #116-BLR-1A, 116-BLR-2A, 176-BLR-1, 176-BLR-2, and 176-BLR-3 are subject to Federal New Source Performance Standards (NSPS), Code of Federal Regulations (CFR), Title 40, Part 60, Subpart A - General Provisions, and Federal New Source Performance Standards (NSPS), Code of Federal Regulations (CFR), Title 40, Part 60, Subpart Dc - Standards of Performance for Small Industrial Commercial-Institutional Steam Generating Units, and Subpart A -- General Provisions. These units are affected facilities that were constructed, reconstructed, or modified after June 9, 1989 having a maximum design heat input capacities greater than 10 million Btu/hr but less than 100 million Btu/hr.

3.1.5 Emission Units # 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 072-EG-1, 085-EG-1, 112-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 253-EG-1A, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A are subject to the Federal New Source Performance Standards (NSPS), Code of Federal Regulations (CFR), Title 40, Part 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, and Subpart A -- General Provisions. Units # 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 072-EG-1, 085-EG-1, 112-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 253-EG-1A, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A commenced construction after July 11, 2005 and was manufactured after April 1, 2006. Accordingly, Units # 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 072-EG-1, 085-EG-1, 112-EG-1, 200-EG-1, 195-EG-1, 204-EG-1, 253-EG-1A, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A shall comply with all applicable requirements of 40 CFR Part 60, Subparts A and IIII.

3.1.6 Emission Unit #083-EG-1 shall only combust #2 low sulfur fuel.

3.1.7 Emission Unit #116-EG-1A shall be equipped with a catalytic converter to control NOx and CO.

3.1.8 Emission Units #116-BLR-1A and 116-BLR-2A shall be restricted to #2 diesel fuel consumption of 17,175 gallons per 12-month rolling period where the sulfur content of #2 diesel shall not exceed 0.5% by weight.

3.1.9 Emission Units #053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 072-EG-1, 085-EG-1, 112-EG-1, 200-EG-1, 195-EG-1, 204-EG-1, 253-EG-1A, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A the permittee shall meet the diesel fuel requirements as required by CFR Title 40 Part 60 Subpart IIII §60.4207(a). Additionally, effective October 1, 2010 the permittee shall meet the diesel fuel requirements as required by CFR Title 40 Part 60 Subpart IIII §60.4207(b).

3.1.10 Pursuant to CFR Title 40 Part 60 Subpart IIII §60.4211(a)(1),(2),and(3), for Emission Units #053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 072-EG-1, 085-EG-1, 112-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 253-EG-1A, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A the facility must operate and maintain the stationary CI internal combustion engines and control devices according to the manufacturer's emission-related written instructions, change only those emission-related settings that are permitted by the manufacturer, and meet the requirements of CFR Title 40 part 89, 94, and/or 1068 as they apply.

3.1.11 Emission Units # 053-EG-1, 057-EG-1, 058-EG-1, 072-EG-1, 085-EG-1, 195-EG-1, 204-EG-1, 253-EG-1A, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A are subject to the Federal National Emission Standards for Hazardous Air Pollutants (NESHAP), Code of Federal Regulations (CFR), Title 40, Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), and Subpart A - General Provisions since Emission Units # 053-EG-1, 057-EG-1, 058-EG-1, 072-EG-1, 085-EG-1, 112-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 253-EG-1A, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A are each an "affected source" that were manufactured after June 12, 2006 and are located at an area source of Hazardous Air Pollutants (HAPs). In accordance with 40 CFR 63.6590(c)(1), "an affected source that is a new or reconstructed stationary RICE located at an area source... must meet the requirements of this part by meeting the requirements of ...40 CFR Part 60 Subpart IIII, for compression engines."

3.1.12 Emission Unit #262-CRM-1 shall be used solely for cremating animal remains, parts and tissues thereof, and other items normally associated with the cremation process. In no instance shall the emissions of a crematory exceed federal requirements. In addition, Unit 1 shall not be used to destruct "pathological waste" as defined under 20.11.69.7.N. NMAC.

3.1.13 Emission Unit #216-AST-1A shall meet all applicable conditions of 40 CFR Part 63, Subpart CCCCC - National Emission Standards for Hazardous Air Pollutants for Source Categories: Gasoline Dispensing Facilities:

A. **EXISTING SOURCE COMPLIANCE DATES.** §63.11113(b) Existing sources must comply by January 10, 2011.

B. **GENERAL APPLICABLE REQUIREMENTS (§63.11116).**

1. You must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time.
2. §63.11116(a) requires that measures to be taken include, but are not limited to, the following:
 - a) Minimize gasoline spills;
 - b) Clean up spills as expeditiously as practicable;
 - c) Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use; [§63.11116(d) Portable gasoline containers that meet the requirements of 40 CFR Part 59, Subpart F, are considered acceptable for compliance with this requirement]; and

- d) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.
3. §63.11116(b) requires that records be made available within 24 hours of request by the department to document your gasoline throughput.

C. SUBMERGED FILLING OF GASOLINE STORAGE TANKS (§63.11117).

1. §63.11117(b) requires that except as specified in §63.11117(c), you must only load gasoline into storage tanks at your facility by utilizing submerged filling, as defined in §63.11132, and as specified in paragraph (b)(1) or paragraph (b)(2) of this section.
2. §63.11117(b)(1) requires submerged fill pipes installed on or before November 9, 2006, must be no more than 12 inches from the bottom of the storage tank. [A-BCAQCB regulation 20.11.65 NMAC requires submerged fill pipes to be no more than 6 inches from the bottom of the storage tank.]
3. §63.11117(b)(2) Submerged fill pipes installed after November 9, 2006, must be no more than 6 inches from the bottom of the storage tank.
4. §63.11117(b)(3) Submerged fill pipes not meeting the requirements of §63.11117(b)(1) or (b)(2) are allowed if the owner can demonstrate that the liquid level in the tank is always above the entire opening of the fill pipe. Documentation providing such demonstration must be made available for inspection by the Administrator's delegated representative during the course of a site visit.
5. §63.11117(c) Gasoline storage tanks with a capacity of < 250 gallons are not required to comply with the submerged fill requirements in paragraph (b) of this section.

3.1.14 Emission Units #151-DL-4, 204-DL-2, 260-DL-1, 250-DL-1, 273-DL-1, 276-DL-1, and 276-DL-2 shall maintain a fugitive dust control plan as provided under the Fugitive Programmatic Dust Control Permit #P05-0006H.

3.1.15 Emission Units #116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 262-CRM-1, 259-H-8, 176-BLR-1, 176-BLR-2, 176-BLR-3, and 338-BLR-1 are subject to Federal Mandatory Greenhouse Gas Reporting Rule 40 CFR 98 Subpart A General Provisions, and Subpart C General Stationary Fuel Combustion Sources. The permittee shall comply with both the requirements of Subpart A and the specific requirements of Subpart C.

3.1.16 Emission Units #191-EG-1A and 253-EG-2 are subject to the Federal New Source Performance Standards (NSPS), Code of Federal Regulations (CFR), Title 40, Part 60, Subpart JJJ Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, and Subpart A General Provisions since Emission Units #191-EG-1A and 253-EG-2 were manufactured after July 1, 2008. Accordingly, Emission Units #191-EG-1A and 253-EG-2 shall comply with all applicable requirements of 40 CFR Part 60, Subparts A and JJJJ.

3.1.17 Emission Units #191-EG-1A and 253-EG-2 are subject to the Federal National Emission Standards for Hazardous Air Pollutants (NESHAP), Code of Federal Regulations (CFR), Title 40, Part 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), and Subpart A General Provisions since Emission Units #191-EG-1A and 253-EG-2 are each an "affected source" that was manufactured after June 12, 2006 and is located at an area source of Hazardous Air Pollutants (HAPs). In accordance with 40 CFR 63.6590(c)(1), "an affected source that is a new or reconstructed stationary RICE located at an area source... must meet the requirements of this part by meeting the requirements of ...40 CFR Part 60 Subpart JJJJ, for spark ignition engines." The permittee shall comply with the specific requirements of Subpart JJJJ applicable to new stationary spark ignition internal combustion engines. In accordance with 40 CFR 60.4243(a), compliance shall be demonstrated by purchasing an engine certified to the emission standards in 40 CFR 60.4231(a) through (c) as applicable, for the same engine class and maximum engine power; and meet the requirements as specified in 40 CFR 1068, subpart A through D as the apply for owners/operators of RICE.

3.2 Emissions Limits

3.2.1 For the emission units found in the "Process Equipment" table found in 2.1, these units are subject to the following emissions limits during normal operation:

EMISSIONS LIMIT TABLE

Emission Unit Number	NO _x lb/hr	NO _x tpy	NMHC + NO _x lb/hr	NMHC + NO _x tpy	CO lb/hr	CO tpy	SO ₂ lb/hr	SO ₂ tpy	VOC lb/hr	VOC tpy	TSP lb/hr	TSP tpy	PM ₁₀ / PM _{2.5} lb/hr	PM ₁₀ / PM _{2.5} tpy	HAP lb/hr	HAP tpy
176-BLR-1 (ATC#1601-MI-RV1)	0.25	1.1	-	-	0.75	3.29	0.007	0.03	0.07	0.29	0.09	0.4	0.09	0.4	0.000954	0.00418
176-BLR-2 (ATC#1601-MI-RV1)	0.25	1.1	-	-	0.75	3.29	0.007	0.03	0.07	0.29	0.09	0.4	0.09	0.4	0.000954	0.00418
176-BLR-3 (ATC#1601-MI-RV1)	0.25	1.1	-	-	0.75	3.29	0.007	0.03	0.07	0.29	0.09	0.4	0.09	0.4	0.000954	0.00418
262-CRM-1 (ATC #1982)	1.18	2.59	-	-	0.54	1.18	2.08	4.56	0.05	0.11	0.12	0.24	0.12	0.24	0.00377	0.0082
116-TRB-1 (ATC #1643-M1)	7.6	33.2	-	-	9.2	40.4	1.4	6	2.6	11.6	0.57	2.5	0.57	2.5	0.087	0.38
116-TRB-2 (ATC #1643-M1)	7.8	34.2	-	-	9.5	41.6	1.2	5.4	2.72	11.9	0.52	2.26	0.52	2.26	0.078	0.34
116-BLR-1A (ATC #1643-M1) (Natural Gas)	3.81	16.69	-	-	4.89	21.42	1.53	6.69	1.15	5.06	0.81	3.56	0.81	3.56	0.0093	0.041
116-BLR-2A (ATC #1643-M1) (Natural Gas)	3.81	16.69	-	-	4.89	21.42	1.53	6.69	1.15	5.06	0.81	3.56	0.81	3.56	0.0093	0.041
083-EG-1 (ATC #1174)	8.9	0.9	-	-	1.5	0.15	0.67	0.07	0.64	0.06	0.42	0.04	-	-	0.017	0.0017
021-EG-1 (ATC #1373)	28.8	7.2	-	-	6.4	1.6	0.1	0.025	0.9	0.23	0.6	0.15	-	-	0.028	0.0069

Emission Unit Number	NO _x lb/hr	NO _x tpy	NMHC + NO _x lb/hr	NMHC + NO _x tpy	CO lb/hr	CO tpy	SO ₂ lb/hr	SO ₂ tpy	VOC lb/hr	VOC tpy	TSP lb/hr	TSP tpy	PM ₁₀ / PM _{2.5} *** lb/hr	PM ₁₀ / PM _{2.5} *** tpy	HAP lb/hr	HAP tpy
060-EG-1 (ATC #1646)	11.78	1.2	-	-	11.78	1.2	0.78	0.078	0.95	0.1	0.84	0.084	0.84	0.084	0.019	0.0019
153-EG-1 (ATC #1647)	18	1.8	-	-	18	1.8	3.03	0.30	0.53	0.053	1.65	0.17	1.65	0.17	0.023	0.0023
116-EG-1A (ATC #1662-RV1)	5	0.5	-	-	10.38	1	0.0048	0.00048	0.49	0.049	0.081	0.008	0.081	0.008	7.4	0.74
260-EG-2 (ATC #1715-RV1)	21.7	2.17	-	-	21.7	2.2	0.005	0.0005	0.2	0.02	0.08	0.008	0.08	0.008	6.3	0.63
205-EG-1 (ATC #1716)	14.32	1.4	-	-	3.09	0.31	0.95	0.10	1.14	0.11	1.02	0.102	1.02	0.102	0.024	0.0024
255-EG-1 (AQCP #1750-1AR)	5.76	0.58	-	-	4.85	0.49	0.03	0.003	0.21	0.021	0.02	0.0021	0.02	0.0021	1.6	0.16
253-EG-1A (AQCP #1809-M1-2AR)	16.62	1.7	-	-	2.23	0.22	0.24	0.024	0.22	0.022	0.29	0.029	0.29	0.029	0.025	0.0025
195-EG-1 (AQCP #1852-M1-1AR)	5.54	0.55	-	-	6.82	0.68	0.75	0.075	0.80	0.08	0.32	0.032	0.32	0.032	0.019	0.0019
204-EG-1* (ATC #3137)	*	*	2.14	0.21	1.86	0.19	0.66	0.066	*	*	0.16	0.016	0.16	0.016	0.017	0.0017
112-EG-1 (ATC #1898)	5.27	0.53	-	-	0.49	0.049	0.98	0.1	0.13	0.013	0.07	0.007	0.07	0.007	0.024	0.0024
227-EG-1 (ATC #1979)	12.46	1.2	-	-	2.69	0.27	0.82	0.082	0.99	0.1	0.88	0.088	0.88	0.088	0.021	0.0021
266-EG-1 (ATC #1980-M1)	7.44	0.74	-	-	1.60	0.16	0.49	0.049	0.75	0.075	0.53	0.053	0.53	0.053	0.012	0.0012
034-EG-1 (ATC #1981)	9.15	0.92	-	-	15.41	1.5	0.002	0.0002	0.12	0.012	0.081	0.008	0.081	0.008	3.2	0.32
057-EG-1 (AQCP #3255-M1)	*	*	0.53	0.05	0.56	0.06	0.14	0.01	*	*	0.05	0.005	0.05	0.005	*	*

Emission Unit Number	NO _x lb/hr	NO _x tpy	NMHC + NO _x lb/hr	NMHC + NO _x tpy	CO lb/hr	CO tpy	SO ₂ lb/hr	SO ₂ tpy	VOC lb/hr	VOC tpy	TSP lb/hr	TSP tpy	PM ₁₀ / PM _{2.5} *** lb/hr	PM ₁₀ / PM _{2.5} *** tpy	HAP lb/hr	HAP tpy
059-EG-1* (ATC #2008)	*	*	1.22	0.12	0.08	0.008	0.2	0.02	*	*	0.02	0.002	0.02	0.002	0.005	0.0005
048-EG-1 (REG #624)	5.15	1.3	-	-	1.11	0.28	0.34	0.085	0.41	0.1	0.37	0.091	-	-	0.0085	0.0021
194-EG-1 (REG #1700)	0.6	0.060	-	-	0.7	0.070	0.1	0.01	0.03	0.003	0.02	0.002	0.02	0.002	0.0034	0.00034
249-EG-1 (REG #1766)	3.5	0.35	-	-	2.17	0.22	0.02	0.002	0.27	0.027	0.01	0.001	0.01	0.001	0.96	0.096
024-EG-1 (REG #1881)	2.67	0.27	-	-	2.67	0.27	0.18	0.018	0.21	0.021	0.19	0.019	0.19	0.019	0.0045	0.00045
234-EG-1A (REG #1968)	0.99	0.1	-	-	0.21	0.021	0.07	0.007	0.08	0.008	0.07	0.007	0.07	0.007	0.0016	0.00016
228-EG-1 (REG #1969)	1.86	0.19	-	-	0.4	0.04	0.12	0.012	0.15	0.015	0.13	0.013	0.13	0.013	0.0031	0.00031
122-EG-1 (REG #1970)	3.16	0.32	-	-	0.68	0.068	0.21	0.021	0.25	0.025	0.22	0.022	0.22	0.022	0.0052	0.00052
046-EG-1 (REG #1971)	5.15	0.51	-	-	1.11	0.11	0.34	0.034	0.41	0.041	0.37	0.037	0.37	0.037	0.0085	0.00085
248-EG-1 (REG #1972)	0.84	0.084	-	-	0.18	0.018	0.06	0.006	0.07	0.007	0.06	0.006	0.06	0.006	0.0014	0.00014
081-EG-1 (REG #1973)	0.54	0.054	-	-	0.9	0.09	0.00014	0.000014	0.01	0.001	0.0047	0.00047	0.0047	0.00047	0.19	0.019
082-EG-1 (REG #1974)	0.54	0.054	-	-	0.9	0.09	0.00014	0.000014	0.01	0.001	0.0047	0.00047	0.0047	0.00047	0.19	0.019
085-EG-1* (ATC #1975-M1)	*	*	0.76	0.076	0.81	0.081	0.2	0.02	*	*	0.07	0.007	0.07	0.007	0.7	0.07
058-EG-1* (ATC #1976-M1)	*	*	0.96	0.10	1.18	0.12	0.30	0.03	*	*	0.07	0.007	0.07	0.007	1.0	0.1
211-EG-2 (REG #1978)	2.57	0.26	-	-	4.32	0.43	0.00068	0.000068	0.034	0.0034	0.023	0.0023	0.023	0.0023	0.91	0.091

Emission Unit Number	NO _x lb/hr	NO _x tpy	NMHC + NO _x lb/hr	NMHC + NO _x tpy	CO lb/hr	CO tpy	SO ₂ lb/hr	SO ₂ tpy	VOC lb/hr	VOC tpy	TSP lb/hr	TSP tpy	PM ₁₀ / PM _{2.5} *** lb/hr	PM ₁₀ / PM _{2.5} *** tpy	HAP lb/hr	HAP tpy
338-BLR-1 (ATC #0490-RV1)	0.64	2.8	-	-	0.54	2.37	0.0038	0.018	0.04	0.18	0.05	0.22	0.05	0.22	0.00055	0.0024
301-EG-1 (ATC #1691)	7.1	1.1	-	-	7.1	1.1	0.5	0.075	0.6	0.09	0.5	0.075	0.5	0.08	0.012	0.0018
338-EG-1 (ATC #0490-RV1)	12	1.2	-	-	2.5	0.25	0.8	0.08	1	0.1	0.84	0.084	0.84	0.08	0.019	0.0019
341-EG-1 (REG #0504-RV1)	8.68	0.87	-	-	1.87	0.19	0.57	0.057	-	-	0.62	0.062	0.62	0.062	0.018	0.0018
311A-EB-1 (REG #1690)	0.6	0.09	-	-	1.1	0.17	0.0002	0.00003	0.01	0.0015	0.003	0.0004	0.003	0.0004	0.11	0.017
311B-EB-1 (REG #1690)	0.6	0.09	-	-	1.1	0.17	0.0002	0.00003	0.01	0.0015	0.003	0.0004	0.003	0.0004	0.11	0.017
200-EG-1* (ATC #2038)	*	*	1.4	0.14	1.2	0.12	0.42	0.042	*	*	0.07	0.007	0.07	0.007	0.011	0.0011
211-EG-3 (REG #2167)	1.23	0.12	-	-	2.02	0.20	0.0003	0.00003	0.02	0.002	0.005	0.0005	0.005	0.0005	0.53	0.053
288-EG-1* (ATC #2141)	*	*	1.64	0.16	0.36	0.036	0.51	0.051	*	*	0.08	0.008	0.08	0.008	0.013	0.0013
289-EG-1* (ATC #2176)	*	*	2.64	0.26	2.27	0.23	0.82	0.082	*	*	0.11	0.011	0.11	0.011	0.02	0.002
291-EG-2* (ATC #3143)	*	*	0.76	0.076	0.81	0.081	0.20	0.02	*	*	0.06	0.006	0.06	0.006	0.005	0.0005
302-EG-1A* (AQCP #1692-M1-IAR)	*	*	19.4	4.9	10.6	2.7	0.75	0.19	*	*	0.61	0.15	0.61	0.15	0.068	0.017
216-AST-1A (ATC #0087-M1)	-	-	-	-	-	-	-	-	-	0.022	-	-	-	-	-	0.000286
191-EG-1A** (ATC #3019)	**	**	0.33	0.033	25.02	2.5	0.0001	0.00001	**	**	0.002	0.0002	0.002	0.0002	0.18	0.018
253-EG-2 (ATC #3020)	1.67	0.17	*	*	3.35	0.34	0.0018	0.00018	0.83	0.083	0.03	0.003	0.03	0.003	2.7	0.27

Emission Unit Number	NO _x lb/hr	NO ₂ tpy	NMHC + NO _x lb/hr	NMHC + NO _x tpy	CO lb/hr	CO tpy	SO ₂ lb/hr	SO ₂ tpy	VOC lb/hr	VOC tpy	TSP lb/hr	TSP tpy	PM ₁₀ / PM _{2.5} ^{***} lb/hr	PM ₁₀ / PM _{2.5} ^{***} tpy	HAP lb/hr	HAP tpy
053-EG-1 (AQCP #3299)	*	*	0.9	0.09	1.08	0.11	0.27	0.03	*	*	0.06	0.006	0.06	0.006	-	-
072-EG-1 (AQCP #3300)	*	*	3.17	0.32	2.75	0.28	0.98	0.10	-	-	0.16	0.022	0.16	0.02	-	-
151-DL-4	-	-	-	-	-	-	-	-	-	-	0.21	0.021	0.21	0.021	-	-
204-DL-2	-	-	-	-	-	-	-	-	-	-	6.9	0.704	6.9	0.704	-	-
260-DL-1	-	-	-	-	-	-	-	-	-	-	0.15	0.0157	0.15	0.0157	-	-
250-DL-1	-	-	-	-	-	-	-	-	-	-	0.1	0.00995	0.1	0.00995	-	-
273-DL-1	-	-	-	-	-	-	-	-	-	-	0.07	0.00679	0.07	0.00679	-	-
276-DL-1	-	-	-	-	-	-	-	-	-	-	0.18	0.0179	0.18	0.0179	-	-
276-DL-2	-	-	-	-	-	-	-	-	-	-	0.16	0.0165	0.16	0.0165	-	-
CHEM	-	-	-	-	-	-	-	-	-	17.4	-	-	-	-	-	9.4
	255.78	138.05	35.85	6.54	221.72	160.53	25.38	31.42	20.39	52.81	22.75	15.79	21.41	15.5	26.7	12.91

* This is an emergency generator that is subject to 40 CFR 60 Subpart IIII and the NO_x standard is based on a NMHC+NO_x standard.

** This is an emergency generator that is subject to 40 CFR 1054.105(a) and is required to meet a combined NMHC+NO_x standard.

*** PM = TSP = PM₁₀ + PM_{2.5}

3.2.1.1 Steam Plant Boiler Emission Limit Requirements

3.2.1.1.1 Emission Units #176-BLR-1, 176-BLR-2, and 176-BLR-3 shall not cause or allow visible air emissions to exceed 20% opacity during any 6-minute timed average pursuant to 20.11.5.12 NMAC.

3.2.1.2 ARF Crematorium Emission Limit Requirements

3.2.1.2.1 Emission Unit #262-CRM-1 shall not cause or allow visible air emissions to exceed 5 percent opacity during any time interval including startup and shutdown pursuant to 20.11.5.13.A NMAC.

3.2.1.2.2 Pursuant to 20.11.68.200.C. NMAC, Emission Unit #262-CRM-1 shall not discharge particulate matter into the atmosphere in excess of 0.08 grains per standard cubic foot of dry exhaust gas corrected to 12 percent of carbon dioxide (CO₂) at standard conditions. In measuring the combustion contaminants from the crematory unit, the carbon dioxide (CO₂) produced by combustion of any liquid or gaseous fuel shall be excluded from the correction to 12% of carbon dioxide (CO₂). In no instance shall the emissions of a crematory exceed federal requirements. Compliance with the pound per hour and ton per year particulate emission limits, shall be shown by meeting the 5 percent opacity standard and 0.08 grains standard stated in Authority-To-Construct Permit #1982 (ATC #1982).

3.2.1.3 Ford Utilities Emission Limit Requirements

3.2.1.3.1 Emission Units #116-TRB-1 and 116-TRB-2 VOC and PM lb/hr emission rates are for informational purposes. Compliance with the VOC and PM emission limits shall be based on the verification of burning pipeline quality natural gas. Tons per year (tpy) emissions are for annual fee purposes.

3.2.1.3.2 Emission Units #116-TRB-1 and 116-TRB-2 CO lb/hr emission rate shall be based on the maximum tested lb/hr emission rate determined in Condition 6 (b) or 6 (c) of Authority to Construct Permit #1643-M1 (ATC #1643-M1). Compliance with Emission Units #116-TRB-1 and 116-TRB-2 CO tpy emissions shall be determined by the following equation:

$$\text{CO (tpy)} = \frac{(\text{lb/hr}) * (\text{Annual Hours of Operation})}{2000 \text{ lbs/ton}}$$

Where,

lb/hr = Maximum tested CO lb/hr emission rate determined in Condition 6 (b), 6 (c), or 6 (e) of ATC #1643-M1.

3.2.1.3.3 In accordance with 20.11.5.12 NMAC, Emission Units #116-TRB-1 and 116-TRB-2 each shall not cause or allow visible air contaminant emissions that exceed an opacity of 20 percent, 6-minute timed average.

3.2.1.3.4 Emission Unit #116-TRB-1 shall not exceed the more stringent of the allowable NO_x emission rate as specified in 40 CFR §60.332 (a) (2) or the lb/hr emission rate as specified in Condition 2 (a) of ATC # 1643-M1.

3.2.1.3.5 Emission Unit #116-TRB-2 shall not exceed the more stringent of the allowable NO_x emission rate as specified in 40 CFR §60.4320 (a) and Table 1 to 40 CFR § 60 Subpart KKKK or the lb/hr emission rate as specified in condition 2 (a) of ATC # 1643-M1.

3.2.1.3.6 In accordance with 40 CFR §60.332 (a)(2) and 40 CFR §60.332 (a)(3), Emission Units #116-TRB-1 of ATC #1643-M1 shall not cause to be discharged into the atmosphere any gases which contain nitrogen oxides in excess of:

$$\text{STD} - \frac{0.0150 (14.4)}{Y} + F$$

Where,

STD = Allowable NO_x emissions (percent by volume at 15 percent oxygen on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measure at actual peak load for unit # 1. The value of Y shall not exceed 14.4 kilojoules per watt-hour.

F = NO_x emission allowance for fuel-bound nitrogen as defined in the table below.

Fuel-bound Nitrogen (Percent by weight)	F (NO _x percent by volume)
N ≤ 0.015	0
0.015 < N ≤ 0.1	0.04 (N)
0.1 < N ≤ 0.25	0.004 + 0.0067 (N-0.1)
N > 0.25	0.005

3.2.1.3.7 In accordance with 40 CFR §60.4320 (a) and Table 1 to 40 CFR §60 Subpart KKKK, Emission Unit #116-TRB-2 shall not cause to be discharged into the atmosphere any gases which contain nitrogen oxides in excess of 2 ppm at 15 percent O₂, or 150 ng/J of useful output (1.2 lb/MWh).

3.2.1.3.8 If Emission Units #116-TRB-1 and 116-TRB-2 use a common steam header for the heat recovery steam generator

system, the permittee shall comply with the requirements of 40 CFR §60.4333 to determine compliance with the NO_x emission limits.

3.2.1.3.9 Emission Units #116-TRB-1 and 116-TRB-2 compliance with the NO_x tpy emissions shall be determined by the following equation:

$$\text{NO}_x \text{ (tpy)} = \frac{(\text{lb/hr}) * (\text{Annual Hours of Operation})}{2000 \text{ lbs/ton}}$$

Where,

lb/hr = Average tested NO_x lb/hr emission rate determined in Condition 6 (a), 6 (c), or 6 (d) of ATC #1643-M1

3.2.1.3.10 Emission Units #116-TRB-1 shall not exceed the more stringent of the allowable SO₂ emission rate as specified in 40 CFR §60.333 or the lb/hr emission rate as specified in Condition 2 (a) of ATC #1643-M1. Emission Units #116-TRB-1 shall comply with one or the other of the following conditions:

- i. In accordance with 40 CFR §60.333 (a), Emission Units #116-TRB-1 shall not cause to be discharged into the atmosphere, any gases which contain sulfur dioxide in excess of 0.015% by volume at 15% oxygen and on a dry basis.
- ii. In accordance with 40 CFR §60.333 (b), Emission Units #116-TRB-1 shall not burn any fuel that contains sulfur in excess of 0.8% by weight.

3.2.1.3.11 Emission Unit #116-TRB-2 shall not exceed the SO₂ emission rate as specified in 40 CFR §60.4330(a) or the lb/hr emission rate as specified in Condition 2 (a) of ATC #1643-M1. In accordance with 40 CFR §60.4330 (a), Unit #116-TBR-2 shall meet the emission limits for sulfur dioxide (SO₂) by complying with one or the other of the following conditions:

- i. Shall not cause to be discharged into the atmosphere any gases which contain SO₂ in excess of 110 nanograms per Joule (ng/J) (0.90 pounds per megawatt-hour (lb/MWh)) gross output.
- ii. Shall not burn any fuel that contains total potential sulfur emissions in excess of 26 ng SO₂ per Joule (0.06 lb SO₂ per MMBtu heat input).

3.2.1.3.12 Emission Units #116-BLR-1A and 116-BLR-2A shall not exceed the NO_x lb/hr emission rate stated in Condition 2 (a) of ATC #1643-M1. Compliance with the NO_x lb/hr emission rate shall be based on the maximum tested lb/hr emission rate determined in Condition 6 (e) or 6 (f) of ATC #1643-M1. Compliance with the NO_x tpy emissions utilizing natural gas as the fuel shall be determined by the following equation:

$$\text{NO}_x \text{ (tpy)} = \frac{(\text{lb/hr}) * (\text{Annual Hours of Operation})}{2000 \text{ lbs/ton}}$$

Where,

lb/hr = Maximum tested NO_x lb/hr emission rate determined in Condition 6 (e) or 6 (f) of ATC #1643-M1

3.2.1.3.13 Emission Units #116-BLR-1A and 116-BLR-2A shall not exceed the CO lb/hr emission rate stated in Condition 2 (a) of ATC #1643-M1. Compliance with the CO lb/hr emission rate shall be based on the maximum tested lb/hr emission rate determined in Condition 6 (e) or 6 (f) of #1643-M1. Compliance with the CO tpy emissions utilizing natural gas as the fuel shall be determined by the following equation;

$$\text{CO (tpy)} = \frac{(\text{lb/hr}) * (\text{Annual Hours of Operation})}{2000 \text{ lbs/ton}}$$

Where,

lb/hr = Maximum tested CO lb/hr emission rate determined in Condition 6 (e) or 6 (f) of ATC #1643-M1

3.2.1.3.14 Emission Units #116-BLR-1A and 116-BLR-2A compliance with the VOC lb/hr emission rates shall be based

on the verification of burning pipeline quality natural gas and compliance with PM lb/hr emission rates shall be based on compliance with Condition 2 (o) of ATC #1643-M1.

3.2.1.3.15 In accordance with 20.11.5.12 NMAC, Emission Units #116-BLR-1A and 116-BLR-2A shall not cause or allow visible air contaminant emissions that exceed an opacity of 20 percent, 6-minute timed average while combusting natural gas.

3.2.1.3.16 In accordance with 40 CFR §60.43(c), Emission Units #116-BLR-1A and 116-BLR-2A shall not cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity, 6-minute timed average, except for one 6-minute period per hour of not more than 27 percent opacity while combusting # 2 diesel fuel. Pursuant to 40 CFR §60.43(d), these opacity standards apply all times, except during periods of startup, shutdown, or malfunction.

3.2.1.4 Emergency Internal Combustion Engines Emission Limit Requirements

3.2.1.4.1 Emission Units #034-EG-1, 116-EG-1A, 249-EG-1, 260-EG-2, 211-EG-2, 211-EG-3, 255-EG-1, 081-EG-1, 082-EG-1, 191-EG-1A, and 253-EG-2 shall not cause or allow visible air emissions to exceed 5 percent opacity for any three (3) minute timed average, except for the initial 10 seconds after startup pursuant to 20.11.5.13.B NMAC.

3.2.1.4.2 Emission Units #021-EG-1, 024-EG-1, 046-EG-1, 048-EG-1, 053-EG-1, 057-EG-1, 058-EG-1, 072-EG-1, 085-EG-1, 060-EG-1, 083-EG-1, 112-EG-1, 195-EG-1, 153-EG-1, 204-EG-1, 205-EG-1, 194-EG-1, 227-EG-1, 253-EG-1A, 266-EG-1, 059-EG-1, 234-EG-1A, 228-EG-1, 122-EG-1, 248-EG-1, 301-EG-1, 338-EG-1, 341-EG-1, 291-EG-2, 200-EG-1, 288-EG-1, 289-EG-1, and 302-EG-1A shall not cause or allow visible air emissions to exceed 20 percent opacity for any six (6) minute timed average pursuant to 20.11.5.13.C NMAC. During the first twenty (20) minutes of cold start-up, the visible emissions shall not exceed 40 percent opacity for any (6) minute timed average and no increase of load shall be applied so as to cause an emission having an opacity greater than 40 percent during any time interval pursuant to 20.11.5.13.C NMAC.

3.2.1.4.3 In accordance with 40CFR 60, Subpart III §60.4205(b), Emission Units #053-EG-1, 057-EG-1, 059-EG-1, 072-EG-1, 112-EG-1, 195-EG-1, 200-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A shall comply with the emission standards in 40 CFR 89.112(a) for the maximum permitted engine power. Emission Units #057-EG-1, 059-EG-1, 112-EG-1, 200-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A shall not exceed the more stringent of the allowable CO, NMHC+NO_x, and PM emission standards in 40 CFR 89.112(a) for the maximum permitted engine power or the pound per hour (lb/hr) and opacity emissions limits as specified in Condition 2(a) of AQCP # 3299 (053-EG-1), AQCP # 3255-M1 (057-EG-1), ATC # 2008 (059-EG-1), AQCP # 3300 (072-EG-1), ATC # 1898 (112-EG-1), ATC #2038 (200-EG-1), ATC #2141 (288-EG-1), ATC #2176 (289-EG-1), and AQCP #1692-M1-1AR (302-EG-1A).

3.2.1.4.4 For Emission Units #059-EG-1, 200-EG-1, 288-EG-1, 289-EG-1, and 302-EG-1A, compliance with NMHC+NO_x pound per hour (lb/hr) emissions limits, shall be shown by meeting the requirements of CFR Title 40 Part 60 Subpart III §60.4211(c). Compliance with CO, TSP, PM₁₀ and PM_{2.5} pound per hour (lb/hr) limits shall be used to determine tpy emissions.

3.2.1.4.5 Emission Units #311A-EB-1 and 311B-EB-1 shall not cause or allow visible air emissions to exceed 20% opacity during any 6-minute timed average pursuant to 20.11.5.12 NMAC.

3.2.1.4.6 In accordance with 40 CFR 60, Subpart JJJ §60.4233(a), for stationary spark ignited engines manufactured after July 1, 2008, Emission Unit #191-EG-1A shall comply with the emission standards in 40 CFR 60.423 l(a) for the maximum permitted engine power. Emission Unit #191-EG-1A shall not exceed the more stringent of the allowable CO and NO_x+NMHC, emission standards in 40 CFR 1054.105(a) for the maximum permitted engine power or the pound per hour (lb/hr) emission limits as specified in Condition 3.2.1 in the table above.

3.2.1.4.7 In accordance with 40 CFR 60, Subpart JJJJ, for stationary spark ignited engines manufactured after July 1, 2008, Emission Unit #253-EG-2 shall comply with the emission standards in 40 CFR 60.4233(c) for the maximum permitted engine power. Emission Unit #253-EG-2 shall not exceed the more stringent of the allowable CO and NO_x, and VOC, emission standards in 40 CFR 60 Subpart JJJJ for the maximum permitted engine power or the pound per hour (lb/hr)

emission limits as specified in Condition 3.2.1 in the table above.

3.2.1.4.8 For Emission Unit #191-EG-1A, compliance with CO and NO_x+NMHC, pound per hour (lb/hr) emission limits, shall be shown by meeting the requirements of 40 CFR 1054.105(a).

3.2.1.4.9 For Emission Unit #253-EG-2, compliance with CO, NO_x, and VOC, pound per hour (lb/hr) emission limits, shall be shown by meeting the requirements of 40 CFR 1054.105(a).

3.2.1.4.10 For Emission Units # 058-EG-1, 085-EG-1, and 204-EG-1, in accordance with 40CFR 60, Subpart IIII §60.4205(b), owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

3.2.1.4.11 For Emission Units # 053-EG-1, 057-EG-1, 072-EG-1, and 291-EG-2, in accordance with 40 CFR 60 Subpart IIII §60.4205(b), owner and operators of 2007 model year and later emergency stationary diesel-powered engines with a displacement of less than 30 liters per cylinder that are not fire engines must comply with the emission standards for new non-road diesel engines in 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary diesel engine. These units shall comply with the emission standards in 40 CFR 89.112(a) for the maximum permitted engine power or the pound per hour (lb/hr) and opacity emission limits as specified in Condition 2(a) AQCP # 3299, 3300, 3255-M1, and ATC #3143 and Condition 3.2.1 in the table above.

3.2.1.4.12 For Emission Units # 195-EG-1 and 253-EG-1A, in accordance with 40 CFR 60 Subpart IIII §60.4205(a), shall comply with the emission standards in Table 1 of 40 CFR 60 Subpart IIII for the maximum permitted engine power. Units # 195-EG-1 and 253-EG-1A shall not exceed the more stringent of the allowable CO, NMHC, NO_x, and PM emission standards in Table 1 of 40 CFR 60 Subpart IIII for the maximum permitted engine power or the pound per hour (lb/hr) and opacity emission limits as specified in Condition 2(a) in AQCP # 1852-M1-1AR and # 1809-M1-2AR and Condition 3.2.1 in the table above.

3.2.1.4.13 For Emission Unit # 289-EG-1, in accordance with 40 CFR 60 Subpart IIII §60.4208(a), for stationary diesel-powered engines installed after December 31, 2008, shall comply with the emission standards in 40 CFR 89.112(a) for the maximum permitted engine power. Unit #289-EG-1 shall not exceed the more stringent of the allowable CO, NO_x+NMHC, and PM emission standards in 40 CFR 89.112(a) for the maximum permitted engine power or the pound per hour (lb/hr) and opacity emission limits as specified in Condition 2(a) in ATC # 2176 and Condition 3.2.1 in the table above.

3.2.1.4.14 For Emission Unit # 288-EG-1, in accordance with 40 CFR 60 Subpart IIII §60.4208(a), for stationary diesel-powered engines installed after December 31, 2008, shall comply with the emission standards in Table 1 of 40 CFR 60 Subpart IIII for the maximum permitted engine power. Unit #288-EG-1 shall not exceed the more stringent of the allowable CO, NO_x+NMHC, and PM emission standards in 40 CFR 89.112(a) for the maximum permitted engine power or the pound per hour (lb/hr) and opacity emission limits as specified in Condition 2(a) of ATC # 2141 and in Condition 3.2.1 in the table above.

3.2.1.4.15 For Emission Unit # 302-EG-1A, in accordance with 40 CFR 60 Subpart IIII §60.4205(a), shall comply with the emission standards for new non-road compression ignition engines in §60.4202, for all pollutants, for the same model year and maximum permitted engine power. Unit # 302-EG-1A shall not exceed the more stringent of the allowable CO, NO_x+NMHC, and PM emission standards in Table 1 of 40 CFR 89 Subpart B §89.112(a) for the maximum permitted engine power or the pound per hour and opacity emission limits as specified in Condition 2(a) of AQCP # 1692-M1-1AR and in Condition 3.2.1 in the table above.

3.2.1.4.16 For Emission Unit # 200-EG-1, in accordance with 40 CFR 60 Subpart IIII §60.4205(b), shall comply with the emission standards for new non-road compression ignition engines in §60.4202, for all pollutants, for the same model year and maximum permitted engine power. Unit # 200-EG-1 shall not exceed the more stringent of the allowable CO, NO_x+NMHC, and PM emission standards in Table 1 of 40 CFR 89 Subpart B §89.112(a) for the maximum permitted engine power or the pound per hour and opacity emission limits as specified in Condition 2(a) of ATC # 2038 and in

Condition 3.2.1 in the table above.

3.2.1.4.17 For Emission Units # 059-EG-1 and 112-EG-1, in accordance with 40 CFR 60 Subpart IIII §60.4205(b), shall comply with the emission standards in 40 CFR 89.112(a) for the maximum permitted engine power. These units shall not exceed the more stringent of the allowable CO, NO_x+NMHC, and PM emission standards in 40 CFR 89.112(a) for the maximum permitted engine power or the pound per hour (lb/hr) and opacity emission limits as specified in Condition 2(a) of ATC # 2008 and 1898 and in Condition 3.2.1 in the table above.

3.2.1.4.18 For Emission Unit #195-EG-1, compliance with CO, NMHC, NO_x, TSP, PM₁₀, and PM_{2.5} lb/hr emissions limits, shall be shown by meeting the requirements of CFR Title 40 Part 60 Subpart IIII §60.4211(b).

3.2.1.4.19 For Emission Units #058-EG-1, 085-EG-1, 204-EG-1, and 253-EG-1A, compliance with CO, NO_x, NMHC, TSP, PM₁₀, and PM_{2.5} pound per hour (lb/hr) emissions limits shall be shown by meeting the requirements of 40 CFR 60 Subpart IIII §60.4211(c).

3.2.1.4.20 For Emission Units #053-EG-1, 057-EG-1, 072-EG-1, 112-EG-1, 288-EG-1, 289-EG-1, and 291-EG-2, compliance with CO, NMHC+NO_x, TSP, PM₁₀, and PM_{2.5} pound per hour (lb/hr) emissions limits, shall be shown by meeting the requirements of 40 CFR 60 Subpart IIII §60.4211(c).

3.2.1.4.21 For Emission Unit #200-EG-1, compliance with NMHC+NO_x, CO, and PM pound per hour (lb/hr) emissions limits shall be shown by meeting the requirements of 40 CFR 60 Subpart IIII §60.4211(c).

3.2.1.4.22 For Emission Unit #302-EG-1A, compliance with VOC+NO_x, CO, and PM pound per hour (lb/hr) emissions limits, shall be shown by meeting the requirements of 40 CFR 60 Subpart IIII §60.4211(c).

3.2.1.4.23 For Emission Unit #059-EG-1, compliance with NMHC+NO_x pound per hour (lb/hr) emissions limits, shall be shown by meeting the requirements of 40 CFR 60 Subpart IIII §60.4211(c). Compliance with CO, TSP, PM₁₀, and PM_{2.5} pound per hour (lb/hr) limits shall be shown by meeting the manufacturer's emissions data.

3.2.1.5 Above Ground Storage Tank Emission Limit Requirements

3.2.1.5.1 Emission Unit #216-AST-1A shall not exceed the ton per year (tpy) emission limit stated in Condition I.2.b) of Air Quality Authority-To-Construct Permit #0087-M1.

3.2.1.6 Chemical Usage Emission Limit Requirements

3.2.1.6.1 Emission Unit #CHEM shall not result in emissions exceeding 17.4 tons per year of Volatile Organic Compounds (non-HAP) based on a 12-month rolling total.

3.2.1.6.2 Emission Unit #CHEM shall not result in emissions exceeding 7.0 tons per year of any individual Hazardous Air Pollutant (HAP) and 9.4 tons per year of any combination of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Federal Clean Air Act, based on a 12-month rolling total.

3.2.1.7 External Combustion Emission Limit Requirements

3.2.1.7.1 Emission Unit #338-BLR-1, shall not cause or allow visible air emissions to exceed 20% opacity during any 6-minute timed average pursuant to 20.11.5.12 NMAC.

Condition 3.2 is pursuant to 40 CFR 50, 20.11.42.12.C.(1).(a), (g) and (h) NMAC, 40 CFR 60 Subpart IIII, 20.11.5 NMAC, 40 CFR 60 Subpart Dc, 40 CFR 60 Subpart GG, 40 CFR 60 Subpart KKKK, 20.11.68 NMAC, Authority to Construct Permit #0490-RV1 and Fugitive Programmatic Dust Control Permit #P05-0006H.

3.3 Operational Requirements

3.3.1 Steam Plant Boiler Operational Requirements

3.3.1.1 Emission Units #176-BLR-1, 176-BLR-2, and 176-BLR-3 may each run continuously.

3.3.1.2 Emission Units #176-BLR-1, 176-BLR-2, and 176-BLR-3 shall each be limited to 89 MMft³ of natural gas usage based on a 12 month rolling total.

3.3.2 ARF Crematorium Operational Requirements

3.3.2.1 Emission Unit #262-CRM-1 shall not exceed 4380 hours of operation based on a 12-month rolling period.

3.3.2.2 Emission Unit #262-CRM-1 shall not exceed 9,000,000 ft³ of natural gas per 12-month rolling period.

3.3.2.3 Emission Unit #262-CRM-1 shall not exceed a "Charge Rate" of 3 cubic yards over any twenty-four (24) hour period. Charge rate is defined as the rate at which the subject unit is burning animal remains at a given point in time expressed in terms of cubic yards per day.

3.3.2.4 Emission Unit #262-CRM-1 shall be operated and maintained according to the manufacturer's written instructions, or procedures developed by the permittee that have been approved by the manufacturer.

3.3.3 Ford Utilities Operational Requirements

3.3.3.1 Emission Unit #116-TRB-1 is authorized to operate 8,760 hours per 12-month rolling period and shall only combust pipeline quality natural gas.

3.3.3.2 Emission Unit #116-TRB-2 is authorized to operate 8,760 hours per 12-month rolling period and shall only combust pipeline quality natural gas.

3.3.3.3 Emission Unit #116-BLR-1A is authorized to operate 8,760 hours per 12-month rolling period utilizing pipeline quality natural gas.

3.3.3.4 Emission Unit #116-BLR-1A shall be restricted to # 2 diesel fuel consumption of 17,175 gallons per 12-month rolling period where the sulfur content of # 2 diesel shall not exceed 0.5% by weight.

3.3.3.5 Emission Unit #116-BLR-2A is authorized to operate 8,760 hours per 12-month rolling period utilizing pipeline quality natural gas.

3.3.3.6 Emission Unit #116-BLR-2A shall be restricted to # 2 diesel fuel consumption of 17,175 gallons per 12-month rolling period where the sulfur content of # 2 diesel shall not exceed 0.5% by weight.

3.3.4 Emergency Internal Combustion Engines Operational Requirements

3.3.4.1 The emergency internal combustion engines listed in 2.1 are subject to the following operational requirements and limitations:

Emergency Internal Combustion Engines Operational Requirements:

Emission Unit Nos.	Hours of Operation Per Year (12-month rolling total)
024-EG-1, 034-EG-1, 046-EG-1, 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 060-EG-1, 072-EG-1, 081-EG-1, 082-EG-1, 083-EG-1, 085-EG-1, 112-EG-1, 116-EG-1A, 122-EG-1, 153-EG-1, 191-EG-1A, 194-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 205-EG-1, 211-EG-2, 211-EG-3, 227-EG-1, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, 253-EG-1A, 253-EG-2, 255-EG-1, 260-EG-2, 266-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, 338-EG-1, and 341-EG-1	200
301-EG-1, 311A-EB-1, and 311B-EB-1	300
021-EG-1, 048-EG-1, and 302-EG-1A	500

3.3.4.1.1 Emission Units #024-EG-1, 034-EG-1, 046-EG-1, 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 060-EG-1, 072-EG-1, 081-EG-1, 082-EG-1, 083-EG-1, 085-EG-1, 112-EG-1, 116-EG-1A, 122-EG-1, 153-EG-1, 191-EG-1A, 194-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 205-EG-1, 211-EG-2, 211-EG-3, 227-EG-1, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, 253-EG-2, 253-EG-1A, 255-EG-1, 260-EG-2, 266-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, 338-EG-1, and 341-EG-1 shall not exceed 200 hours of operation based on a 12-month rolling period. The power generated by these units shall not be used for peak shaving and shall only be utilized as emergency power at this facility. Any other uses except as stated above shall be considered a violation of this permit.

3.3.4.1.2 Emission Units # 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 072-EG-1, 085-EG-1, 112-EG-1, 191-EG-1A, 195-EG-1, 200-EG-1, 204-EG-1, 253-EG-1A, 253-EG-2, 288-EG-1, 289-EG-1, 291-EG-2, and 302-EG-1A shall be limited to 100 hours per year of maintenance checks and readiness testing.

3.3.4.1.3 Emission Units # 053-EG-1, 057-EG-1, 058-EG-1, 072-EG-1, 085-EG-1, 191-EG-1A, 195-EG-1, 204-EG-1, 253-EG-1, 253-EG-2, 291-EG-2, and 302-EG-1A may operate up to 50 hours per year in non-emergency situations but those 50 hours are counted toward the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. Any other uses except as stated above shall be considered a violation of this permit.

3.3.4.1.4 Emission Units #301-EG-1, 311A-EB-1, and 311B-EB-1 shall not exceed 300 hours of operation based on a 12-month rolling period. The power generated by these units shall not be used for peak shaving and shall only be utilized as emergency power at this facility. Any other uses except as stated above shall be considered a violation of this permit.

3.3.4.1.5 Emission Units #021-EG-1, 048-EG-1, and 302-EG-1A shall not exceed 500 hours of operation based on a 12-month rolling period. The power generated by these units shall not be used for peak shaving and shall only be utilized as emergency power at this facility. Any other uses except as stated above shall be considered a violation of this permit.

3.3.4.1.6 Emission Unit 195-EG-1 shall be restricted to a maximum of two hundred (200) hours of operation based on a 12-month rolling total and shall only be operated during loss of commercial power and as required by the manufacturer for engine exercising/maintenance. The unit shall not be operated to generate power for peak shaving or sale to third parties, but only to provide emergency power for the facility. Routine or non-emergency operation of the unit or operation for any other purposes except as stated above shall be a violation of this permit.

3.3.5 Above Ground Storage Tanks Operational Requirements

3.3.5.1 Emission Unit #216-AST-1A Authority to Construct Permit #0087-M1 (ATC #0087-M1) a fully operational vapor recovery system must be installed as defined in 20.11.65.15 NMAC.

3.3.5.2 Emission Unit #216-AST-1A, ATC #0087-M1 shall maintain in good working order any vapor or recovery system and all pressure vent caps shall also be maintained in good working order.

3.3.5.3 Emission Unit #216-AST-1A shall be limited to 190,000 gallons of gasoline per 12-month rolling period.

3.3.6 External Combustion Operational Requirements

3.3.6.1 Emission Unit # 338-BLR-1 may operate 24 hours per day, 7 days per week, 52 weeks per year.

This condition is pursuant to 20.11.42.12.C.(1).(a), (g) and (h) NMAC.

3.4 Emissions Monitoring and Testing Requirements

The following monitoring and/or testing requirements (except those requirements involving direct sampling of exhaust from an emission unit, and except those requirements that originate in an applicable requirement) shall be used as indicators of compliance with applicable requirements and emission limits. Monitoring that indicates a facility may not be in compliance with those applicable requirements will require additional monitoring and/or testing of the affected emission units to be determined by the Department, and may result in a determination of non-compliance with the applicable requirement. Failure to perform the monitoring or testing required by this permit is non-compliance with this permit.

MONITORING AND TESTING REQUIREMENTS TABLE

Emission Unit Nos.	Parameters to Monitor	To Comply With	Monitoring Required	Monitoring Method and Frequency
176-BLR-1, 176-BLR-2, and 176-BLR-3	Monthly Fuel Consumption	40 CFR 60, Subpart Dc §60.48c(g) Authority-To-Construct Permit # 1601-M1-RV1	Recordkeeping	See Condition 3.4.1.1
262-CRM-1	Visible Emissions	Authority-To-Construct Permit #1982 20.11.5.13 NMAC	Opacity	See Condition 3.4.2.1
262-CRM-1	Grain/dscf	Authority-To-Construct Permit #1982	Initial Performance Test	See Condition 3.4.2.2
262-CRM-1	Natural Gas Usage and Average 24 Hour Charge Rate	Authority-To-Construct Permit #1982	Recordkeeping	See Condition 3.4.2.3
116-TRB-1 and 116-TRB-2	NO _x , SO ₂	40CFR60 Subpart GG, Authority-To-Construct Permit #1643-M1	Initial Performance Test (initial performance testing already completed in accordance with Condition 6.a of ATC #1643-M1)	See Condition 3.4.3.1
116-TRB-1 and 116-TRB-2	CO	Authority-To-Construct Permit #1643-M1	Initial Performance Test (initial performance testing already)	See Condition 3.4.3.2

Emission Unit Nos.	Parameters to Monitor	To Comply With	Monitoring Required	Monitoring Method and Frequency
			completed in accordance with Condition 6.a of ATC #1643-M1)	
116-TRB-1 and 116-TRB-2	NO _x , CO	Authority-To-Construct Permit #1643-M1	Annual Performance Tests	See Condition 3.4.3.3
116-TRB-1 and 116-TRB-2	NO _x , SO ₂ , CO	Authority-To-Construct Permit #1643-M1	Performance Tests	See Condition 3.4.3.4
116-TRB-1 and 116-TRB-2	Visible Emissions	Authority-To-Construct Permit #1643-M1 20.11.05 NMAC	Opacity	See Condition 3.4.3.5
116-BLR-1A and 116-BLR-2A	Visible Emissions	Authority-To-Construct Permit #1643-M1 20.11.05 NMAC	Opacity	See Condition 3.4.3.6
116-BLR-1A and 116-BLR-2A	Visible Emissions	Authority-To-Construct Permit #1643-M1 40CFR60 Subpart Dc	Opacity	See Condition 3.4.3.7
116-BLR-1A and 116-BLR-2A	NO _x , CO	Authority-To-Construct Permit #1643-M1	Initial Performance Test	See Conditions 3.4.3.7, 3.4.3.8, and 3.4.3.9
116-TRB-1 and 116-TRB-2	NO _x	40CFR60 Subpart GG, Authority-To-Construct Permit #1643	Approved Custom Fuel Monitoring Schedule	See Condition 3.4.3.10
116-TRB-1 and 116-TRB-2	SO ₂	40CFR60 Subpart GG, Authority-To-Construct Permit #1643	Approved Custom Fuel Monitoring Schedule	See Condition 3.4.3.11
116-BLR-1A and 116-BLR-2A	Daily Fuel Consumption	40 CFR 60, Subpart Dc §60.48c(g) Authority-To-Construct Permit #1643	Recordkeeping	See Condition 3.4.3.12
116-TRB-1, 116-TRB-2, 116-BLR-1A, and 116-BLR-2A	Twelve Month Calculated Emissions	Authority-To-Construct Permit #1643	Recordkeeping	See Condition 3.4.3.13

Emission Unit Nos.	Parameters to Monitor	To Comply With	Monitoring Required	Monitoring Method and Frequency
034-EG-1, 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 060-EG-1, 072-EG-1, 083-EG-1, 085-EG-1, 112-EG-1, 153-EG-1, 191-EG-1A, 195-EG-1, 200-EG-1, 204-EG-1, 205-EG-1, 227-EG-1, 253-EG-1A, 253-EG-2, 260-EG-2, 266-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, and 338-EG-1	Hours of Operation (200)	Authority-To-Construct Permits #1981, 2008, 1646, 1174, 1898, 1647, 3019, 2038, 3137, 1716, 1975-M1, 1976-M1, 1979, 3020, 1715-RV1, 1980-M1, 2141, 2176, 3143, and 0490-RV1 and Air Quality Construction Permits # 3255-M1, 1852-M1-1AR, and 1809-M1-2AR	Recordkeeping	See Condition 3.4.4.1
301-EG-1, 311A-EB-1, and 311B-EB-1	Hours of Operation (300)	Authority-To-Construct Permit # 1691 and Operational Requirements in paragraph 3.3.4.1.4	Recordkeeping	See Condition 3.4.4.2
021-EG-1, 048-EG-1, and 302-EG-1A	Hours of Operation (500)	Authority-To-Construct Permit # 1373 and Air Quality Construction Permit # 1692-M1-1AR and Operational Requirements in paragraph 3.3.4.1.5	Recordkeeping	See Condition 3.4.4.3
024-EG-1, 046-EG-1, 081-EG-1, 082-EG-1, 116-EG-1A, 122-EG-1, 194-EG-1, 211-EG-2, 211-EG-3, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, and 341-EG-1	Hours of Operation	Operational Requirements in paragraph 3.3.4.1.1	Recordkeeping	See Condition 3.4.4.4
021-EG-1, 116-EG-1A, 153-EG-1, and 260-EG-2	NO _x , CO and Opacity	Authority-To-Construct Permits #1373, #1647, #1662-RV1, and #1715-RV1	Initial Performance Test	See Conditions 3.4.4.5 and 3.4.4.9
116-EG-1A	NO _x , CO and Opacity	Authority-To-Construct Permit #1662-RV1	Annual Performance Test	See Condition 3.4.4.6
216-AST-1A	Monthly Throughput	Authority-To-Construct Permit #0087-M1	Recordkeeping	See Condition 3.4.5.1
CHEM	HAP Usage and VOC Usage	Emission limits specified in paragraphs 3.2.1.6.1 and 3.2.1.6.2	Purchase Records	See Conditions 3.4.6.1 and 3.4.6.2

Emission Unit Nos.	Parameters to Monitor	To Comply With	Monitoring Required	Monitoring Method and Frequency
116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 262-CRM-1, 176-BLR-1, 176-BLR-2, 176-BLR-3, 338-BLR-1,	CO ₂ , CH ₄ and N ₂ O	40 CFR 98 Mandatory Greenhouse Gas Reporting Subpart A - <u>General Provisions</u> and Subpart C <u>General Stationary Fuel Combustion Sources</u> .	Recordkeeping	See Condition 3.4.7.1

3.4.1 Steam Plant Boiler Monitoring Requirements

3.4.1.1 Monitor the monthly natural gas fuel consumption for Emission Units# 176-BLR-1, 176-BLR-2, and 176-BLR-3 in accordance with 40 CFR 60, Subpart Dc §60.48c(g).

3.4.2 ARF Crematorium Monitoring and Testing Requirements

3.4.2.1 In accordance with 20.11.5.13.A NMAC and ATC #1982 Emission Unit #262-CRM-1 shall not cause or allow visible air emissions to exceed 5 percent opacity for any time interval including startup and shutdown.

3.4.2.2 An initial compliance test for Emission Unit #262-CRM-1 shall be conducted in order to demonstrate compliance with the grains/dscf standard and opacity limit stated in Condition I.2.d) of ATC #1982. The compliance test shall be conducted in accordance with EPA methods contained in Appendix A of the CFR, Title 40, Part 60, unless otherwise approved by the Program. This test shall be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility and at such other times as may be required by the Program.

3.4.2.3 For Emission Unit #262-CRM-1, monitor the natural gas fuel usage and the average twenty-four hour charging rate.

3.4.3 Ford Utilities Monitoring and Testing Requirements

3.4.3.1 In accordance with 40CFR § 60.8 Performance tests, an initial performance was be conducted on Emission Units #116-TRB-1 and 116-TRB-2 to demonstrate compliance with the NO_x and SO₂ emission limits established in ATC #1643-M1. The performance test shall be conducted in accordance with Condition 6.a) of ATC #1643-M1.

3.4.3.2 An initial performance test of Emission Units #116-TRB-1 and 116-TRB-2 was conducted to demonstrate compliance with the CO lb/hr emission limits established in of ATC #1643-M1. The performance test shall be conducted in accordance with Condition 6.b) of ATC #1643-M1.

3.4.3.3 Annual performance tests have been imposed and shall be conducted on Emission Units #116-TRB-1 and 116-TRB-2 to demonstrate continued compliance with the NO_x and CO emission limits established in of ATC #1643-M1. The performance tests shall be conducted in accordance with Condition 6.c) of ATC #1643-M1.

3.4.3.4 Performance tests have been imposed following the replacement/substitution of the gas producer component of Emission Units #116-TRB-1 and 116-TRB-2 and shall be conducted to demonstrate compliance with the NO_x, SO₂ and CO emission limits established in ATC #1643-M1. The performance tests shall be conducted in accordance with Condition 6.d) of ATC #1643-M1.

3.4.3.5 In accordance with Condition 2.c) and Condition 2.d) of ATC #1643-M1 Emission Units #116-TRB-1 and 116-TRB-2 shall not cause or allow visible air emissions to exceed 20 percent opacity for any six (6) minute timed average.

3.4.3.6 In accordance with 20.11.5.12 NMAC Emission Units #116-BLR-1A and 116-BLR-2A shall not cause or allow visible air contaminant emissions that exceed an opacity of 20 percent, 6-minute timed average while combusting natural gas.

3.4.3.7 An initial performance test of Emission Units #116-BLR-1A and 116-BLR-2A was conducted to demonstrate compliance with the NO_x emission limits established in Condition 2 (i) of ATC #1643-M1 and the CO lb/hr emission limits established in Condition 2 (j) of ATC #1643-M1. Initial compliance tests shall be conducted utilizing both natural gas and utilizing # 2 diesel fuel. The compliance test shall be conducted within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup. This test has been imposed in accordance with 20.11.41.21 NMAC and shall be conducted in accordance with EPA Methods 7 and 10 "Determination of carbon monoxide and nitrogen oxide emissions from stationary sources" and the methods contained in Appendix A of 40 CFR, Part 60, unless otherwise approved by the Program.

3.4.3.8 Performance tests for Emission Units #116-BLR-1A and 116-BLR-2A shall be conducted twice every 5 years. These performance tests shall be conducted no more than 3 years and no less than 2 years apart to demonstrate compliance with the NO_x emission rates established in Condition 2 (m) of ATC #1643-M1 and the CO lb/hr emission rates established in Condition 2 (n) of ATC #1643-M1. These compliance tests shall be conducted utilizing natural gas. This test has been imposed in accordance with 20.11.41.21 NMAC and shall be conducted in accordance with EPA Methods 7 and 10 "Determination of carbon monoxide and nitrogen oxide emissions from stationary sources" and the methods contained in Appendix A of 40 CFR, Part 60, unless otherwise approved by the Program.

3.4.3.9 Performance tests imposed in Condition 6.b), 6.c), 6.d), 6.e) and 6.f) of ATC #1643-M1 for Emission Units #116-TRB-1, 116-TRB-2, 116-BLR-1A and 116-BLR-2A shall be conducted at three points in the normal operating range to include the minimum, median, and peak load, unless the Program determines that emissions are highest at 90% or greater of load.

3.4.3.10 Monitoring of the nitrogen content of the fuel shall be conducted in accordance with the most current Custom Fuel Monitoring Schedule (CFMS) approved by the Program. In accordance with the approved Custom Fuel Monitoring Schedule for Emission Units 116-TRB-1 and 116-TRB-2 monitoring of fuel nitrogen content shall not be required while natural gas is the only fuel fired for this unit.

3.4.3.11 Monitoring of the sulfur content of the fuel shall be conducted in accordance with the most current Custom Fuel Monitoring Schedule (CFMS) approved by the Program. In accordance with the approved Custom Fuel Monitoring Schedule for Emission Units 116-TRB-1 and 116-TRB-2 monitoring of fuel sulfur content shall not be required while natural gas is the only fuel fired for this unit.

3.4.3.12 Monitor the daily natural gas usage in cubic feet and diesel fuel consumption in gallons for Emission Units # 116-BLR-1A and 116-BLR-2A pursuant to 40CFR §60.48c(g).

3.4.3.13 Monitor for Emission Units# 116-TRB-1, 116-TRB-2, 116-BLR-1A and 116-BLR-2A twelve month calculated rolling tpy emissions for each pollutant.

3.4.4 Emergency Internal Combustion Engines Monitoring and Testing Requirements

3.4.4.1 For Emission Units #034-EG-1, 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 060-EG-1, 072-EG-1, 085-EG-1, 083-EG-1, 112-EG-1, 153-EG-1, 191-EG-1A, 195-EG-1, 200-EG-1, 204-EG-1, 205-EG-1, 227-EG-1, 253-EG-1A, 253-EG-2, 260-EG-2, 266-EG-1, 288-EG-1, 289-EG-1, 291-EG-2, and 338-EG-1 monitor monthly hours of operation of each emergency generator.

3.4.4.2 For Emission Unit #301-EG-1, 311A-EB-1, and 311B-EB-1 monitor monthly hours of operation of each emergency generator or blower.

3.4.4.3 For Emission Units #021-EG-1, 048-EG-1, and 302-EG-1A monitor monthly hours of operation of each emergency generator.

3.4.4.4 For Emission Units #024-EG-1, 046-EG-1, 081-EG-1, 082-EG-1, 116-EG-1A, 122-EG-1, 194-EG-1, 211-EG-2, 211-EG-3, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, and 341-EG-1 monitor monthly hours of operation of each emergency generator.

3.4.4.5 Emission Units #021-EG-1, 116-EG-1A 153-EG-1, 260-EG-2, and 253-EG-1A were subject to initial compliance testing requirements under their respective Authority-To-Construct Permits #1373, #1647, #1662-RV1, and #1715-RV1, and Air Quality Construction Permit #1809-M1-2AR and shall comply with the compliance tests in accordance with the test methods/procedures found in 40 CFR §60, Appendix A, and the specific requirements found in each respective Authority-To-Construct Permits. Since Emission Unit # 253-EG-1A (AQCP #1809-M1-2AR) is a Certified Engine under 40 CFR §60, IIII the Air Quality Program has decided to repeal initial compliance testing for this unit.

3.4.4.6 Emission Unit #116-EG-1A is subject to annual compliance testing requirements under their respective Authority-To-Construct Permits #1662-RV1 and shall comply with the compliance tests in accordance with the test methods/procedures found in 40 CFR §60, Appendix A, and the specific requirements found in each respective Authority-To-Construct Permit which shall be conducted within 365 days of the previous compliance test.

3.4.4.7 The initial and annual compliance tests shall be conducted at ninety (90%) percent of the unit's permitted capacity or greater to demonstrate compliance with the permitted emission limits. Compliance testing at other than 90% production levels shall be performed at the Program's request and/or approval.

3.4.5 Above Ground Storage Tanks Monitoring and Testing Requirements

3.4.5.1 Monitor monthly throughput of Above Ground storage tank emission unit #216-AST-1A.

3.4.6 Chemical Usage Monitoring and Testing Requirements

3.4.6.1 For Emission Unit #CHEM, the permittee shall monitor the monthly and annual VOC (non-HAP) emissions for all chemicals used at the facility based on a monthly 12-month rolling total of emissions for all VOCs (non-HAP) expressed in tons per month and tons per year.

3.4.6.2 For Emission Unit #CHEM, the permittee shall monitor the amount of individual HAP and combined HAP emissions for all chemicals used at the facility based on a monthly 12-month rolling total of emissions for all individual HAPs and all combined HAPs expressed in tons per month and tons per year.

3.4.7 Mandatory Greenhouse Gas Reporting Rule – Monitoring Requirements

3.4.7.1 Emission Units #116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 262-CRM-1, 176-BLR-1, 176-BLR-2, 176-BLR-3, and, 338-BLR-1 shall comply with the requirements of the Federal Mandatory Greenhouse Gas Reporting Rule 40 CFR 98 Subpart A - General Provisions, and Subpart C – General Stationary Fuel Combustion Sources.

3.4.8 The permittee shall notify the Department at least thirty (30) days prior to the test date and allow a representative of the Department to be present at the test. When requested by the Department, the permittee shall arrange a pre-test meeting at least thirty (30) days prior to the test date.

3.4.9 Test results that demonstrate compliance with the NO_x and CO emission limits shall also be considered to demonstrate compliance with the VOC emission limits.

3.4.10 When requested by the Department, the permittee shall provide schedules of testing and monitoring activities.

3.4.11 Unless otherwise identified elsewhere in this permit or as specified under an applicable requirement, all monitoring requirements are effective 120 days after the date of permit issuance.

The conditions of section 3.4 are pursuant to 20.11.42.12.C.(3) NMAC and ATC Permits # 0490-RV1, 1174, 1373, 1601-M1-RV1, 1643-M1, 1646, 1647, 1662-RV1, 1691, 1715-RV1, 1716, 1898, 1979, 1980-M1, 1981, 1982, 2008, 2038, 2135, 2141, and 2176, and Air Quality Construction Permits # 1692-M1-1AR, 1852-M1-1AR, 1750-1AR, and 1809-M1-2AR.

4.0 RECORDKEEPING

4.1 The permittee shall follow the record keeping requirements listed below and provide any other information the Department may request to demonstrate the accuracy of the monitoring.

RECORDKEEPING TABLE

Emission Unit Nos.	Recordkeeping Required?	Type of Data or Parameter Recorded	Recording Frequency
176-BLR-1, 176-BLR-2, and 176-BLR-3	Yes	Natural Gas Usage	See Conditions 4.1.1.1
262-CRM-1	Yes	Natural Gas Usage, volume of cremations	See Conditions 4.1.2.1 and 4.1.2.2
116-TRB-1, 116-TRB-2, 116-BLR-1A and 116-BLR-2A	Yes	Upset conditions, performance test results, fuel sulfur content, natural gas and diesel fuel consumption, emissions	See Conditions 4.1.3.1, 4.1.3.2, 4.1.3.3, 4.1.3.4, 4.1.3.5 and 4.1.3.6
021-EG-1, 024-EG-1, 034-EG-1, 046-EG-1, 048-EG-1, 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 060-EG-1, 072-EG-1, 081-EG-1, 082-EG-1, 083-EG-1, 085-EG-1, 112-EG-1, 116-EG-1A, 122-EG-1, 153-EG-1, 191-EG-1A, 194-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 205-EG-1, 211-EG-2, 211-EG-3, 227-EG-1, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, 253-EG-1A, 253-EG-2, 255-EG-1, 260-EG-2, 266-EG-1, 291-EG-2, 301-EG-1, 338-EG-1, 341-EG-1, 311A-EB-1, 311B-EB-1, 288-EG-1, 289-EG-1, and 302-EG-1A	Yes	Operating Hours, Opacity Readings, Performance Test Results	See Conditions 4.1.4.1 and 4.1.4.2
216-AST-1A	Yes	Monthly throughput	See Condition 4.1.5.1 and 4.1.5.2
CHEM	Yes	Amount of HAP in tons/year and amount of VOC in tons/year	See Conditions 4.1.6.1 and 4.1.6.2
116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 262-CRM-1, 259-H-8, 176-BLR-1, 176-BLR-2, 176-BLR-3, and 338-BLR-1	Yes	Greenhouse gas (GHG) emissions	See Condition 4.1.7.1

4.1.1 Steam Plant Boiler Recordkeeping Requirements

4.1.1.1 Maintain and record the monthly natural gas fuel consumption for Emission Units# 176-BLR-1, 176-BLR-2, and 176-BLR-3 in accordance with 40 CFR 60, Subpart Dc §60.48c(g). Fuel consumption records shall be maintained for a period of two years in accordance with 40 CFR 60, Subpart Dc §60.48c(i).

4.1.2 ARF Crematorium Recordkeeping Requirements

4.1.2.1 Maintain an accurate log of the total natural gas usage in cubic feet, as both a monthly total and as a 12-month rolling total.

4.1.2.2 Maintain an accurate daily log of the volume, in cubic yards, of the cremations.

4.1.3 Ford Utilities Recordkeeping Requirements

4.1.3.1 Shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in operation of the affected facility in accordance with 40CFR § 60.7 (b).

4.1.3.2 Shall maintain a file of all measurements including performance test measurements in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records in accordance with 40CFR § 60.7 (f).

4.1.3.3 Shall maintain records of the sulfur content of the fuel consistent with the monitoring requirements of sulfur in condition 4 (a) of ATC #1643-M1.

4.1.3.4 Shall maintain and record the daily natural gas in cubic feet usage and diesel fuel consumption in gallons for emission unit #116-BLR-1A in accordance with 40 CFR § 60.48c(g). Fuel consumption records shall be maintained for a period of two years in accordance with 40CFR §60.48(i).

4.1.3.5 Shall maintain and record the daily natural gas in cubic feet usage and diesel fuel consumption in gallons for emission unit #116-BLR-2A in accordance with 40 CFR § 60.48c(g). Fuel consumption records shall be maintained for a period of two years in accordance with 40CFR §60.48(i).

4.1.3.6 Shall maintain and record emission units 116-TRB-1, 116-TRB-2, 116-BLR-1A and 116-BLR-2A twelve month calculated rolling ty emissions for each pollutant.

4.1.4 Emergency Internal Combustion Engines Recordkeeping Requirements

4.1.4.1 Maintain a record of monthly hours of operation for each emergency generator or blower listed in 2.1. This record shall also show the total hours of operation in any given 12-month period.

4.1.4.2 Maintain records of all test results for emergency generators subject to compliance testing and opacity readings required by their respective Authority to Construct permit.

4.1.4.3 Maintain records of conducted maintenance for Emission Units #191-EG-1A and 253-EG-2 to demonstrate compliance with the requirements of 40 CFR 60.4243(a) if engine settings are adjusted.

4.1.5 Above Ground Storage Tank Recordkeeping Requirements

4.1.5.1 Maintain monthly throughput of underground storage for Emission Unit #216-AST-1A.

4.1.5.2 For Emission Unit# 216-AST-1A gasoline throughput records must be available within 24 hours of a request by the Administrator in accordance with 40CFR §63.11117(d).

4.1.6 Chemical Usage Recordkeeping Requirements

4.1.6.1 For Emission Unit #CHEM, maintain a record of VOC (non-HAP) emissions for the facility. This record shall be based on monthly product usage records, and the weight percent of VOC composition based on MSDS records. Once an initial 12-month period is established, this record shall contain a monthly 12-month rolling total of emissions for all VOCs (non-HAP) expressed in tons per month and tons per year.

4.1.6.2 Maintain a record for Emission Unit #CHEM, the VOC (Non-HAP) emissions in tons based on a 12-month rolling total. For Emission Unit #CHEM, maintain a record of individual HAP and combined HAP emissions that contains any HAP listed in Section 112(b) of the Federal Clean Air Act for the facility. This record shall be based on monthly product usage records, and the weight percent of HAP composition based on MSDS records. Once an initial 12-month period is established, this record shall contain a monthly 12-month rolling total of emissions for all individual HAPs and all combined HAPs expressed in tons per month and tons per year.

4.1.7 Mandatory Greenhouse Gas Reporting Rule – Recordkeeping Requirements

4.1.7.1 Pursuant to 40 CFR 98.37-Records that must be retained. In addition to the requirements of §98.3(g), the permittee must retain the applicable records specified in §§98.34(f) and (g), 98.35(b), and 98.36(e) for Emission Units #116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 262-CRM-1 259-H-8, 176-BLR-1, 176-BLR-2, 176-BLR-3, and 338-BLR-1..

Conditions of 4.1 are pursuant to 20.11.42.12.C(3) and (4)(a) NMAC.

4.2 All sampling and measured data required by this permit for the emissions units in this facility shall be recorded. The minimum information to be included in these records is:

- 4.2.1 the date, place as defined in the permit, and time of sampling or measurements;
- 4.2.2 the date(s) analyses were performed;
- 4.2.3 the company or entity that performed the analyses;
- 4.2.4 the analytical techniques or methods used;
- 4.2.5 the results of such analyses; and
- 4.2.6 the operating conditions existing at the time of sampling or measurement.

Conditions of 4.2 are pursuant to 20.11.42.12.C.(4).(a) NMAC.

4.3 The permittee shall keep copies of all monitoring and measurement data, equipment calibration and maintenance records, original strip charts for Continuous Emission Monitoring instruments if used, other supporting information, and reports required by this permit for at least five (5) years from the time the data was gathered or the reports written. Each record shall show clearly to which emissions unit and/or piece of monitoring equipment it applies, and the date the data was gathered. This condition is pursuant to 20.11.42.12.C.(4).(b) NMAC.

4.4 The permittee shall keep a record describing off permit changes made at this source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes. This condition is pursuant to 20.11.42.12.C.(8).(b) NMAC.

5.0 REPORTING

5.1 Monitoring Reports

5.1.1 Reports of all required monitoring activities for this facility shall be submitted to the Department on the following schedule.

REPORTING REQUIREMENTS TABLE

Emission Unit Nos.	Reporting Required?	Report Content	Schedule of Monitoring Activity Report Submittal
176-BLR-1, 176-BLR-2, and 176-BLR-3	Yes	See Condition 5.1.2.1	Within 45 days following the end of every 6 month period following the date of permit issuance.
176-BLR-1, 176-BLR-2, and 176-BLR-3	Yes	See Condition 5.1.2.2	See Condition 5.1.2.2
262-CRM-1	Yes	See Condition 5.1.3.1	Within 45 days following the end of every 6 month period following the date of permit issuance.
116-TRB-1 and 116-TRB-2	Yes	See Conditions 5.1.4.1, 5.1.4.2, and 5.1.4.3	See Conditions 5.1.4.1, 5.1.4.2, and 5.1.4.3
116-BLR-1A and 116-BLR-2A	Yes	See Condition 5.1.4.4	Within 45 days following the end of every 6 month period following

Emission Unit Nos.	Reporting Required?	Report Content	Schedule of Monitoring Activity Report Submittal
			the date of permit issuance.
116-TRB-1, 116-TRB-2, 116-BLR-1A, and 116-BLR-2A	Yes	See Condition 5.1.4.5	Within 45 days following the end of every 6 month period following the date of permit issuance.
021-EG-1, 024-EG-1, 034-EG-1, 046-EG-1, 048-EG-1, 053-EG-1, 057-EG-1, 058-EG-1, 059-EG-1, 060-EG-1, 072-EG-1, 081-EG-1, 082- EG-1, 083-EG-1, 085-EG-1, 112-EG-1, 116-EG-1A, 122-EG-1, 153-EG-1, 191-EG-1A, 194-EG-1, 195-EG-1, 200-EG-1, 204-EG-1, 205-EG-1, 211-EG-2, 211-EG-3, 227-EG-1, 228-EG-1, 234-EG-1A, 248-EG-1, 249-EG-1, 253-EG-1A, 253-EG-2, 255-EG-1, 260-EG-2, 266-EG-1, 291-EG-2, 301-EG-1, 338-EG-1, 341-EG-1, 311A-EB-1, 311B-EB-1, 288-EG-1, 289-EG-1, and 302-EG-1A	Yes	See Condition 5.1.5.1	Within 45 days following the end of every 6 month period following the date of permit issuance.
216-AST-1A	Yes	See Condition 5.1.6.1	Within 45 days following the end of every 6 month period following the date of permit issuance
216-AST-1A	Yes	See Condition 5.1.6.2	See Condition 5.1.6.2
CHEM	Yes	See Conditions 5.1.7.1 and 5.1.7.2	Within 45 days following the end of every 6 month period following the date of permit issuance.
116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 262-CRM-1, 259-H-8, 176-BLR-1, 176-BLR-2, 176-BLR-3, and 338-BLR-1	Yes	See Condition 5.1.8.1	The annual GHG report must be submitted no later than March 31 of each calendar year for GHG emissions in the previous year

These reports shall include the following information:

5.1.2 Steam Plant Boiler Reporting Requirements

5.1.2.1 Report the monthly natural gas fuel consumption for Emission Units# 176-BLR-1, 176-BLR-2, and 176-BLR-3.

5.1.2.2 Report the date of construction or reconstruction, anticipated startup, and actual startup for Emission Units# 176-BLR-1, 176-BLR-2, and 176-BLR-3 in accordance with 40 CFR 60, Subpart Dc §60.48c(a) and 40 CFR 60, Subpart A-General Provisions 60.7. This notification shall include:

- i. The design heat input capacity and identification of fuels to be combusted by Emission Units# 176-BLR-1, 176-BLR-2, and 176-BLR-3; and,
- ii. The annual capacity factor for Emission Units# 176-BLR-1, 176-BLR-2, and 176-BLR-3 at which the owner or operator anticipates operating based on all fuels fired and based on each individual fuel fired.

5.1.3 ARF Crematorium Reporting Requirements

5.1.3.1 Report the monthly hours of operation, monthly natural gas usage in cubic feet, and the daily log of the volume, in cubic yards, of the cremations for Emission Unit # 262-CRM-1.

5.1.4 Ford Utilities Reporting Requirements

5.1.4.1 Report the replacement/substitution of the gas producer component not less than thirty (30) days prior to replacement/substitution.

5.1.4.2 Report the actual date of occurrence for the replacement/substitution of the gas producer component within thirty (30) days of the replacement/substitution.

5.1.4.3 Report the make, model number, serial number, date of manufacture, and the manufacturer's rated horsepower of the replacement/substitute gas producer component within 30 days of the replacement/substitution.

5.1.4.4 Report the daily natural gas usage in cubic feet and diesel fuel consumption in gallons for Emission Units # 116-BLR-1A and 116-BLR-2A.

5.1.4.5 Report the twelve month calculated rolling tpy emissions for each pollutant for Emission Units# 116-TRB-1, 116-TRB-2, 116-BLR-1A and 116-BLR-2A.

5.1.5 Emergency Internal Combustion Engines Reporting Requirements

5.1.5.1 Report monthly hours of operation for each emergency generator or blower based on a rolling 12-month total.

5.1.6 Above Ground Storage Tank Reporting Requirements

5.1.6.1 Report the monthly throughput of gasoline for Emission Unit # 216-AST-1A.

5.1.6.2 Report all applicable notification pursuant to 40 CFR 63, Subpart CCCCCC:

1. §63.11117(e) requires that you must submit the applicable notifications as required under §63.11124(a).
2. §63.11124(a) requires that each owner or operator subject to the control requirements in §63.11117 must comply with paragraph (a)(1) through (3) of §63.11124 as follows:
 - (a)(1) You must submit an Initial Notification that you are subject to this subpart by May 9, 2008, or at the time you become subject to the control requirements in §63.11117. The notification must be submitted to the applicable EPA Regional Office and the delegated State authority as specified in §63.13. The Initial Notification must contain the information specified in paragraphs (i) through (iii) of this section as follows:
 - (i) the name and address of the owner and the operator;
 - (ii) the address (i.e., physical location) of the GDF; and
 - (iii) a statement that the notification is being submitted in response to this subpart and identifying the requirements in paragraphs (a) through (c) of §63.11117 that apply to you;
 - (a)(2) You must submit a Notification of Compliance Status to the applicable EPA Regional Office and the delegated State authority, as specified in §63.13, in accordance with the schedule specified in §63.9(h). The Notification of Compliance Status must be signed by a responsible official who must certify its accuracy and must indicate whether the source has complied with the requirements of this subpart. If your facility is in compliance with the requirements of this subpart at the time the Initial Notification required under paragraph (a)(1) of this section is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the information required under paragraph (a)(1) of this section; and
 - (a)(3) If, prior to January 10, 2008, you are operating in compliance with an enforceable State, local, or tribal rule or permit that requires submerged fill as specified in §63.11117(b), you are not required to submit an Initial Notification or a Notification of Compliance Status under paragraph (a)(1) or paragraph (a)(2) of this section.
3. Sources in Bernalillo county that are in compliance with a 20.11.41 NMAC, Authority to Construct permit should be meeting the 20.11.65 NMAC, Volatile Organic Compounds requirements for submerged fill pipe and vapor loss control system for loading of fuel storage tanks and vapor recovery, and therefore should not have to submit an Initial Notification or a Notification of Compliance Status. **Since all gasoline dispensing facilities**

permit through 20.11.41 NMAC, Initial Notifications and Notifications of Compliance Status are met through the permitting process and through the inspection program.

5.1.7 Chemical Usage Reporting Requirements

5.1.7.1 For Emission Unit #CHEM, report the monthly amount of individual HAPs and combined HAPs in tons utilizing the product usage records and the weight percent of HAP composition based on the Material Safety Data Sheets.

5.1.7.2 For Emission Unit #CHEM, report the monthly amount of VOC (non-HAP) emissions in tons utilizing the product usage records and the weight percent of VOC composition based on the Material Safety Data Sheets.

5.1.8 Mandatory Greenhouse Gas Reporting Rule – Reporting Requirements

5.1.8.1 Pursuant to § 98.36(a) – Data reporting requirements, in addition to the facility-level information required under §98.3, the annual GHG emission report shall contain the unit-level or process-level emission data in paragraphs (b) through (d) of § 98.36 (as applicable) and the emissions verification data in paragraph (e) of § 98.36 for Emission Units #116-TRB-1, 116-TRB-2, 116-BLR-1A, 116-BLR-2A, 262-CRM-1, 259-H-8, 176-BLR-1, 176-BLR-2, 176-BLR-3, and 338-BLR-1. All Mandatory Greenhouse Gas Reporting shall be submitted to the United States Environmental Protection Agency.

All instances of deviations from permit requirements, including emergencies, shall be clearly identified in these reports. Conditions of 5.1 are pursuant to 20.11.42.12.C.(5) NMAC.

5.2 The permittee shall submit reports of all deviations (including emergencies) from permit requirements to the Department when they occur. The permittee shall communicate initial notice of the deviation to the Department within twenty-four (24) hours of the start of the first business day following the start of the occurrence via telephone or facsimile. Within ten (10) calendar days of the start of the first business day following the start of the occurrence, written notice using the Deviation From Title V Permit Requirements and Emergency Notification Form (attached to this permit) shall be submitted to the Department. This condition is pursuant to 20.11.42.12.C.(5).(b) NMAC.

5.3 The permittee shall submit reports of all excess emissions to the Department. The permittee shall report the excess emissions to the Department with written notice using the Excess Emission Reporting Form (attached to this permit). The permittee of a source having excess emissions shall report the following information to the Department:

- i. **INITIAL REPORT:** The permittee shall file an initial report, no later than the end of the next regular business day after the time of discovery of an excess emission pursuant to 20.11.49.15.A(1) NMAC;
- ii. **FINAL REPORT:** The permittee shall file a final report, no later than 10 days after the end of the excess emission. If the period of an excess emission extends beyond 10 days, the permittee shall submit the final report to the Program within 72 hours of the date and time the excess emission ceased. This condition is pursuant to 20.11.49.15.A(2) NMAC and 20.11.49.15.C NMAC; and,
- iii. **ALTERNATIVE REPORTING:** If the facility is subject to the reporting requirements of 40 CFR Parts, 60, 61, and 63 and the federal requirements duplicate the requirements of 20.11.49.15 NMAC, then the federal reporting requirements shall suffice. This condition is pursuant to 20.11.49.15.D NMAC.

This condition is pursuant to 20.11.49 NMAC.

6.0 COMPLIANCE

6.1 Compliance Certification

6.1.1 The permittee shall submit compliance certification reports certifying the compliance status of this facility with respect to all applicable requirements. These reports shall be made on copies of the Compliance Certification Report Form (attached to this permit) and submitted to the Department and to EPA every 12 months, commencing 12 months following the date of issuance of this permit. This report is due no later than 30 days after each anniversary of the date of permit issuance. This condition is pursuant to 20.11.42.12.C.(5).(c) NMAC.

6.1.2 For sources that have submitted air dispersion modeling that demonstrates compliance with state and federal standards in accordance with sections 20.11.8.11 NMAC and 20.11.8.12 NMAC, compliance with the terms and conditions of this permit regarding source emissions and operation shall be deemed to be compliance with state and federal ambient air quality standards (20.11.8 NMAC Ambient Air Quality Standards and 40 CFR 50 NAAQS).

6.2 Inspections

The permittee shall allow representatives of the Department, upon presentation of credentials and other documents as may be required by law, to do the following:

6.2.1 enter the permittee's premises where a source or emission unit is located, or where records that are required by this permit to be maintained are kept,

6.2.2 have access to and copy, at reasonable times, any records that are required by this permit to be maintained,

6.2.3 inspect any facilities, equipment (including monitoring and air pollution control equipment), work practices or operation regulated or required under the permit,

6.2.4 sample or monitor any substances or parameters for the purpose of assuring compliance with this permit or applicable requirements or as otherwise authorized by the federal Act.

Conditions of 6.2 are pursuant to 20.11.42.12.C.(6).(a) NMAC.

6.3 Posting of Permit

A copy of this permit shall be kept at the permitted facility and shall be made available to Department personnel for inspection upon request. This condition is pursuant to 20.11.42.12.C.(6).(c) NMAC.

Conditions of 6.2 are pursuant to 20.11.42.12.C.(6)(a) NMAC.

7.0 EMERGENCIES

7.1 An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the permittee, including acts of God, which situation requires immediate corrective action to restore normal operation of the facility or emissions unit, and that causes exceedances of emissions limits specified in this permit. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, or careless or improper operation.

7.2 An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the permittee has demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

7.2.1 an emergency occurred and that the permittee can identify the cause(s) of the emergency,

7.2.2 the permitted facility was at the time being properly operated,

7.2.3 during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in the permit, and

7.2.4 The permittee fulfilled notification requirements under Subparagraph (b), of Paragraph (5), of Subsection C of 20.11.42.12 NMAC. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

7.3 In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

7.4 This provision is in addition to any emergency or upset provision contained in any applicable requirement, except that 20.11.42 NMAC sources shall not be subject to the provisions of 20.11.90.12 NMAC for permit terms and conditions issued under 20.11.42 NMAC.

7.5 The permittee shall identify and report all emergencies to the Department in accordance with Condition 5.2 of this permit.

7.6 In any enforcement proceeding, the permittee has the burden of proof in seeking to establish the occurrence of an emergency.

Conditions of 7.0 are pursuant to 20.11.42.12.E.(1) and (4) NMAC.

8.0 PERMIT REOPENING AND REVOCATION

8.1 This permit will be reopened and revised when any one of the following conditions occurs, and may be revoked and reissued when Conditions 8.1.3 or 8.1.4 occurs:

8.1.1 Additional requirements under the federal Act become applicable to this source three (3) or more years before the expiration date of this permit. If the effective date of the requirement is later than the expiration date of this permit, then the permit is not required to be reopened unless the original permit or any of its terms and conditions has been extended due to the Department's failure to take timely action on a request by the permittee to renew this permit.

8.1.2 Additional requirements, including excess emissions requirements, become applicable to this source under Title IV of the federal Act (the acid rain program). Upon approval by the Administrator, excess emissions offset plans will be incorporated into this permit.

8.1.3 The Department or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the terms and conditions of the permit.

8.1.4 The Department or the Administrator determines that the permit must be revised or revoked and reissued to assure compliance with an applicable requirement.

Conditions of 8.1 are pursuant to 20.11.42.13.F.(1).(a) NMAC.

8.2 Proceedings to reopen or revoke this permit shall affect only those parts of this permit for which cause to reopen or revoke exists. Emissions units for which permit conditions have been revoked shall not be operated until new permit conditions have been issued for them. This condition is pursuant to 20.11.42.13.F.(1).(b) NMAC.

9.0 CERTIFICATION A responsible official, as defined in 20.11.42 NMAC shall certify the accuracy, truth, and completeness of every report and compliance certification submitted to the Program or to the EPA as required by any permit condition or applicable requirement. This condition is pursuant to 20.11.42.12.A.(5) NMAC.

10.0 CONFIDENTIAL INFORMATION

10.1 Any records, reports, or information obtained by the Department shall be available to the public, except upon the Facility's ability to demonstrate to the Department that records, reports, or information, or particular sections thereof, would divulge confidential business records, methods, or processes entitled to protection as a trade secret. However, emission data will not be treated as confidential information. Confidential information, upon request, shall be disclosed to any officer, employee, or other authorized representative of the Department, the New Mexico Environment Department, or the EPA, or during any relevant proceedings under the A/BCAQCB Regulations, the Air Quality Control Act, or the Federal Act. (74-2-11 NMSA)

10.2 All confidentially claims made regarding material submitted to the Department under 20.11.42.12.B NMAC shall be reviewed in accordance with the provisions of the Joint Air Quality Board Ordinances pursuant to the New Mexico Air Quality Control Act, 74-2-11 NMSA 1978, and the New Mexico Inspection of Public Records Act, 14-2-1 et seq. NMSA 1978.

10.3 In the case where an applicant or Facility has submitted information to the Department under a claim of confidentiality, the Department may also require the applicant or Facility to submit a copy of such information directly to the Administrator. 20.11.42.12.B NMAC.

10.4 An operating permit is a public record, and not entitled to protection under Section 114(c) of the Federal Act.

Conditions of 10.0 are pursuant to 20.11.42 NMAC and 74-2-11 NMSA.

11.0 AIRBORNE PARTICULATE MATTER

11.1 The permittee shall be subject to the requirements found in 20.11.20 NMAC Fugitive Dust Control if it is engaged with new construction or site modification involving active operations that result in disturbed surface areas or involve bulk material handling to prevent or abate injury to human health and animal and plant life and to prevent or abate unreasonable interference with public welfare, visibility and the reasonable use of property.

11.2 Each person shall use reasonably available control measures or any other effective control measure to prevent a violation of the national ambient air quality standards and meet the objective established in 20.11.20.6 NMAC, whether or not the person has been issued a fugitive dust control permit. No person shall allow fugitive dust, track out, or transported material from any active operation, open storage pile, paved or unpaved roadway or disturbed surface area, or inactive disturbed surface area to be carried beyond the property line, right-of-way, easement or any other area under control of the person generating or allowing the fugitive dust if the fugitive dust will: 1) adversely affect the health, public welfare or safety of the residents of Bernalillo county; or 2) impair visibility or the reasonable use of property; or 3) be visible longer than a total of 15 minutes in any one hour observation period using the visible fugitive dust detection method in 20.11.20.26 NMAC or an equivalent method approved in writing by the department. To mitigate fugitive dust, all inactive disturbed surface areas must be stabilized and maintained in stable condition by the owner, operator, or person responsible for maintenance of the disturbed surface. Failure to comply with this condition shall be a violation of 20.11.20 NMAC.

Conditions of 11.0 are pursuant to 20.11.20 NMAC.

12.0 CREDIBLE EVIDENCE

12.1 Notwithstanding any other provisions of any applicable rule or regulation or requirement of this permit that state specific methods that may be used to assess compliance with applicable requirements, pursuant to 40 CFR Part 70 and EPA's Credible Evidence Rule, 62 Fed. Reg. 8314 (Feb. 24, 1997), any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed shall be considered for purposes of Title V compliance certifications. Furthermore, for purposes of establishing whether or not a person has violated or is in violation of any emissions limitation or standard or permit condition, nothing in this permit shall preclude the use, including the exclusive use, by any person of any such credible evidence or information."

13.0 ANNUAL FEES

13.1 Condition 13 has been placed in the permit in accordance with 40 CFR Part 70.9 to allow the Program to determine compliance with the terms and conditions of the permit. Compliance will be based on the receipt of the annual emissions fee due each year to the Program pursuant to 40 CFR Part 70.9. Every owner or operator of a source that is required to obtain a source registration, an Authority-to-Construct, an operating permit, or a preconstruction permit shall pay an annual emissions fee pursuant to 40 CFR Part 70.9, 20.11.40 NMAC, 20.11.41 NMAC, 20.11.42 NMAC, 20.11.60 NMAC, 20.11.61 NMAC, or 20.11.62 NMAC.

**Facility Wide Fee Pollutants
(Tons Per Year)**

Fee Pollutant	Facility Wide Fee Pollutant Totals in Tons per Year (TPY)
Carbon Monoxide (CO)	161
Oxides of Nitrogen (NO _x)	138
Nitrogen Oxides + Volatile Organic Compounds (NO _x + VOC)	7
Total Suspended Particulate Matter (TSP)	16
Oxides of Sulfur (SO _x)	31
Volatile Organic Compounds (VOC)	53
Hazardous Air Pollutants (HAPs)	13
Facility Wide Fee Pollutants Totals (TPY)	419

APPEAL PROCEDURES

Any person who participated in this permitting action before the Department and who is adversely affected by the action taken by the Department concerning this permit, may file a petition for a hearing before the Albuquerque/Bernalillo County Air Quality Control Board ("board"). The petition must be made in writing to the board within thirty (30) days from the date notice is given of the Department's action. This petition must specify the portions of the permitting action to which the petitioner objects and certify that a copy of the petition has been mailed or hand-delivered as required by 20.11.42.13.D.(1).(b) NMAC; a copy of the permitting action for which review is sought must be attached to the petition. Upon receipt of the appeal notice, the petitioner must mail or deliver a copy of the petition to the Department, and to the applicant or permittee if the petitioner is not the applicant/permittee. Requests for a hearing shall be sent to:

Secretary, Albuquerque/Bernalillo County Air Quality Control Board
One Civic Plaza
400 Marquette, NW
P.O. Box 1293
Albuquerque, New Mexico 87103

Unless a timely request for a hearing is made, the decision of the Department will be final. If a timely request for hearing is made, the board will hold a hearing within ninety (90) days of receipt of the petition in accordance with the New Mexico Air Quality Control Act NMSA 1978 74-2-7 and 20.11.42.13.D.(1).(c) NMAC.

Any person who is adversely affected by an administrative action taken by the board pursuant to 20.11.42.13.D.(1).(a) NMAC may appeal to the Court of Appeals in accordance with New Mexico Air Quality Control Act NMSA 1978 74-2-9. Petitions for judicial review must be filed no later than thirty (30) days after the administrative action. This condition is pursuant to 20.11.42.13.D.(2) NMAC and New Mexico Air Quality Control Act NMSA 1978 74-2-9.

SUBMITTAL OF REPORTS AND CERTIFICATIONS

Compliance notifications, monitoring activity reports, compliance schedule progress reports, and excess emission forms, if any and any other compliance status information required by this permit shall be certified by the responsible official and submitted to:

Compliance Officer, Quality Assurance Section
Albuquerque Environmental Health Department
Air Quality Program
Mailing Address:
P. O. Box 1293
Albuquerque, NM 87103
Physical Address:
1 Civic Plaza NW
City/County Building
3rd Floor, Room 3047
Phone: (505) 768-1972
Fax: (505) 768-1977

Monitoring results and reports, emissions sampling and measurement data, test protocols, and test reports if any shall be certified by the responsible official and submitted to:

Enforcement Supervisor
Albuquerque Environmental Health Department
Air Quality Program
Mailing Address:
P. O. Box 1293
Albuquerque, NM 87103
Physical Address:
1 Civic Plaza NW
City/County Building
3rd Floor, Room 3047
Phone: (505) 768-1972
Fax: (505) 768-1977

EPA Address -- All correspondence to the EPA required by this permit shall be sent to the following address:

Director, Compliance Assurance and Enforcement Division
U.S. EPA, Region 6
1445 Ross Ave., Suite 700
Dallas, TX 75202

Questions about this permit should be referred to Paul Puckett of the Permitting Section of the Air Quality Program in Albuquerque at (505) 767-5626.

Attachments:

- 1) Excess Emission Reporting Form and Instructions
- 2) Deviation From Title V Permit Requirements and Emergency Notification Form
- 3) Compliance Certification Report Form

**Attachment 1
University of New Mexico**

Excess Emission Reporting Form and Instructions



**Excess Emission
Form**

**Attachment 2
University of New Mexico**

Deviation From Title V Permit Requirements and Emergency Notification Form



T5 Deviation Report

Attachment 3

University of New Mexico

Compliance Certification Report Form



**T5 Compliance
Certification**