Trinity Consultants
9400 Holly Ave NE, Bldg 3, Ste B, Albuquerque, NM 87122 / P 505.266.6611 / **trinityconsultants.com**

March 1, 2023

Permit Programs Manager
NMED Air Quality Bureau
525 Camino de los Marques, Suite 1
Santa Fe, NM 87505

RE: Application for Title V Renewal
El Paso Natural Gas company, L.L.C. – Lordsburg Compressor Station

Dear Permit Programs Manager:

On behalf of El Paso Natural Gas Company L.L.C., we are submitting this application to meet requirements of a Title V Renewal application pursuant to 20.2.70.300.B.(2) NMAC, which requires a Title V Permit renewal application be submitted at least twelve (12) months prior to expiration of the current Title V Operating Permit (current permit expires March 8, 2024).

The format and content of this application are consistent with the Bureau's current policy regarding Title V applications; it is a complete application package using the most current application forms. Enclosed is one hard copy and one working copy of the application, including the original certification page, electronic files, and an application check. Please feel free to contact me at (505) 266-6611 or by email at aerenstein@trinityconsultants.com if you have any questions regarding this application. Alternatively, you may contact Richard Duarte with El Paso Natural Gas Company, LLC at (505) 269-2794 or by email at ricardo_duarte@KinderMorgan.com .

Sincerely,

TRINITY CONSULTANTS

Adam Erenstein
Manager of Consulting Services

cc: Richard Duarte (El Paso natural Gas Company, LLC)
Trinity Project File 233201.0024

Air Permit Application
Compliance History Disclosure Form

Pursuant to Subsection 74-2-7(S) of the New Mexico Air Quality Control Act ("AQCA"), NMSA §§ 74-2-1 to -17, the New Mexico Environment Department ("Department") may deny any permit application or revoke any permit issued pursuant to the AQCA if, within ten years immediately preceding the date of submission of the permit application, the applicant met any one of the criteria outlined below. In order for the Department to deem an air permit application administratively complete, or issue an air permit for those permits without an administrative completeness determination process, the applicant must complete this Compliance History Disclosure Form as specified in Subsection 74-2-7(P). An existing permit holder (permit issued prior to June 18, 2021) shall provide this Compliance History Disclosure Form to the Department upon request.

Permittee/Applicant Company Name		**Expected Application Submittal Date**
El Paso Natural Gas Company, L.L.C.		March 8, 2023
Permittee/Company Contact	**Phone**	**Email**
Ricard Duarte	(505) 269-2794	Ricardo_Duarte@KinderMorgan.com

	Within the 10 years preceding the expected date of submittal of the application, has the permittee or applicant:	
1	Knowingly misrepresented a material fact in an application for a permit?	☐ Yes ☒ No
2	Refused to disclose information required by the provisions of the New Mexico Air Quality Control Act?	☐ Yes ☒ No
3	Been convicted of a felony related to environmental crime in any court of any state or the United States?	☐ Yes ☒ No
4	Been convicted of a crime defined by state or federal statute as involving or being in restraint of trade, price fixing, bribery, or fraud in any court of any state or the United States?	☐ Yes ☒ No
5a	Constructed or operated any facility for which a permit was sought, including the current facility, without the required air quality permit(s) under 20.2.70 NMAC, 20.2.72 NMAC, 20.2.74 NMAC, 20.2.79 NMAC, or 20.2.84 NMAC?	☐ Yes ☒ No
5b	If "No" to question 5a, go to question 6. If "Yes" to question 5a, state whether each facility that was constructed or operated without the required air quality permit met at least one of the following exceptions: a. The unpermitted facility was discovered after acquisition during a timely environmental audit that was authorized by the Department; or b. The operator of the facility estimated that the facility's emissions would not require an air permit, **and** the operator applied for an air permit within 30 calendar days of discovering that an air permit was required for the facility.	☐ Yes ☒ No
6	Had any permit revoked or permanently suspended for cause under the environmental laws of any state or the United States?	☐ Yes ☒ No
7	For each "yes" answer, please provide an explanation and documentation.	

Mail Application To:		**For Department use only:**
New Mexico Environment Department Air Quality Bureau Permits Section 525 Camino de los Marquez, Suite 1 Santa Fe, New Mexico, 87505 Phone: (505) 476-4300 Fax: (505) 476-4375 www.env.nm.gov/aqb		

Universal Air Quality Permit Application

Use this application for NOI, NSR, or Title V sources.

Use this application for: the initial application, modifications, technical revisions, and renewals. For technical revisions, complete Sections, 1-A, 1-B, 2-E, 3, 9 and any other sections that are relevant to the requested action; coordination with the Air Quality Bureau permit staff prior to submittal is encouraged to clarify submittal requirements and to determine if more or less than these sections of the application are needed. Use this application for streamline permits as well.

This application is submitted as (check all that apply)**:** ☐ Request for a No Permit Required Determination (no fee)
☐ **Updating** an application currently under NMED review. Include this page and all pages that are being updated (no fee required).
Construction Status: ☐ Not Constructed ☑ Existing Permitted (or NOI) Facility ☐ Existing Non-permitted (or NOI) Facility
Minor Source: ☐ a NOI 20.2.73 NMAC ☐ 20.2.72 NMAC application or revision ☐ 20.2.72.300 NMAC Streamline application
Title V Source: ☐ Title V (new) ☑ Title V renewal ☐ TV minor mod. ☐ TV significant mod. TV Acid Rain: ☐ New ☐ Renewal
PSD Major Source: ☐ PSD major source (new) ☐ minor modification to a PSD source ☐ a PSD major modification

Acknowledgements:

☑ I acknowledge that a pre-application meeting is available to me upon request. ☐ Title V Operating, Title IV Acid Rain, and NPR applications have no fees.

☐ $500 NSR application Filing Fee enclosed OR ☐ The full permit fee associated with 10 fee points (required w/ streamline applications).

☐ Check No.: in the amount of

☐ I acknowledge the required submittal format for the hard copy application is printed double sided 'head-to-toe', 2-hole punched (except the Sect. 2 landscape tables is printed 'head-to-head'), numbered tab separators. Incl. a copy of the check on a separate page.

☐ I acknowledge there is an annual fee for permits in addition to the permit review fee: www.env.nm.gov/air-quality/permit-fees-2/.

☐ This facility qualifies for the small business fee reduction per 20.2.75.11.C. NMAC. The full $500.00 filing fee is included with this application and I understand the fee reduction will be calculated in the balance due invoice. The Small Business Certification Form has been previously submitted or is included with this application. (Small Business Environmental Assistance Program Information: www.env.nm.gov/air-quality/small-biz-eap-2/.)

Citation: Please provide the **low level citation** under which this application is being submitted: **20.2.70.300.B.(2) NMAC**
(e.g. application for a new minor source would be 20.2.72.200.A NMAC, one example for a Technical Permit Revision is 20.2.72.219.B.1.b NMAC, a Title V acid rain application would be: 20.2.70.200.C NMAC)

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known (see 1st 3 to 5 #s of permit IDEA ID No.): 553	Updating Permit/NOI #: P131R4
1	Facility Name: Lordsburg Compressor Station	Plant primary SIC Code (4 digits): 4922	
		Plant NAIC code (6 digits): 486210	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): From the intersection of Main Street/US-70 and I-10 in Lordsburg, head east on I-10 for approximately 7 miles. Take exit #29, and turn left onto Ulmoris Road. Follow Ulmoris under the freeway and across the access road, then take a right into the facility.		
2	Plant Operator Company Name: El Paso Natural Gas Company, L.L.C.	Phone/Fax: (719) 520-4600/ N/A	
a	Plant Operator Address: 2 N Nevada Ave, Colorado Springs, CO 80903		

b	Plant Operator's New Mexico Corporate ID or Tax ID: 46-0809216	
3	Plant Owner(s) name(s): El Paso Natural Gas Company, L.L.C.	Phone/Fax: (719) 520-4600/ N/A
a	Plant Owner(s) Mailing Address(s): 2 N Nevada Ave, Colorado Springs, CO 80903	
4	Bill To (Company): El Paso Natural Gas Company, L.L.C.	Phone/Fax: (719) 520-4600/ N/A
a	Mailing Address: 2 N Nevada Ave Colorado Springs, CO 80903	E-mail: Ricardo_Duarte@KinderMorgan.com
5	☑ Preparer: Trinity Consultants ☑ Consultant: Adam Erenstein	Phone/Fax: (505) 266-6611
a	Mailing Address: 9400 Holly Avenue NE, Bldg. 3, Ste B Albuquerque, NM 87122	E-mail: AErenstein@trinityconsultants.com
6	Plant Operator Contact: Mike Marrufo	Phone/Fax: (575) 544-5234/(575) 544-5231
a	Address: 1900 Deming Station Road SW Deming, NM 88030	E-mail: Miguel_Marrufo@KinderMorgan.com
7	Air Permit Contact: Richard Duarte	Title: Senior EHS Engineer
a	E-mail: Ricardo_Duarte@KinderMorgan.com	Phone/Fax: (505) 269-2794/(505) 831-7739
b	Mailing Address: 7445 Pan American Freeway, Ste 202, Albuquerque, NM 87109	
c	The designated Air permit Contact will receive all official correspondence (i.e. letters, permits) from the Air Quality Bureau.	

Section 1-B: Current Facility Status

1.a	Has this facility already been constructed? ☑ Yes ☐ No	1.b If yes to question 1.a, is it currently operating in New Mexico? ☑ Yes ☐ No
2	If yes to question 1.a, was the existing facility subject to a Notice of Intent (NOI) (20.2.73 NMAC) before submittal of this application? ☐ Yes ☑ No	If yes to question 1.a, was the existing facility subject to a construction permit (20.2.72 NMAC) before submittal of this application? ☑ Yes ☐ No
3	Is the facility currently shut down? ☐ Yes ☑ No	If yes, give month and year of shut down (MM/YY): N/A
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? ☑ Yes ☐ No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? ☐Yes ☐No ☑ N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? ☑ Yes ☐ No	If yes, the permit No. is: P131R4
7	Has this facility been issued a No Permit Required (NPR)? ☐ Yes ☑ No	If yes, the NPR No. is: N/A
8	Has this facility been issued a Notice of Intent (NOI)? ☐ Yes ☑ No	If yes, the NOI No. is: N/A
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? ☑ Yes ☐ No	If yes, the permit No. is: PSD2810-M5
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☐ Yes ☑ No	If yes, the register No. is: N/A

Section 1-C: Facility Input Capacity & Production Rate

1	What is the facility's maximum input capacity, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: 79.2 MMscf*	Daily: 1.9 Bscf*	Annually: 693 Bscf*
b	Proposed	Hourly: 79.2 MMscf*	Daily: 1.9 Bscf*	Annually: 693 Bscf*
2	What is the facility's maximum production rate, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: 79.2 MMscf*	Daily: 1.9 Bscf*	Annually: 693 Bscf*

b	Proposed	Hourly: 79.2 MMscf*	Daily: 1.9 Bscf*	Annually: 693 Bscf*

*Capacities are provided for informational purposes only and are not intended to be an enforceable limit.

Section 1-D: Facility Location Information

1	Section: 8	Range: 17W	Township: 23S	County: Hidalgo	Elevation (ft): 4230
2	UTM Zone: ☑ 12 or ☐ 13			Datum: ☐ NAD 27 ☐ NAD 83 ☑ WGS 84	
a	UTM E (in meters, to nearest 10 meters): 725,370 meters E			UTM N (in meters, to nearest 10 meters): 3,578,020 meters N	
b	**AND** Latitude (deg., min., sec.): 32° 18' 59" N			Longitude (deg., min., sec.): 108° 36' 22" W	
3	Name and zip code of nearest New Mexico town: Lordsburg, NM 88045				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From the intersection of Main Street/US-70 and I-10 in Lordsburg, head on I-10 eastbound for approximately 7 miles. Take exit #29, and turn left onto Ulmoris Road. Follow Ulmoris under the freeway and across the access road, then take a right into the facility.				
5	The facility is 3 miles east-southeast of Lordsburg, NM.				
6	Status of land at facility (check one): ☑ Private ☐ Indian/Pueblo ☐ Federal BLM ☐ Federal Forest Service ☐ Other (specify)				
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: Municipalities: Lordsburg, NM Indian Tribes: none Counties: Hidalgo County, Grant County				
8	**20.2.72** NMAC applications **only**: Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see www.env.nm.gov/air-quality/modeling-publications/)? ☑ Yes ☐ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers: Arizona – 42 km				
9	Name nearest Class I area: Chiricahua National Monument				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 70.73 km				
11	Distance (meters) from the perimeter of the Area of Operations (AO is defined as the plant site inclusive of all disturbed lands, including mining overburden removal areas) to nearest residence, school or occupied structure: ~2,790 meters				
12	Method(s) used to delineate the Restricted Area: Continuous fencing "**Restricted Area**" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.				
13	Does the owner/operator intend to operate this source as a portable stationary source as defined in 20.2.72.7.X NMAC? ☐ Yes ☑ No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.				
14	Will this facility operate in conjunction with other air regulated parties on the same property? ☑ No ☐ Yes If yes, what is the name and permit number (if known) of the other facility? **N/A**				

Section 1-E: Proposed Operating Schedule (The 1-E.1 & 1-E.2 operating schedules may become conditions in the permit.)

1	Facility **maximum** operating ($\frac{\text{hours}}{\text{day}}$): 24	($\frac{\text{days}}{\text{week}}$): 7	($\frac{\text{weeks}}{\text{year}}$): 52	($\frac{\text{hours}}{\text{year}}$): 8760		
2	Facility's maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$)? Start: N/A		AM PM	End: N/A		☐AM ☐PM
3	Month and year of anticipated start of construction: N/A (No proposed construction)					
4	Month and year of anticipated construction completion: N/A (No proposed construction)					
5	Month and year of anticipated startup of new or modified facility: N/A (No proposed construction)					
6	Will this facility operate at this site for more than one year? ☑ Yes ☐ No					

Section 1-F: Other Facility Information

1	Are there any current Notice of Violations (NOV), compliance orders, or any other compliance or enforcement issues related to this facility? ☐ Yes ☑ No If yes, specify:		
a	If yes, NOV date or description of issue: N/A		NOV Tracking No: N/A
b	Is this application in response to any issue listed in 1-F, 1 or 1a above? ☐ Yes ☑ No If Yes, provide the 1c & 1d info below:		
c	Document Title: N/A	Date: N/A	Requirement # (or page # and paragraph #): N/A
d	Provide the required text to be inserted in this permit: N/A		
2	Is air quality dispersion modeling or modeling waiver being submitted with this application? ☐ Yes ☑ No		
3	Does this facility require an "Air Toxics" permit under 20.2.72.400 NMAC & 20.2.72.502, Tables A and/or B? ☐ Yes ☑ No		
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? ☑ Yes ☐ No		
a	If Yes, what type of source? ☐ **Major** (☐ ≥10 tpy of any single HAP **OR** ☐ ≥25 tpy of any combination of HAPS) **OR** ☑ **Minor** (☑ <10 tpy of any single HAP **AND** ☑ <25 tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? ☑ Yes ☐ No		
a	If yes, include the name of company providing commercial electric power to the facility: PNM Commercial power is purchased from a commercial utility company, which specifically does not include power generated on site for the sole purpose of the user.		

Section 1-G: Streamline Application **(This section applies to 20.2.72.300 NMAC Streamline applications only)**

1	☐ I have filled out Section 18, "Addendum for Streamline Applications." ☑ N/A (This is not a Streamline application.)

Section 1-H: Current Title V Information - Required for all applications from TV Sources

(Title V-source required information for all applications submitted pursuant to 20.2.72 NMAC (Minor Construction Permits), or 20.2.74/20.2.79 NMAC (Major PSD/NNSR applications), and/or 20.2.70 NMAC (Title V))

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC): Philip Baca	Phone: (520) 663-4224
a	R.O. Title: Operations Director Division 1	R.O. e-mail: e-mail: Philip_Baca@kindermorgan.com
b	R. O. Address: 5151 E. Broadway Blvd, Tucson, AZ 85711	
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): Ted Meinhold	Phone: (713) 420-2765
a	A. R.O. Title: Vice President of Operations	A. R.O. e-mail: Ted_Meinhold@kindermorgan.com
b	A. R. O. Address: 1001 Louisiana, Suite 1000, Houston, TX 77002	
3	Company's Corporate or Partnership Relationship to any other Air Quality Permittee (List the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship): N/A	
4	Name of Parent Company ("Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.): Kinder Morgan, Inc.	
a	Address of Parent Company: 1001 Louisiana St, Suite 1000, Houston, TX 77002	
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.): Mojave Pipeline Company, L. L. C.	
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: Richard Duarte (505) 831-7763	
7	Affected Programs to include Other States, local air pollution control programs (i.e. Bernalillo) and Indian tribes: Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B)? If yes, state which ones and provide the distances in kilometers: Arizona – 42 km.	

Section 1-I – Submittal Requirements

Each 20.2.73 NMAC (**NOI**), a 20.2.70 NMAC (**Title V**), a 20.2.72 NMAC (**NSR** minor source), or 20.2.74 NMAC (**PSD**) application package shall consist of the following:

Hard Copy Submittal Requirements:

1) One hard copy **original signed and notarized application package printed double sided 'head-to-toe' 2-hole punched** as we bind the document on top, not on the side; except Section 2 (landscape tables), which should be head-to-head. Please use **numbered tab separators** in the hard copy submittal(s) as this facilitates the review process. For NOI submittals only, hard copies of UA1, Tables 2A, 2D & 2F, Section 3 and the signed Certification Page are required. Please include a copy of the check on a separate page.

2) If the application is for a minor NSR, PSD, NNSR, or Title V application, include one working hard **copy** for Department use. This copy should be printed in book form, 3-hole punched, and **must be double sided**. Note that this is in addition to the head-to-to 2-hole punched copy required in 1) above. Minor NSR Technical Permit revisions (20.2.72.219.B NMAC) only need to fill out Sections 1-A, 1-B, 3, and should fill out those portions of other Section(s) relevant to the technical permit revision. TV Minor Modifications need only fill out Sections 1-A, 1-B, 1-H, 3, and those portions of other Section(s) relevant to the minor modification. NMED may require additional portions of the application to be submitted, as needed.

3) The entire NOI or Permit application package, including the full modeling study, should be submitted electronically. Electronic files for applications for NOIs, any type of General Construction Permit (GCP), or technical revisions to NSRs must be submitted with compact disk (CD) or digital versatile disc (DVD). For these permit application submittals, **two** CD copies are required (in sleeves, not crystal cases, please), with additional CD copies as specified below. NOI applications require only a single CD submittal. Electronic files for other New Source Review (construction) permits/permit modifications or Title V permits/permit modifications can be submitted on CD/DVD or sent through AQB's secure file transfer service.

Electronic files sent by (check one):

☐ CD/DVD attached to paper application

☑ secure electronic transfer. Air Permit Contact Name: Adam Erenstein, Email: AErenstein@trinityconsultants.com, Phone number: (505) 266-6611.

a. If the file transfer service is chosen by the applicant, after receipt of the application, the Bureau will email the applicant with instructions for submitting the electronic files through a secure file transfer service. Submission of the electronic files through the file transfer service needs to be completed within 3 business days after the invitation is received, so the applicant should ensure that the files are ready when sending the hard copy of the application. The applicant will not need a password to complete the transfer. **Do not use the file transfer service for NOIs, any type of GCP, or technical revisions to NSR permits.**

4) Optionally, the applicant may submit the files with the application on compact disk (CD) or digital versatile disc (DVD) following the instructions above and the instructions in 5 for applications subject to PSD review.

5) If **air dispersion modeling** is required by the application type, include the **NMED Modeling Waiver** and/or electronic air dispersion modeling report, input, and output files. The dispersion modeling ***summary report only*** should be submitted as hard copy(ies) unless otherwise indicated by the Bureau.

6) If the applicant submits the electronic files on CD and the application is subject to PSD review under 20.2.74 NMAC (PSD) or NNSR under 20.2.79 NMC include,
   a. one additional CD copy for US EPA,
   b. one additional CD copy for each federal land manager affected (NPS, USFS, FWS, USDI) and,
   c. one additional CD copy for each affected regulatory agency other than the Air Quality Bureau.

   If the application is submitted electronically through the secure file transfer service, these extra CDs do not need to be submitted.

Electronic Submittal Requirements [in addition to the required hard copy(ies)]:

1) All required electronic documents shall be submitted as 2 separate CDs or submitted through the AQB secure file transfer service. Submit a single PDF document of the entire application as submitted and the individual documents comprising the application.

2) The documents should also be submitted in Microsoft Office compatible file format (Word, Excel, etc.) allowing us to access the text and formulas in the documents (copy & paste). Any documents that cannot be submitted in a Microsoft Office compatible format shall be saved as a PDF file from within the electronic document that created the file. If you are unable to provide Microsoft office compatible electronic files or internally generated PDF files of files (items that were not created electronically:

i.e. brochures, maps, graphics, etc,), submit these items in hard copy format. We must be able to review the formulas and inputs that calculated the emissions.

3) It is preferred that this application form be submitted as 4 electronic files (3 MSWord docs: Universal Application section 1 [UA1], Universal Application section 3-19 [UA3], and Universal Application 4, the modeling report [UA4]) and 1 Excel file of the tables (Universal Application section 2 [UA2]). Please include as many of the 3-19 Sections as practical in a single MS Word electronic document. Create separate electronic file(s) if a single file becomes too large or if portions must be saved in a file format other than MS Word.

4) The electronic file names shall be a maximum of 25 characters long (including spaces, if any). The format of the electronic Universal Application shall be in the format: "A-3423-FacilityName". The "A" distinguishes the file as an application submittal, as opposed to other documents the Department itself puts into the database. Thus, all electronic application submittals should begin with "A-". Modifications to existing facilities should use the core permit number (i.e. '3423') the Department assigned to the facility as the next 4 digits. Use 'XXXX' for new facility applications. The format of any separate electronic submittals (additional submittals such as non-Word attachments, re-submittals, application updates) and Section document shall be in the format: "A-3423-9-description", where "9" stands for the section # (in this case Section 9-Public Notice). Please refrain, as much as possible, from submitting any scanned documents as this file format is extremely large, which uses up too much storage capacity in our database. Please take the time to fill out the header information throughout all submittals as this will identify any loose pages, including the Application Date (date submitted) & Revision number (0 for original, 1, 2, etc.; which will help keep track of subsequent partial update(s) to the original submittal. Do not use special symbols (#, @, etc.) in file names. The footer information should not be modified by the applicant.

Table of Contents

Table 2-A: Regulated Emission Sources

Unit and stack numbering must correspond throughout the application package. If applying for a NOI under 20.2.73 NMAC, equipment exemptions under 2.72.202 NMAC do not apply.

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
A-01	Regenerative cycle turbine	General Electric	M3712R	95029	7,150 hp*	7,150 hp*	(pre-12/1/1952 12/1/1952	N/A A-01	2010 0201	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
A-02	Regenerative cycle turbine	General Electric	M3712R	95032	7,150 hp*	7,150 hp*	(pre-1/1/1953 1/1/1953	N/A A-02	2010 0201	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
B-01	Regenerative cycle turbine	General Electric	M3102R	147875	10,260 hp*	10,260 hp*	(pre-5/1/1969) 5/1/1969	N/A B-01	2010 0201	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
C-01	Combustion turbine	Solar Mars	100S	MC03282	14,521 hp*	14,521 hp*	(pre-2/27/2004) 2/27/2004	N/A C-01	3108 8811	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
F-001	Fugitive emissions (associated with units A-01, A-02 & B-01)	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	3108 8811	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
F-002	Fugitive emissions (associated with unit C-01)	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	3108 8811	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
C-01 SSM	SSM emisssions from turbine C-01	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	3108 8811	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
Venting (SSM)	Compressor & associated piping blowdowns during routine & predictable SSM	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	3108 8811	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
Venting (M1)	Compressor & associated piping blowdowns during malfuntion	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	3108 8811	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
AUX C-01	Auxiliary reciprocating engine (for emergency generator)	Waukesha	H24GL	C-94498/1	558 hp	558 hp	(pre-1/28/2004) 1/28/2004	N/A AUX C-01	2020 0253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	SI 4SLB	N/A

* Turbine horsepowers are based on International Organization for Standardization (ISO) conditions

[1] Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.

[2] Specify dates required to determine regulatory applicability.

[3] To properly account for power conversion efficiencies, generator set rated capacity shall be reported as the rated capacity of the engine in horsepower, not the kilowatt capacity of the generator set.

[4] "4SLB" means four stroke lean burn engine, "4SRB" means four stroke rich burn engine, "2SLB" means two stroke lean burn engine, "CI" means compression ignition, and "SI" means spark ignition

Table 2-B: Insignificant Activities[1] (20.2.70 NMAC) OR Exempted Equipment (20.2.72 NMAC)

All 20.2.70 NMAC (Title V) applications must list all Insignificant Activities in this table. All 20.2.72 NMAC applications must list Exempted Equipment in this table. If equipment listed on this table is exempt under 20.2.72.202.B.5, include emissions calculations and emissions totals for 202.B.5 "similar functions" units, operations, and activities in Section 6, Calculations. Equipment and activities exempted under 20.2.72.202 NMAC may not necessarily be Insignificant under 20.2.70 NMAC (and vice versa). Unit & stack numbering must be consistent throughout the application package. Per Exemptions Policy 02-012.00 (see http://www.env.nm.gov/aqb/permit/aqb_pol.html), 20.2.72.202.B NMAC Exemptions do not apply, but 20.2.72.202.A NMAC exemptions do apply to NOI facilities under 20.2.73 NMAC. List 20.2.72.301.D.4 NMAC Auxiliary Equipment for Streamline applications in Table 2-A. The List of Insignificant Activities (for TV) can be found online at https://www.env.nm.gov/wp-content/uploads/sites/2/2017/10/InsignificantListTitleV.pdf. TV sources may elect to enter both TV Insignificant Activities and Part 72 Exemptions on this form.

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction[2]	For Each Piece of Equipment, Check Onc
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction[2]	
T-001	Lube oil tank	N/A	N/A	6300 gal	20.2.72.202.B(2)	(pre-1971)	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	6300 gal	IA List Item #5	1971	
T-002	Used oil/water tank underground	N/A	N/A	1000 gal	20.2.72.202.B(2)	(pre-1985)	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	1000 gal	IA List Item #5	1985	
T-004	Used oil/water tank underground	N/A	N/A	1000 gal	20.2.72.202.B(2)	(pre-1985)	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	1000 gal	IA List Item #5	1985	
T-006	Lube oil tank	N/A	N/A	500 gal	20.2.72.202.B(2)	2004	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	500 gal	IA List Item #5	2004	
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

[1] Insignificant activities exempted due to size or production rate are defined in 20.2.70.300.D.6, 20.2.70.7.Q NMAC, and the NMED/AQB List of Insignificant Activities, dated September 15, 2008. Emissions from these insignificant activities do not need to be reported, unless specifically requested.

[2] Specify date(s) required to determine regulatory applicability.

Table 2-C: Emissions Control Equipment

Unit and stack numbering must correspond throughout the application package. Only list control equipment for TAPs if the TAP's maximum uncontrolled emissions rate is over its respective threshold as listed in 20.2.72 NMAC, Subpart V, Tables A and B. In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions.

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s)[1]	Efficiency (% Control by Weight)	Method used to Estimate Efficiency
N/A - No emissions control equipment is installed at the facility.						

[1] List each control device on a separate line. For each control device, list all emission units controlled by the control device.

Table 2-D: Maximum Emissions (under normal operating conditions)

☐ **This Table was intentionally left blank because it would be identical to Table 2-E.**

Maximum Emissions are the emissions at maximum capacity and prior to (in the absence of) pollution control, emission-reducing process equipment, or any other emission reduction. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless otherwise approved by the Department. List Hazardous Air Pollutants (HAP) & Toxic Air Pollutants (TAPs) in Table 2-I. Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Totals																		

[1]**Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but PM is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

Table 2-E: Requested Allowable Emissions

Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or $1.41E^{-4}$).

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
A-01	46.60	204.00	7.40	32.40	0.13	0.56	0.42	1.80	0.50	2.30	0.50	2.30	0.50	2.30	-	-	-	-
A-02	46.60	204.00	7.40	32.40	0.13	0.56	0.42	1.80	0.50	2.30	0.50	2.30	0.50	2.30	-	-	-	-
B-01	62.00	272.00	6.40	28.10	0.13	0.58	0.53	2.30	0.70	3.00	0.70	3.00	0.70	3.00	-	-	-	-
C-01	10.75	47.10	13.04	57.10	0.38	1.60	0.75	3.30	1.10	4.70	1.10	4.70	1.10	4.70	-	-	-	-
F-001	-	-	-	-	0.13	0.56	-	-	-	-	-	-	-	-	-	-	-	-
F-002	-	-	-	-	0.13	0.56	-	-	-	-	-	-	-	-	-	-	-	-
AUX C-01	16.20	4.10	1.30	0.31	0.47	0.12	0.0014	0.00036	0.4	0.0099	0.4	0.0099	0.4	0.0099	-	-	-	-
Totals	182.15	731.20	35.54	150.31	1.50	4.54	2.12	9.20	3.20	12.31	3.20	12.31	3.20	12.31				

[1] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but it is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

Table 2-F: Additional Emissions during Startup, Shutdown, and Routine Maintenance (SSM)

☐ This table is intentionally left blank since all emissions at this facility due to routine or predictable startup, shutdown, or scehduled maintenance are no higher than those listed in Table 2-E and a malfunction emission limit is not already permitted or requested. If you are required to report GHG emissions as described in Section 6a, include any GHG emissions during Startup, Shutdown, and/or Scheduled Maintenance (SSM) in Table 2-P. Provide an explanations of SSM emissions in Section 6 and 6a.

All applications for facilities that have emissions during routine our predictable startup, shutdown or scheduled maintenance (SSM)[1], including NOI applications, must include in this table the Maximum Emissions during routine or predictable startup, shutdown and scheduled maintenance (20.2.7 NMAC, 20.2.72.203.A.3 NMAC, 20.2.73.200.D.2 NMAC). In Section 6 and 6a, provide emissions calculations for all SSM emissions reported in this table. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (https://www.env.nm.gov/aqb/permit/aqb_pol.html) for more detailed instructions. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		PM[2]		PM10[2]		PM2.5[2]		H_2S[3]		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
C-01 SSM	-	-	596.80	18.8	**	*	-	-	-	-	-	-	-	-	-	-	-	-
Venting (SSM)	-	-	-	-	~	15.00	-	-	-	-	-	-	-	-	0.27	0.0039	-	-
Totals	-	-	596.80	18.8	**	15.00	-	-	-	-	-	-	-	-	0.27	0.00	-	-

[1] **For instance**, if the short term steady-state Table 2-E emissions are 5 lb/hr and the SSM rate is 12 lb/hr, enter 7 lb/hr in this table. If the annual steady-state Table 2-E emissions are 21.9 TPY, and the number of scheduled SSM events result in annual emissions of 31.9 TPY, enter 10.0 TPY in the table below.

[2] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but it is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

[3] H_2S emissions were calculated for episodic SSM events. The H_2S emission rate is conservatively based on 0.25 grains of H_2S per 100 scf of gas due to customer obligations per gas tariffs. In reality the H_2S emissions are significantly less than what is being requested based on sampling data. The proposed maximum facility-wide hourly H_2S emission rate is 0.268 lb/hr. Blowdown ventings do not happen simultaneously.

~ Indicates that an hourly limit is not appropriate for this emission type

*In lieu of a tpy limit, Table A and Condition E of NSR Permit PSD-2810-M4 limit EPNG to 252 events per year.

**Although manufacturer's data indicates that the lb/event VOC emissions during startup and/or shutdown typically exceed the lb/hr permit limit, VOC emissions from C-01 are insignificant (less than 1 tpy) for 252 events per year.

Table 2-G: Stack Exit and Fugitive Emission Rates for Special Stacks

☐ I have elected to leave this table blank because this facility does not have any stacks/vents that split emissions from a single source or combine emissions from more than one source listed in table 2-A. Additionally, the emission rates of all stacks match the Requested allowable emission rates stated in Table 2-E.

Use this table to list stack emissions (requested allowable) from split and combined stacks. List Toxic Air Pollutants (TAPs) and Hazardous Air Pollutants (HAPs) in Table 2-I. List all fugitives that are associated with the normal, routine, and non-emergency operation of the facility. Unit and stack numbering must correspond throughout the application package. Refer to Table 2-E for instructions on use of the "-" symbol and on significant figures.

Stack No.	Serving Unit Number(s) from Table 2-A	NOx		CO		VOC		SOx		PM		PM10		PM2.5		☐ H_2S or ☐ Lead	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Totals:																	

Table 2-H: Stack Exit Conditions

Unit and stack numbering must correspond throughout the application package. Include the stack exit conditions for each unit that emits from a stack, including blowdown venting parameters and tank emissions. If the facility has multiple operating scenarios, complete a separate Table 2-H for each scenario and, for each, type scenario name here:

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H-Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter (ft)
						(acfs)	(dscfs)			
A-01	A-01	V	No	51	580	2601	N/A	5	92	6.00
A-02	A-02	V	No	51	580	2601	N/A	5	92	6.00
B-01	B-01	V	No	52	580	3348	N/A	5	87	7.00
C-01	C-01	V	No	38	773	3234	N/A	5	57	8.50
AUX C-01	AUX C-01	V	No	23	713	1594	N/A	--	76.13	0.67

Table 2-I: Stack Exit and Fugitive Emission Rates for HAPs and TAPs

In the table below, report the Potential to Emit for each HAP from each regulated emission unit listed in Table 2-A, only if the entire facility emits the HAP at a rate greater than or equal to one (1) ton per year For each such emission unit, HAPs shall be reported to the nearest 0.1 tpy. Each facility-wide Individual HAP total and the facility-wide Total HAPs shall be the sum of all HAP sources calculated to the nearest 0.1 ton per year. Per 20.2.72.403.A.1 NMAC, facilities not exempt [see 20.2.72.402.C NMAC] from TAP permitting shall report each TAP that has an uncontrolled emission rate in excess of its pounds per hour screening level specified in 20.2.72.502 NMAC. TAPs shall be reported using one more significant figure than the number of significant figures shown in the pound per hour threshold corresponding to the substance. Use the HAP nomenclature as it appears in Section 112 (b) of the 1990 CAAA and the TAP nomenclature as it listed in 20.2.72.502 NMAC. Include tank-flashing emissions estimates of HAPs in this table. For each HAP or TAP listed, fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected or the pollutant is emitted in a quantity less than the threshold amounts described above.

Stack No.	Unit No.(s)	Total HAPs		Acetaldehyde ☑ HAP or ☐ TAP		Formaldehyde ☑ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
A-01	A-01	0.66	2.87	0.27	1.17	0.27	1.20												
A-02	A-02	0.66	2.87	0.27	1.17	0.27	1.20												
B-01	B-01	0.94	4.12	0.38	1.68	0.39	1.72												
C-01	C-01	1.33	5.83	0.54	2.37	0.55	2.43												
N/A	F-001	0.0027	0.012	-	-	-	-												
N/A	F-002	0.0027	0.012	-	-	-	-												
N/A	C-01 SSM	-	-	-	-	-	-												
N/A	Venting (SSM)	~	0.10	-	-	-	-												
N/A	AUX C-01	0.2908	0.009	0.21	0.054	0.034	0.0085												
Totals:		3.88	15.82	1.67	6.44	1.53	6.54												

Table 2-J: Fuel

Specify fuel characteristics and usage. Unit and stack numbering must correspond throughout the application package.

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, …)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
A-01	Sweet Natural Gas	Pipeline Quality Natural Gas	925 Btu/scf	58.2 Mscf/hr	509.5 MMscf/yr	5 grains S/100 scf	Neg.
A-02	Sweet Natural Gas	Pipeline Quality Natural Gas	925 Btu/scf	58.2 Mscf/hr	509.5 MMscf/yr	5 grains S/100 scf	Neg.
B-01	Sweet Natural Gas	Pipeline Quality Natural Gas	925 Btu/scf	74.7 Mscf/hr	654.5 MMscf/yr	5 grains S/100 scf	Neg.
C-01	Sweet Natural Gas	Pipeline Quality Natural Gas	925 Btu/scf	105.1 Mscf/hr	921.0 MMscf/yr	5 grains S/100 scf	Neg.
AUX C-01	Sweet Natural Gas	Pipeline Quality Natural Gas	925 Btu/scf	4.3 Mscf/hr	2.1 MMscf/yr	5 grains S/100 scf	Neg.

Table 2-K: Liquid Data for Tanks Listed in Table 2-L

For each tank, list the liquid(s) to be stored in each tank. If it is expected that a tank may store a variety of hydrocarbon liquids, enter "mixed hydrocarbons" in the Composition column for that tank and enter the corresponding data of the most volatile liquid to be stored in the tank. If tank is to be used for storage of different materials, list all the materials in the "All Calculations" attachment, run the newest version of TANKS on each, and use the material with the highest emission rate to determine maximum uncontrolled and requested allowable emissions rate. The permit will specify the most volatile category of liquids that may be stored in each tank. Include appropriate tank-flashing modeling input data. Use additional sheets if necessary. Unit and stack numbering must correspond throughout the application package.

Tank No.	SCC Code	Material Name	Composition	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb*mol)	Average Storage Conditions		Max Storage Conditions	
						Temperature (°F)	True Vapor Pressure (psia)	Temperature (°F)	True Vapor Pressure (psia)
N/A - All tanks at the facility are Trivial or Insignificant Activities (as identified in Table 2-B).									

Table 2-L: Tank Data

Include appropriate tank-flashing modeling input data. Use an addendum to this table for unlisted data categories. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary. See reference Table 2-L2. Note: 1.00 bbl = 10.159 M3 = 42.0 gal

Tank No.	Date Installed	Materials Stored	Seal Type (refer to Table 2-LR below)	Roof Type (refer to Table 2-LR below)	Capacity		Diameter (M)	Vapor Space (M)	Color (from Table VI-C)		Paint Condition (from Table VI-C)	Annual Throughput (gal/yr)	Turn-overs (per year)
					(bbl)	(M^3)			Roof	Shell			
N/A - All tanks at the facility are Trivial or Insignificant Activities (as identified in Table 2-B).													

Table 2-L2: Liquid Storage Tank Data Codes Reference Table

Roof Type	Seal Type, Welded Tank Seal Type		Seal Type, Riveted Tank Seal Type		Roof, Shell Color	Paint Condition
FX: Fixed Roof	**Mechanical Shoe Seal**	**Liquid-mounted resilient seal**	**Vapor-mounted resilient seal**	**Seal Type**	**WH**: White	Good
IF: Internal Floating Roof	**A**: Primary only	**A**: Primary only	**A**: Primary only	**A**: Mechanical shoe, primary only	**AS**: Aluminum (specular)	Poor
EF: External Floating Roof	**B**: Shoe-mounted secondary	**B**: Weather shield	**B**: Weather shield	**B**: Shoe-mounted secondary	**AD**: Aluminum (diffuse)	
P: Pressure	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**LG**: Light Gray	
					MG: Medium Gray	
					BL: Black	
					OT: Other (specify)	

Note: 1.00 bbl = 0.159 M^3 = 42.0 gal

Table 2-M: Materials Processed and Produced (Use additional sheets as necessary.)

Material Processed				Material Produced			
Description	**Chemical Composition**	**Phase (Gas, Liquid, or Solid)**	**Quantity (specify units)**	**Description**	**Chemical Composition**	**Phase**	**Quantity (specify units)**
N/A - The facility is a natural gas compressor station; no applicable requirements exist for raw materials processed or produced.							

Table 2-N: CEM Equipment

Enter Continuous Emissions Measurement (CEM) Data in this table. If CEM data will be used as part of a federally enforceable permit condition, or used to satisfy the requirements of a state or federal regulation, include a copy of the CEM's manufacturer specification sheet in the Information Used to Determine Emissions attachment. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

Stack No.	Pollutant(s)	Manufacturer	Model No.	Serial No.	Sample Frequency	Averaging Time	Range	Sensitivity	Accuracy
N/A - No CEMs are utilized at Lordsburg Compressor Station.									

Table 2-O: Parametric Emissions Measurement Equipment

Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

Unit No.	Parameter/Pollutant Measured	Location of Measurement	Unit of Measure	Acceptable Range	Frequency of Maintenance	Nature of Maintenance	Method of Recording	Averaging Time
N/A - No Parametric Emissions Measurement (PEMs) equipment is utilized at Lordsburg Compressor Station.								

Table 2-P: Greenhouse Gas Emissions

Applications submitted under 20.2.70, 20.2.72, & 20.2.74 NMAC are required to complete this Table. Power plants, Title V major sources, and PSD major sources must report and calculate all GHG emissions for each unit. Applicants must report potential emission rates in short tons per year (see Section 6.a for assistance). Include GHG emissions during Startup, Shutdown, and Scheduled Maintenance in this table. For minor source facilities that are not power plants, are not Title V, or are not PSD, there are three options for reporting GHGs 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHG as a second separate unit; OR 3) check the following box ☐ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC ton/yr[2]									**Total GHG** Mass Basis ton/yr[4]	**Total CO_2e** ton/yr[5]
Unit No.	**GWPs [1]**	**1**	**298**	**25**	**22,800**	**footnote 3**										
A-01	**mass GHG**	30611.3	0.058	0.58											30611.9	
	CO_2e	30611.3	17.3	14.5												30643.1
A-02	**mass GHG**	30611.3	0.058	0.58											30611.9	
	CO_2e	30611.3	17.3	14.5												30643.1
B-01	**mass GHG**	39323.0	0.074	0.74											39323.8	
	CO_2e	39323.0	22.1	18.5												39363.6
C-01	**mass GHG**	55334.6	0.10	1.00											55335.7	
	CO_2e	55334.6	29.8	25.0												55389.4
F-001	**mass GHG**	-	-	-											-	
	CO_2e	-	-	-												-
F-002	**mass GHG**	-	-	-											-	
	CO_2e	-	-	-												-
C-01 SSM	**mass GHG**	463.7	-	-											463.7	
	CO_2e	463.7	-	-												463.7
Venting (SSM)	**mass GHG**	13.6	-	609.8											623.4	
	CO_2e	13.6	-	15245.0												15258.6
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
	mass GHG															
	CO_2e															
Total	**mass GHG**	156357.5	0.29	612.7											156970.5	
	CO_2e	156357.5	86.4	15317.5												171761.4

[1] **GWP** (Global Warming Potential): Applicants must use the most current GWPs codified in Table A-1 of 40 CFR part 98. GWPs are subject to change, therefore, applicants need to check 40 CFR 98 to confirm GWP values.

[2] For **HFCs** or **PFCs** describe the specific HFC or PFC compound and use a separate column for each individual compound.

[3] For each new compound, enter the appropriate GWP for each HFC or PFC compound from Table A-1 in 40 CFR 98.

[4] Green house gas emissions on a **mass basis** is the ton per year green house gas emission before adjustment with its GWP.

[5] **CO_2e** means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the green house gas by its GWP.

Section 3

Application Summary

The **Application Summary** shall include a brief description of the facility and its process, the type of permit application, the applicable regulation (i.e. 20.2.72.200.A.X, or 20.2.73 NMAC) under which the application is being submitted, and any air quality permit numbers associated with this site. If this facility is to be collocated with another facility, provide details of the other facility including permit number(s). In case of a revision or modification to a facility, provide the lowest level regulatory citation (i.e. 20.2.72.219.B.1.d NMAC) under which the revision or modification is being requested. Also describe the proposed changes from the original permit, how the proposed modification will affect the facility's operations and emissions, de-bottlenecking impacts, and changes to the facility's major/minor status (both PSD & Title V).

The **Process Summary** shall include a brief description of the facility and its processes.

Startup, Shutdown, and Maintenance (SSM) routine or predictable emissions: Provide an overview of how SSM emissions are accounted for in this application. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions.

The Lordsburg Compressor Station is owned and operated by El Paso Natural Gas Company, L.L.C. (EPNG). Lordsburg Compressor Station is currently permitted under Title V Operating Permit P131R4 and NSR Permit PSD2810-M5. The facility compresses natural gas for transportation purposes.

This application is being submitted pursuant to 20.2.70.300.B.(2) NMAC for a Title V Renewal application which requires a Title V Permit renewal application be submitted at least twelve (12) months prior to expiration of the current Title V Operating Permit (current permit expires March 8, 2024).

Additionally, EPNG is requesting the removal of Malfunction Emissions (Unit M1) from this permit. No other changes are requested.

Section 4

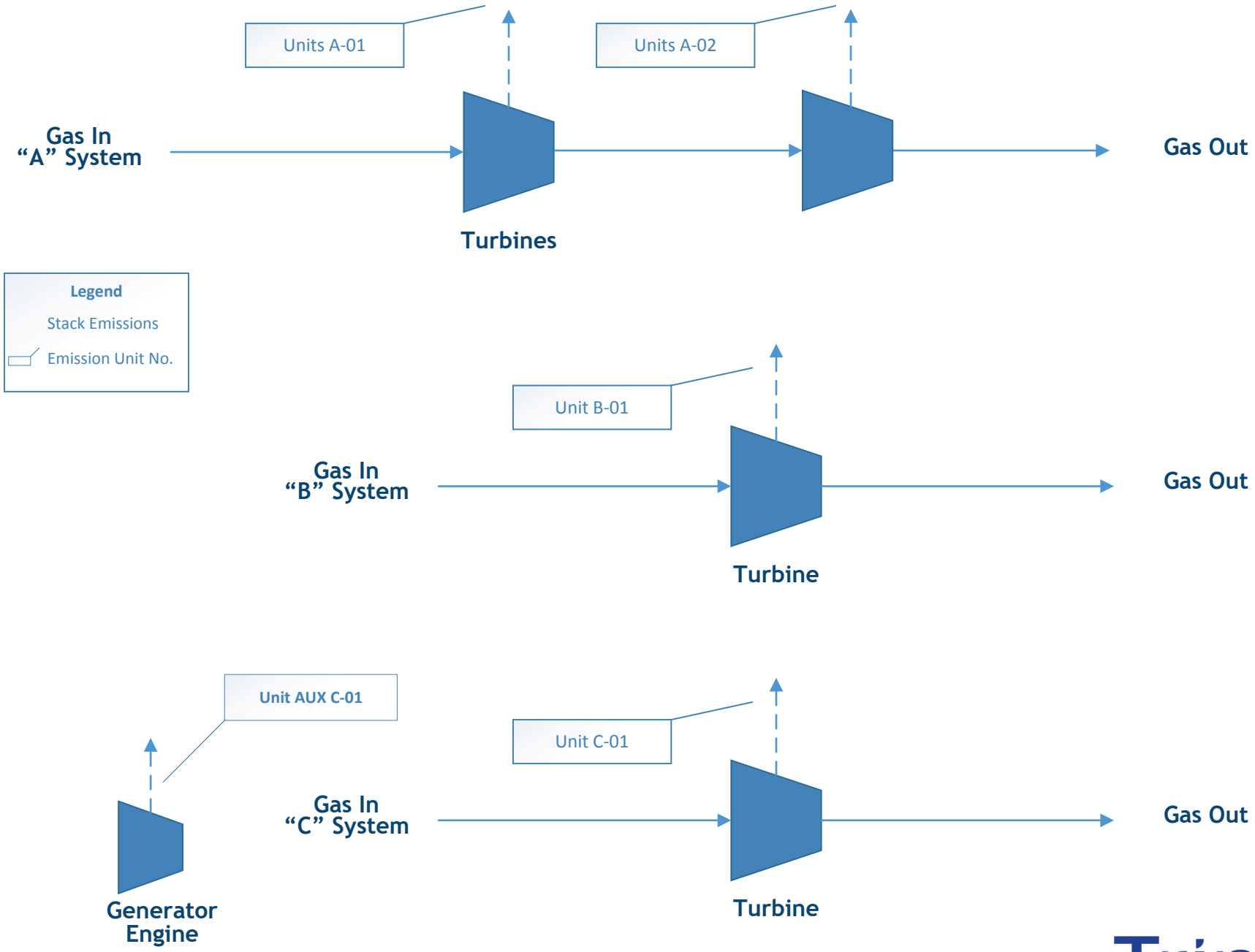
Process Flow Sheet

A **process flow sheet** and/or block diagram indicating the individual equipment, all emission points and types of control applied to those points. The unit numbering system should be consistent throughout this application.

A process flow sheet is attached.

El Paso Natural Gas Company, L.L.C. (Kinder Morgan Company)

Lordsburg Compressor Station | Process Flow Diagram



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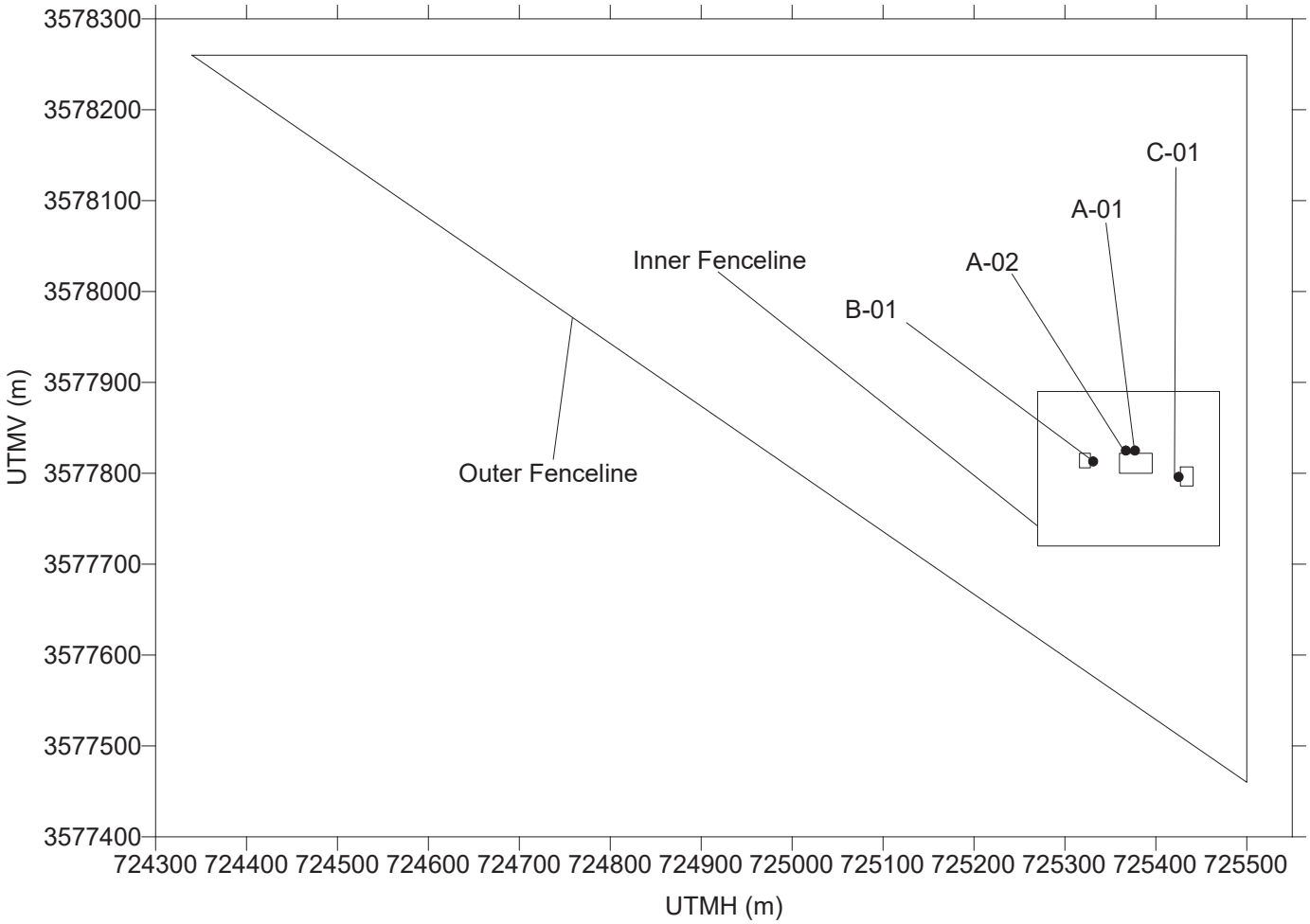
Trinity Consultants

Section 5

Plot Plan Drawn To Scale

A **plot plan drawn to scale** showing emissions points, roads, structures, tanks, and fences of property owned, leased, or under direct control of the applicant. This plot plan must clearly designate the restricted area as defined in UA1, Section 1-D.12. The unit numbering system should be consistent throughout this application.

A plot plan is attached.



Lordsburg Compressor Station
Site Layout

Section 6

All Calculations

Show all calculations used to determine both the hourly and annual controlled and uncontrolled emission rates. All calculations shall be performed keeping a minimum of three significant figures. Document the source of each emission factor used (if an emission rate is carried forward and not revised, then a statement to that effect is required). If identical units are being permitted and will be subject to the same operating conditions, submit calculations for only one unit and a note specifying what other units to which the calculations apply. All formulas and calculations used to calculate emissions must be submitted. The "Calculations" tab in the UA2 has been provided to allow calculations to be linked to the emissions tables. Add additional "Calc" tabs as needed. If the UA2 or other spread sheets are used, all calculation spread sheet(s) shall be submitted electronically in Microsoft Excel compatible format so that formulas and input values can be checked. Format all spread sheets and calculations such that the reviewer can follow the logic and verify the input values. Define all variables. If calculation spread sheets are not used, provide the original formulas with defined variables. Additionally, provide subsequent formulas showing the input values for each variable in the formula. All calculations, including those calculations are imbedded in the Calc tab of the UA2 portion of the application, the printed Calc tab(s), should be submitted under this section.

Tank Flashing Calculations: The information provided to the AQB shall include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., NOI, permit, or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis. If Hysis is used, all relevant input parameters shall be reported, including separator pressure, gas throughput, and all other relevant parameters necessary for flashing calculation.

SSM Calculations: It is the applicant's responsibility to provide an estimate of SSM emissions or to provide justification for not doing so. In this Section, provide emissions calculations for Startup, Shutdown, and Routine Maintenance (SSM) emissions listed in the Section 2 SSM and/or Section 22 GHG Tables and the rational for why the others are reported as zero (or left blank in the SSM/GHG Tables). Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on calculating SSM emissions. If SSM emissions are greater than those reported in the Section 2, Requested Allowables Table, modeling may be required to ensure compliance with the standards whether the application is NSR or Title V. Refer to the Modeling Section of this application for more guidance on modeling requirements.

Glycol Dehydrator Calculations: The information provided to the AQB shall include the manufacturer's maximum design recirculation rate for the glycol pump. If GRI-Glycalc is used, the full input summary report shall be included as well as a copy of the gas analysis that was used.

Road Calculations: Calculate fugitive particulate emissions and enter haul road fugitives in Tables 2-A, 2-D and 2-E for:

1. If you transport raw material, process material and/or product into or out of or within the facility and have PER emissions greater than 0.5 tpy.
2. If you transport raw material, process material and/or product into or out of the facility more frequently than one round trip per day.

Significant Figures:
A. All emissions standards are deemed to have at least two significant figures, but not more than three significant figures.
B. At least 5 significant figures shall be retained in all intermediate calculations.
C. In calculating emissions to determine compliance with an emission standard, the following rounding off procedures shall be used:

(1) If the first digit to be discarded is less than the number 5, the last digit retained shall not be changed;
(2) If the first digit discarded is greater than the number 5, or if it is the number 5 followed by at least one digit other than the number zero, the last figure retained shall be increased by one unit; **and**
(3) If the first digit discarded is exactly the number 5, followed only by zeros, the last digit retained shall be rounded upward if it is an odd number, but no adjustment shall be made if it is an even number.
(4) The final result of the calculation shall be expressed in the units of the standard.

Control Devices: In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions. The applicant can indicate in this section of the

application if they chose to not take credit for the reduction in emission rates. For notices of intent submitted under 20.2.73 NMAC, only uncontrolled emission rates can be considered to determine applicability unless the state or federal Acts require the control. This information is necessary to determine if federally enforceable conditions are necessary for the control device, and/or if the control device produces its own regulated pollutants or increases emission rates of other pollutants.

Emission units at Lordsburg Compressor Station include the following.

- Two regenerative cycle GE M3712R natural gas-fueled compressor turbines.
- One regenerative cycle GE M3102R natural gas-fueled compressor turbine.
- One Solar Mars 100S natural gas-fueled compressor turbine.
- Fugitive emissions from the (previously-grandfathered) GE turbines.
- Fugitive emissions associated with the Solar Mars turbine.
- Startup, shutdown, and maintenance (SSM) emissions.
- One natural gas-fueled Waukesha H24GL emergency generator engine, an insignificant activity
- A number of insignificant or trivial storage tanks that are insignificant from 20.2.70 NMAC requirements.

All criteria pollutant emission rates in this application have previously been reviewed and approved. No changes to these rates, equipment, or operating parameters are being requested in this renewal application; emission calculations and discussion are reproduced here from previous applications and current NSR and Title V permits (PSD-2810-M5 and P131R4).

GE M3712R Turbines (Units A-01 and A-02) & GE M3102R Turbine (Unit B-01)
NOx, CO, VOC, and SO_2 emission rates in this application are taken unchanged from previous permit applications. NOx, CO, and total hydrocarbon (THC) emissions from the GE turbines are based on statistical analysis of test data gathered for similar EPNG General Electric Frame 3 units. VOC emissions are estimated to be 5% of THC emissions, which is a conservative estimation since facility natural gas is typically over 95% (by weight) methane and ethane. SO_2 emissions are based on the maximum allowable total sulfur content of 5 grains per 100 scf in pipeline quality natural gas, and an assumed 100% conversion to SO_2.

HAP emissions are calculated using the latest edition of GRI-HAPCalc, version 3.01, based on the most conservative emission factor (EF) set for turbines.

Particulate emissions from the turbines are duplicated from the August 17, 2005 addendum for revision of Permit PSD-NM-2810-M1. Particulate matter (PM) emissions were calculated using the AP-42 factor for total (condensable + filterable) PM from stationary gas turbines with a 50% added safety factor. Emissions are as presented in the past applications NSR Permit PSD-2810-M5 and Title V Operating Permit P131R4.

Solar Mars 100S Turbine (Unit C-01)
Emissions from unit C-01 are as presented in NSR Permit PSD-2810-M5 and Title V Operating Permit P131R4. NOx, CO, and unburned hydrocarbon (UHC) emissions are based on manufacturer's data. VOC emissions are estimated to be 10% of the UHC emission rate, as recommended by Solar. SO_2 emissions are based on the maximum allowable total sulfur content of 5 grains per 100 scf in pipeline quality natural gas, and an assumed 100% conversion to SO_2. PM emissions from the Solar turbine were calculated using emission factors from Table 3.1-2a of AP-42. The factor used to estimate PM includes both filterable and condensable PM, and was increased by a safety factor of 50% to ensure a conservative estimate.

Fugitive Emissions (Units F-001 and F-002)
Fugitive VOC and HAP emissions from both previously-grandfathered sources (unit F-001) and turbine C-01 (unit F-002) have been calculated using GRI-HAPCalc 3.01. Because a specific count of fugitive emission components in VOC service (valves, pressure relief valves, compressor seals, flanges, etc.) has not been conducted at Lordsburg Compressor Station, the GRIHAPCalc default values were used as a worst-case scenario of all components in gas service at the facility.

Startup, Shutdown, and Maintenance (unit SSM)

Facility and turbine blowdown emissions (units SSM) were calculated using the predicted number of scheduled and unscheduled SSM events, the volume of gas blown down per event (based on historical data), and nominal weight percentages. HAP emissions were calculated assuming the same HAP-to-VOC ratio as the fugitive emission calculations.

<u>Compressor & Associated Piping Blowdowns during SSM</u>
Compressor units are shut down periodically for scheduled maintenance or because market demand or pipeline conditions indicate that the horsepower is not required. When a compressor unit is shut down, the unit piping is vented to the unit blowdown and expansion gas stack. Prior to start-up, the compressor is purged with natural gas to evacuate any air present. The turbine is

then started with a small turbine that uses natural gas (expansion gas). The purge and expansion gas is vented through the unit blowdown and expansion gas stack.

The starting gas volume is measured. The amount of starting gas varies widely based on the duration of the start-up sequence. The calculations were completed with a conservative estimate.

During a station Emergency Shutdown (ESD), the station is isolated and all natural gas in the piping must be purged for safety reasons. The natural gas in the station piping is vented through the station ESD stack.

Unit C-01 SSM

SSM emissions from the Solar Mars turbine (unit C-01) are based on manufacturer's data for typical startup and shutdown events from a Mars 100 unit. The worst-case short term (hourly) emission rates are based on any four startups and shutdowns per hour. Four events represent a worst-case scenario because executing any four startup or shutdown events is logistically unlikely and highly improbable. Since the CO and VOC startup/shutdown emission rates are higher than the emissions for normal operation, calculations were performed to determine the worst-case SSM emissions. It was assumed that there would be a total of 252 shutdown or start-up events per year, based on worst-case historical operation of the unit. Please note the 252 events in a year do not include unsuccessful start-ups or emergency stops, as there are no emissions associated with these events as described in Section 3. Un-combusted VOC, HAP and methane emissions from unit C-01 SSM have been included in unit C-01 SSM.

Emergency Generator Engine Emissions (Unit AUX C-01)

Emissions from the existing emergency generator are included in this application. Emissions of NO_X, CO, VOC, and particulates were estimated using emission factors from AP-42 Table 3.2-2. Emissions of HAP were estimated using GRI-HAPCalc 3.01. Emissions of SO_2 were estimated based on a fuel sulfur content of 5 grains total sulfur per 100 scf.

Emission Calculations - GE Frame 3 Turbines (M3712R)
El Paso Natural Gas - Lordsburg Compressor Station

Source ID: A-01 and A-02

Manufacturer's Specifications:

Turbine ISO Rating:	7150 hp	

Fuel Consumption:

Fuel Heat Value:	925	Btu/scf	LHV
Hourly Fuel Flow:	58158	scf/hr	From original Title V application
Annual Fuel Consumption:	509.5	MMscf/yr	8760 hrs/yr
Turbine Site Heat Input:	53.8	MMBtu/hr	Calculated from hourly flow and fuel heat value

Emission Calculations (Criteria Pollutants):

Pollutant	*Emission Factor*	*Basis*	*Safety Factor*	*lb/hr*	*tpy*
NOx	46.6 lb/hr	Title V permit		46.6	204.1
CO	7.4 lb/hr	Title V permit		7.40	32.4
VOC	0.128 lb/hr	Title V permit		0.13	0.56
SOx	5 gr/100 scf	FERC Tariff		0.42	1.82

Stack Parameters:

Stack Height:	51	ft
Stack Diameter:	6	ft
Exhaust Gas Flow:	156074	acfm
Exhaust Gas Velocity:	92	ft/sec
Exhaust Gas Temperature:	580	°F

El Paso Natural Gas Company - Lordsburg Compressor Station

GE Frame 3 Turbines (M3712R)

Source Description:	Natural gas-fired turbine
Manufacturer:	GE
Model:	M3712R
Unit:	A-01 & A-02

Fuel Heat Value:	925	Btu/scf	
Hourly Fuel Flow:	58158	scf/hr	From original Title V application
Turbine Site Heat Input	53.8	MMBtu/hr	Fuel heat value * hourly fuel flow

PM Calculations

PM (total)		
0.0066	lb/MMBtu	Emission factor from AP-42, Table 3.1-2a
0.4	lb/hr	Emission factor * turbine site heat input
1.6	tpy	lb/hr * 8760 hr/yr / 2000 lb/ton
0.5	lb/hr	Hourly emissions with 50% safety factor
2.3	tpy	Annual emissions with 50% safety factor

Emission Calculations - GE Frame 3 Turbine (M3102R)
El Paso Natural Gas - Lordsburg Compressor Station

Source ID: B-01

Manufacturer's Specifications:

Turbine ISO Rating:	10260	hp

Fuel Consumption:

Fuel Heat Value:	925	Btu/scf	LHV
Hourly Fuel Flow:	74711	scf/hr	From original Title V application
Annual Fuel Consumption:	654.5	MMscf/yr	8760 hrs/yr
Turbine Site Heat Input:	69.1	MMBtu/hr	Calculated from hourly flow and fuel heat value

Emission Calculations (Criteria Pollutants):

Pollutant	*Emission Factor*	*Basis*	*Safety Factor*	*lb/hr*	*tpy*
NOx	62.015 lb/hr	Title V permit		62.0	271.6
CO	6.4138 lb/hr	Title V permit		6.41	28.1
VOC	0.1327 lb/hr	Title V permit		0.13	0.58
SOx	5 gr/100 scf	FERC Tariff		0.53	2.34

Stack Parameters:

Stack Height:	52	ft
Stack Diameter:	7	ft
Exhaust Gas Flow:	200889	acfm
Exhaust Gas Velocity:	87	ft/sec
Exhaust Gas Temperature:	580	°F

El Paso Natural Gas Company - Lordsburg Compressor Station

GE Frame 3 Turbine (M3102R)

Source Description:	Natural gas-fired turbine
Manufacturer:	GE
Model:	M3102R
Unit:	B-01

Fuel Heat Value:	925	Btu/scf	
Hourly Fuel Flow:	74711	scf/hr	From original Title V application
Turbine Site Heat Input	69.1	MMBtu/hr	Fuel heat value * hourly fuel flow

PM Calculations

PM (total)		
0.0066	lb/MMBtu	Emission factor from AP-42, Table 3.1-2a
0.5	lb/hr	Emission factor * turbine site heat input
2.0	tpy	lb/hr * 8760 hr/yr / 2000 lb/ton
0.7	lb/hr	Hourly emissions with 50% safety factor
3.0	tpy	Annual emissions with 50% safety factor

Emission Calculations - Solar Mars 100-T15000S
El Paso Natural Gas - Lordsburg Compressor Station

Source ID: C-01

Manufacturer's Specifications:

Turbine ISO Rating:	14521	hp

Fuel Consumption:

Fuel Heat Value:	1020	Btu/scf	Nominal
Hourly Fuel Flow:	105137	scf/hr	Mfg data
Annual Fuel Consumption:	921.0	MMscf/yr	Mfg data
Turbine Site Heat Input:	107.24	MMBtu/hr	Mfg data

Emission Calculations (Criteria Pollutants):

Pollutant	*Emission Factor*	*Basis*	*Safety Factor*	*lb/hr*	*tpy*
NOx	10.75 lb/hr	PSD Permit Application		10.75	47.1
CO	13.04 lb/hr	PSD Permit Application		13.04	57.1
VOC	0.38 lb/hr	PSD Permit Application		0.38	1.6
SOx	5 gr/100 scf	FERC Tariff		0.75	3.3

Stack Parameters:

Stack Height:	38	ft
Stack Diameter:	8.5	ft
Exhaust Gas Flow:	194068	acfm
Exhaust Gas Velocity:	57	ft/sec
Exhaust Gas Temperature:	773	°F

El Paso Natural Gas Company - Lordsburg Compressor Station

Solar Mars 100-T15000S Turbine

Source Description:	Natural gas-fired turbine
Manufacturer:	Solar Mars
Model:	100-T15000S
Unit:	C-01

Turbine Site Heat Input	107.24	MMBtu/hr	Manufacturer's data

PM Calculations

PM (total)		
0.0066	lb/MMBtu	Emission factor from AP-42, Table 3.1-2a
0.7	lb/hr	Emission factor * turbine site heat input
3.1	tpy	lb/hr * 8760 hr/yr / 2000 lb/ton
1.1	lb/hr	Hourly emissions with 50% safety factor
4.7	tpy	Annual emissions with 50% safety factor

Turbine SSM Emissions

SoLoNOx Turbine Startup and Shutdown (Unit C-01)

MSS Emission Rates, Per Event

Event Description: "C" Plant Turbine Start-up/Shutdown

	NOx[1] (lbs)	CO[1] (lbs)	UHC[1] (lbs)	CO_2[1] (lbs)
Total Emissions per Start (lbs)	1.4	123.5	7.1	829
Total Emissions per Shutdown (lbs)	1.7	149.2	8.5	920

	lb/hr [2]	Allowable lb/hr	Exceeds Limit?
NOx Emissions:	6.8	10.75	No
CO Emissions:	596.8	13.04	Yes
VOC Emissions:	34.0	0.38	Yes

CO Emissions per event:	596.8	lb/hr[2]	
CO Emissions:	18.8	tons/yr[3]	lb/event* events/yr * ton/2000 lb
VOC Emissions per event:	34.00	lb/hr[2]	
VOC Emissions:	1.07	tons/yr[3]	lb/event* events/yr * ton/2000 lb
CO_2 Emissions per event:	-	lb/hr[2]	
CO_2 Emissions:	463.7	tons/yr[3]	lb/event* events/yr * ton/2000 lb

1. Based on Solar Turbine PIL 70 Product Information Letter (19 August 2015) " Emission Estimates at Start-up, Shutdown, and Commissioning for SoLoNOx Combustion Products" Table 3.

2. Hourly emissions are based on short term (hourly) emission rates of any four startups and shutdowns per hour. Worst case hourly emissions are used in this calculation.

3. Annual emissions are based on 252 events per year. This allows the facility to have 252 shutdowns or start-ups in a year.

SSM Emissions

Unit: SSM
Description: Facility-wide startup, shutdown, and maintenance emissions

Gas Analysis (Typical)

VOC weight %:	2.00%		Nominal
CO2 weight %:	2.00%		Nominal
CH4 weight %:	90.00%		Nominal
Gas molecular weight:	17.00	lb/lb-mol	Nominal
Gas molar volume:	378.61	scf/lb-mol	Constant
Gas density:	0.0449	lb/scf	Gas MW / Molar volume

Turbine Blowdown Venting (BD-Unit)

SSM Emission Rates, Per Event

Event Description:	Planned Maintenance and Normal Shutdown		
Volume per event:	43	Mscf/event	Estimated (varies)
VOC Emissions:	38.6	lb/event	lb/scf * scf/event * VOC wt %

SSM Emission Rates, Annual

Annual volume:	9114	Mscf/yr	Expected blowdown volume
VOC Emissions:	4.1	tons/yr	lb/scf * scf/event * VOC wt % * ton/2000 lb

Turbine Starting Gas (BD-Unit)

SSM Emission Rates, Per Event

Event Description:	Normal Startup		
Volume per event:	150	Mscf/event	Estimated (varies)
VOC Emissions:	135	lb/event	lb/scf * scf/event * VOC wt %

SSM Emission Rates, Annual

Annual volume:	11774	Mscf/yr	Expected blowdown volume
VOC Emissions:	5.3	tons/yr	lb/scf * scf/event * VOC wt %

Facility Blowdown Venting (BD-ESD)

SSM Emission Rates, Per Event

Event Description:	Station ESD		
Volume per event:	750	Mscf/event	Estimated (varies)
VOC Emissions:	674	lb/event	lb/scf * scf/event * VOC wt %

SSM Emission Rates, Annual

Annual volume:	750	Mscf/yr	Assumes 1 event per year
VOC Emissions:	0.337	tons/yr	lb/event * event/year * ton/2000lb

Facility VOC Total: 9.72 tons/yr

Facility Blowdown Total

VOC Emissions:	15.0	tons/yr	Permitted limit
HAP emissions:	0.10	tons/yr	Assumes same HAP/VOC ratio as fugitives
CO2 Emissions:	15.0	tons/yr	VOC Emissions / %VOC * %CO2
CH4 Emissions:	675.0	tons/yr	VOC Emissions / %VOC * %CH4
CO2e Emissions:	16890.0	tons/yr	

Facility-Wide SSMTotal

VOC	HAP	CO2	CH4	CO2e	
15.0	0.103	15.0	675.0	16890.0	tons/yr

SSM Emissions

Unit: SSM
Description: Facility-wide startup, shutdown, and maintenance emissions

Gas Analysis (Typical)

H_2S	0.25	gr H_2S	
	100	scf	Nominal (Max amount allowed in pipeline quality natural gas)

Turbine Blowdown Venting (BD-Unit)

SSM Emission Rates, Per Event

Event Description:	Planned Maintenance and Normal Shutdown		
Volume per event:	43	Mscf/event	Estimated (varies)
H_2S Emissions:	0.015	lb/event	gr/scf * scf/event * 1lb/7000gr

SSM Emission Rates, Annual

Annual volume:	9114	Mscf/yr	Expected blowdown volume
H_2S Emissions:	0.0016	tons/yr	gr/scf * scf/event * 1lb/7000gr * ton/2000 lb

Turbine Starting Gas (BD-Unit)

SSM Emission Rates, Per Event

Event Description:	Normal Startup		
Volume per event:	150	Mscf/event	Estimated (varies)
H_2S Emissions:	0.054	lb/event	gr/scf * scf/event * 1lb/7000gr

SSM Emission Rates, Annual

Annual volume:	11774	Mscf/yr	Expected blowdown volume
H_2S Emissions:	0.0021	tons/yr	gr/scf * scf/event * 1lb/7000gr * ton/2000 lb

Facility Blowdown Venting (BD-ESD)

SSM Emission Rates, Per Event

Event Description:	Station ESD		
Volume per event:	750	Mscf/event	Estimated (varies)
H_2S Emissions:	0.268	lb/event	gr/scf * scf/event * 1lb/7000gr

SSM Emission Rates, Annual

Annual volume:	750	Mscf/yr	Expected blowdown volume
H_2S Emissions:	1.34E-04	tons/yr	gr/scf * scf/event * 1lb/7000gr * ton/2000 lb

Facility H_2S Total: 0.0039 tons/yr

Facility Blowdown Total

H_2S Emissions: 0.0039 tons/yr

Facility-Wide SSM/M Total

H_2S	
0.0039	tons/yr

El Paso Natural Gas Company, LLC

Lordsburg Compressor Station

Unit: AUX C-01
Description: Waukesha H24GL - 4 Stroke Lean Burn Engine

Sea level hp: 558 hp Manufacturer's data
Heat rate: 1.4 MMBtu/hr

Emission Calculations

PTE **Based on :** **8760** **hours/year**

NO_x	CO	NMNEHC	SO_2		
4.08	0.317	1.2	5.88E-04	lb/MMBtu	AP-42 Table 3.2-3
5.8	0.45	1.7	8.35E-04	lb/hr	
25.4	**2.0**	**7.3**	**3.66E-03**	tpy	

CO_2[1]	CH_4[1]	N_2O[1]	CO_2e[1]		
53.06	0.001	0.0001		kg/MMBtu	40 CFR 98 Subpart C Tables C-1 and C-2
727.6	**1.4E-02**	**1.4E-03**	**728.4**	tpy	

Limit Requested **Based on :** **500** **hours/year**

NO_x	CO	NMNEHC	SO_2	Benzene	Toluene	Methanol	CH_2O		
4.08	0.317	1.2	5.88E-04					lb/MMBtu	AP-42 Table 3.2-3
				0.0016	0.0016	0.010	0.21	lb/hr	GRI-HAPCalc
5.8	0.45	1.7	8.35E-04					lb/hr	
1.4	**0.11**	**0.4**	**2.09E-04**	**0.00040**	**0.00040**	**0.0025**	**0.054**	tpy	

Acetaldehyde	Acrolein	Xylenes	Total HAPs	CO_2[1]	CH_4[1]	N_2O[1]	CO_2e[1]		
				53.06	0.001	0.0001		kg/MMBtu	40 CFR 98 Subpart C Tables C-1 and C-2
0.034	0.021	0.00080	0.29					lb/hr	GRI-HAPCalc
0.0085	**0.0052**	**0.00020**	**0.073**	**41.5**	**7.8E-04**	**7.8E-05**	**41.6**	tpy	

Notes

[1] N_2O, CH_4, and CO_2 tpy Emission Rate= EF* Fuel Usage * Fuel Heat Value * 2.20462 lb/1 kg * 1 ton/2000 lb * Hours of Operation

CO_2e tpy Emission Rate = CO_2 Emission Rate + N_2O Emission Rate*GWP Factor +CH_4 Emission Rate*GWP Factor

El Paso Natural Gas Company, L.L.C.
Lordsburg Compressor Station

Waukesha H24GL Generator Engine

Unit: AUX C-01
Description: 4SLB Auxiliary Reciprocating Engine for Emergency Generator

Capacity:	558	hp	
BSFC:	7120	Btu/hp-hr	Manufacturer's data
Fuel Usage:	3.97	MMBtu/hr	
Fuel Heat Value:	925.00	Btu/scf	
Fuel Usage:	4.3	Mscf/hr	MMBtu/hr * MMscf/MMBtu * 1000 scf/1 MMscf
	2.1	MMscf/yr	Mscf/hr *500 hours/year * (MMscf/1000 Mscf)
Operating hours:	500	hours/year	

NO_X	CO	VOC	SO_2[1]			
4.08	0.317	0.118		lb/MMBtu		AP-42 Table 3.2-2
			5	Grains S/100 scf		
16.2	1.3	0.47	0.0014	lb/hr		
4.1	0.31	0.12	0.00036	tpy	Based on	500 hours/year

TSP[2]	PM_{10}[2]	$PM_{2.5}$[2]	Total HAP[3]			
0.0099871	0.0099871	0.009987		lb/MMBtu		AP-42 Table 3.2-2
0.040	0.040	0.040	0.2908	lb/hr		
0.0099	0.0099	0.0099	0.0727	tpy	Based on	500 hours/year

Formaldehyde[3]	Acetaldehyde[3]			
0.21	0.034	lb/hr		
0.054	0.0085	tpy	Based on	500 hours/year

Notes

1. SO_2 lb/hr = (5 grains Sulfur/100 scf) * (1 lb/7000 grains) * (64 g/mol SO_2 /32 g/mol S)
2. It is assumed that TSP = PM_{10} = $PM_{2.5}$
3. Total and individual HAP calculated using GRI-HAPCalc 3.01.

Section 6.a

Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

Title V (20.2.70 NMAC), Minor NSR (20.2.72 NMAC), and PSD (20.2.74 NMAC) applicants must estimate and report greenhouse gas (GHG) emissions to verify the emission rates reported in the public notice, determine applicability to 40 CFR 60 Subparts, and to evaluate Prevention of Significant Deterioration (PSD) applicability. GHG emissions that are subject to air permit regulations consist of the sum of an aggregate group of these six greenhouse gases: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Calculating GHG Emissions:

1. Calculate the ton per year (tpy) GHG mass emissions and GHG CO_2e emissions from your facility.
2. GHG mass emissions are the sum of the total annual tons of greenhouse gases without adjusting with the global warming potentials (GWPs). GHG CO_2e emissions are the sum of the mass emissions of each individual GHG multiplied by its GWP found in Table A-1 in 40 CFR 98 Mandatory Greenhouse Gas Reporting.
3. Emissions from routine or predictable start up, shut down, and maintenance must be included.
4. Report GHG mass and GHG CO_2e emissions in Table 2-P of this application. Emissions are reported in **short** tons per year and represent each emission unit's Potential to Emit (PTE).
5. All Title V major sources, PSD major sources, and all power plants, whether major or not, must calculate and report GHG mass and CO2e emissions for each unit in Table 2-P.
6. For minor source facilities that are not power plants, are not Title V, and are not PSD there are three options for reporting GHGs in Table 2-P: 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHGs as a second separate unit; 3) or check the following □ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

Sources for Calculating GHG Emissions:

- Manufacturer's Data
- AP-42 Compilation of Air Pollutant Emission Factors at http://www.epa.gov/ttn/chief/ap42/index.html
- EPA's Internet emission factor database WebFIRE at http://cfpub.epa.gov/webfire/
- 40 CFR 98 Mandatory Green House Gas Reporting except that tons should be reported in short tons rather than in metric tons for the purpose of PSD applicability.
- API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry. August 2009 or most recent version.
- Sources listed on EPA's NSR Resources for Estimating GHG Emissions at http://www.epa.gov/nsr/clean-air-act-permitting-greenhouse-gases:

Global Warming Potentials (GWP):
Applicants must use the Global Warming Potentials codified in Table A-1 of the most recent version of 40 CFR 98 Mandatory Greenhouse Gas Reporting. The GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to that of one unit mass of CO_2 over a specified time period.

"Greenhouse gas" for the purpose of air permit regulations is defined as the aggregate group of the following six gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. **(20.2.70.7 NMAC, 20.2.74.7 NMAC).** You may also find GHGs defined in 40 CFR 86.1818-12(a).

Metric to Short Ton Conversion:
Short tons for GHGs and other regulated pollutants are the standard unit of measure for PSD and title V permitting programs. 40 CFR 98 Mandatory Greenhouse Reporting requires metric tons.
1 metric ton = 1.10231 short tons (per Table A-2 to Subpart A of Part 98 – Units of Measure Conversions)

GHG emissions are included in the blowdown calculations.

Engine GHG Calculation

40 CFR 98 Subpart C TIER 1

Emission unit(s): A-01 & A-02
Source description: 7150 hp regenerative cycle turbines
Manufacturer: General Electric
Model: M3712R

CO_2 Calculation[1] (Eq C-1)

Click here to view Table C-1 to Subpart C of Part 98

$$CO_2 = 1 \times 10^{-3} \times \frac{509.5 \text{ MMscf}}{\text{yr}} \times \frac{1028 \text{ MMbtu}}{\text{MMscf}} \times \frac{53 \text{ kg CO2}}{\text{MMbtu}}$$

CO_2 = 27770 tonnes CO_2 / yr

CH_4 Calculation[2] (Eq C-8)

Click here to view Table C-1 to Subpart C of Part 98
Click here to view Table C-2 to Subpart C of Part 98

$$CH_4 = 1 \times 10^{-3} \times \frac{509.5 \text{ MMscf}}{\text{yr}} \times \frac{1028 \text{ MMbtu}}{\text{MMscf}} \times \frac{1 \times 10^{-3} \text{ kg } CH_4}{\text{MMbtu}}$$

CH_4 = 5.2E-01 tonnes CH_4 / yr

N_2O Calculation[3] (Eq C-8)

Click here to view Table C-1 to Subpart C of Part 98
Click here to view Table C-2 to Subpart C of Part 98

$$N_2O = 1 \times 10^{-3} \times \frac{509.5 \text{ MMscf}}{\text{yr}} \times \frac{1028 \text{ MMbtu}}{\text{MMscf}} \times \frac{1 \times 10^{-4} \text{ kg } N_2O}{\text{MMbtu}}$$

N_2O = 5.2E-02 tonnes N_2O / yr

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Engine GHG Calculation

40 CFR 98 Subpart C TIER 1

Emission unit(s): A-01 & A-02
Source description: 7150 hp regenerative cycle turbines
Manufacturer: General Electric
Model: M3712R

Note:

1 $$CO_2 = 1 \times 10^{-3} * Fuel * HHV * EF$$

Where:
CO_2 = Annual CO_2 mass emissions for the specific fuel type (metric tons).
Fuel = Mass or volume of fuel combusted per year, from company records as defined in § 98.6 (express mass in short tons for solid fuel, volume in standard cubic feet for gaseous fuel, and volume in gallons for liquid fuel).
HHV = Default high heat value of the fuel, from Table C–1 of this subpart (mmBtu per mass or mmBtu per volume, as applicable).
EF = Fuel-specific default CO_2 emission factor, from Table C–1 of this subpart (kg CO_2/mmBtu).
1×10^{-3} = Conversion factor from kilograms to metric tons.

2 $$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF \qquad \text{(Eq. C-8)}$$

Where:
CH_4 or N_2O = Annual CH_4 or N_2O emissions from the combustion of a particular type of fuel (metric tons).
Fuel = Mass or volume of the fuel combusted, either from company records or directly measured by a fuel flow meter, as applicable (mass or volume per year).
HHV = Default high heat value of the fuel from Table C–1 of this subpart (mmBtu per mass or volume).
EF = Fuel-specific default emission factor for CH_4 or N_2O, from Table C–2 of this subpart (kg CH_4 or N_2O per mmBtu).
1×10^{-3} = Conversion factor from kilograms to metric tons.

3 $$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF \qquad \text{(Eq. C-8)}$$

Where:
CH_4 or N_2O = Annual CH_4 or N_2O emissions from the combustion of a particular type of fuel (metric tons).
Fuel = Mass or volume of the fuel combusted, either from company records or directly measured by a fuel flow meter, as applicable (mass or volume per year).
HHV = Default high heat value of the fuel from Table C–1 of this subpart (mmBtu per mass or volume).
EF = Fuel-specific default emission factor for CH_4 or N_2O, from Table C–2 of this subpart (kg CH_4 or N_2O per mmBtu).
1×10^{-3} = Conversion factor from kilograms to metric tons.

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Engine GHG Calculation

40 CFR 98 Subpart C TIER 1

Emission unit(s): B-01
Source description: 10,260 hp regenerative cycle turbine
Manufacturer: General Electric
Model: M3102R

CO_2 Calculation[1] (Eq C-1)

Click here to view Table C-1 to Subpart C of Part 98

$$CO_2 = 1 \times 10^{-3} \times \frac{654.5 \text{ MMscf}}{\text{yr}} \times \frac{1028 \text{ MMbtu}}{\text{MMscf}} \times \frac{53 \text{ kg CO2}}{\text{MMbtu}}$$

CO_2 = 35673 tonnes CO_2 / yr

CH_4 Calculation[2] (Eq C-8)

Click here to view Table C-1 to Subpart C of Part 98
Click here to view Table C-2 to Subpart C of Part 98

$$CH_4 = 1 \times 10^{-3} \times \frac{654.5 \text{ MMscf}}{\text{yr}} \times \frac{1028 \text{ MMbtu}}{\text{MMscf}} \times \frac{1 \times 10^{-3} \text{ kg } CH_4}{\text{MMbtu}}$$

CH_4 = 6.7E-01 tonnes CH_4 / yr

N_2O Calculation[3] (Eq C-8)

Click here to view Table C-1 to Subpart C of Part 98
Click here to view Table C-2 to Subpart C of Part 98

$$N_2O = 1 \times 10^{-3} \times \frac{654.5 \text{ MMscf}}{\text{yr}} \times \frac{1028 \text{ MMbtu}}{\text{MMscf}} \times \frac{1 \times 10^{-4} \text{ kg } N_2O}{\text{MMbtu}}$$

N_2O = 6.7E-02 tonnes N_2O / yr

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Engine GHG Calculation

40 CFR 98 Subpart C TIER 1

Emission unit(s): B-01
Source description: 10,260 hp regenerative cycle turbine
Manufacturer: General Electric
Model: M3102R

Note:

1 $$CO_2 = 1 \times 10^{-3} * Fuel * HHV * EF$$

Where:
CO_2 = Annual CO_2 mass emissions for the specific fuel type (metric tons).
Fuel = Mass or volume of fuel combusted per year, from company records as defined in § 98.6 (express mass in short tons for solid fuel, volume in standard cubic feet for gaseous fuel, and volume in gallons for liquid fuel).
HHV = Default high heat value of the fuel, from Table C–1 of this subpart (mmBtu per mass or mmBtu per volume, as applicable).
EF = Fuel-specific default CO_2 emission factor, from Table C–1 of this subpart (kg CO_2/mmBtu).
1×10^{-3} = Conversion factor from kilograms to metric tons.

2 $$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF \qquad \text{(Eq. C-8)}$$

Where:
CH_4 or N_2O = Annual CH_4 or N_2O emissions from the combustion of a particular type of fuel (metric tons).
Fuel = Mass or volume of the fuel combusted, either from company records or directly measured by a fuel flow meter, as applicable (mass or volume per year).
HHV = Default high heat value of the fuel from Table C–1 of this subpart (mmBtu per mass or volume).
EF = Fuel-specific default emission factor for CH_4 or N_2O, from Table C–2 of this subpart (kg CH_4 or N_2O per mmBtu).
1×10^{-3} = Conversion factor from kilograms to metric tons.

3 $$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF \qquad \text{(Eq. C-8)}$$

Where:
CH_4 or N_2O = Annual CH_4 or N_2O emissions from the combustion of a particular type of fuel (metric tons).
Fuel = Mass or volume of the fuel combusted, either from company records or directly measured by a fuel flow meter, as applicable (mass or volume per year).
HHV = Default high heat value of the fuel from Table C–1 of this subpart (mmBtu per mass or volume).
EF = Fuel-specific default emission factor for CH_4 or N_2O, from Table C–2 of this subpart (kg CH_4 or N_2O per mmBtu).
1×10^{-3} = Conversion factor from kilograms to metric tons.

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Engine GHG Calculation

40 CFR 98 Subpart C TIER 1

Emission unit(s): AUX C-01
Source description: Waukesha 4SLB Generator Engine
Manufacturer: Waukesha
Model: H24GL

CO_2 Calculation[1] (Eq C-1)

Click here to view Table C-1 to Subpart C of Part 98

$$CO_2 = 1 \times 10^{-3} \times \frac{2.1 \text{ MMscf}}{\text{yr}} \times \frac{1028 \text{ MMbtu}}{\text{MMscf}} \times \frac{53 \text{ kg CO2}}{\text{MMbtu}}$$

CO_2 = 114 tonnes CO_2 / yr

CH_4 Calculation[2] (Eq C-8)

Click here to view Table C-1 to Subpart C of Part 98
Click here to view Table C-2 to Subpart C of Part 98

$$CH_4 = 1 \times 10^{-3} \times \frac{2.1 \text{ MMscf}}{\text{yr}} \times \frac{1028 \text{ MMbtu}}{\text{MMscf}} \times \frac{1 \times 10^{-3} \text{ kg } CH_4}{\text{MMbtu}}$$

CH_4 = 2.2E-03 tonnes CH_4 / yr

N_2O Calculation[3] (Eq C-8)

Click here to view Table C-1 to Subpart C of Part 98
Click here to view Table C-2 to Subpart C of Part 98

$$N_2O = 1 \times 10^{-3} \times \frac{2.1 \text{ MMscf}}{\text{yr}} \times \frac{1028 \text{ MMbtu}}{\text{MMscf}} \times \frac{1 \times 10^{-4} \text{ kg } N_2O}{\text{MMbtu}}$$

N_2O = 2.2E-04 tonnes N_2O / yr

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Engine GHG Calculation

40 CFR 98 Subpart C TIER 1

Emission unit(s): AUX C-01
Source description: Waukesha 4SLB Generator Engine
Manufacturer: Waukesha
Model: H24GL

Note:

1 $$CO_2 = 1 \times 10^{-3} * Fuel * HHV * EF$$

Where:
CO_2 = Annual CO_2 mass emissions for the specific fuel type (metric tons).
Fuel = Mass or volume of fuel combusted per year, from company records as defined in § 98.6 (express mass in short tons for solid fuel, volume in standard cubic feet for gaseous fuel, and volume in gallons for liquid fuel).
HHV = Default high heat value of the fuel, from Table C–1 of this subpart (mmBtu per mass or mmBtu per volume, as applicable).
EF = Fuel-specific default CO_2 emission factor, from Table C–1 of this subpart (kg CO_2/mmBtu).
1×10^{-3} = Conversion factor from kilograms to metric tons.

2 $$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF \qquad \text{(Eq. C-8)}$$

Where:
CH_4 or N_2O = Annual CH_4 or N_2O emissions from the combustion of a particular type of fuel (metric tons).
Fuel = Mass or volume of the fuel combusted, either from company records or directly measured by a fuel flow meter, as applicable (mass or volume per year).
HHV = Default high heat value of the fuel from Table C–1 of this subpart (mmBtu per mass or volume).
EF = Fuel-specific default emission factor for CH_4 or N_2O, from Table C–2 of this subpart (kg CH_4 or N_2O per mmBtu).
1×10^{-3} = Conversion factor from kilograms to metric tons.

3 $$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF \qquad \text{(Eq. C-8)}$$

Where:
CH_4 or N_2O = Annual CH_4 or N_2O emissions from the combustion of a particular type of fuel (metric tons).
Fuel = Mass or volume of the fuel combusted, either from company records or directly measured by a fuel flow meter, as applicable (mass or volume per year).
HHV = Default high heat value of the fuel from Table C–1 of this subpart (mmBtu per mass or volume).
EF = Fuel-specific default emission factor for CH_4 or N_2O, from Table C–2 of this subpart (kg CH_4 or N_2O per mmBtu).
1×10^{-3} = Conversion factor from kilograms to metric tons.

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Section 7

Information Used To Determine Emissions

Information Used to Determine Emissions shall include the following:

- ☑ If manufacturer data are used, include specifications for emissions units and control equipment, including control efficiencies specifications and sufficient engineering data for verification of control equipment operation, including design drawings, test reports, and design parameters that affect normal operation.
- ☐ If test data are used, include a copy of the complete test report. If the test data are for an emissions unit other than the one being permitted, the emission units must be identical. Test data may not be used if any difference in operating conditions of the unit being permitted and the unit represented in the test report significantly effect emission rates.
- ☐ If the most current copy of AP-42 is used, reference the section and date located at the bottom of the page. Include a copy of the page containing the emissions factors, and clearly mark the factors used in the calculations.
- ☑ If an older version of AP-42 is used, include a complete copy of the section.
- ☐ If an EPA document or other material is referenced, include a complete copy.
- ☐ Fuel specifications sheet.
- ☐ If computer models are used to estimate emissions, include an input summary (if available) and a detailed report, and a disk containing the input file(s) used to run the model. For tank-flashing emissions, include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., permit or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.

The following information used to determine emissions is attached:

Units A-01, A-02, B-01, C-01, F-001, F-002

- Manufacturer's specifications and internal test data for GE M3712R (units A-01 and A-02) and GE M3102R (unit B-01) turbines
- Manufacturer's specification and emission data for the Solar Mars 100S turbine (unit C-01).
- GRI-HAPCalc 3.01 output for the turbines (units A-01, A-02, B-01, and C-01) and fugitive emissions (units F-001 and F-002).

Unit C-01 SSM

- Solar Turbine PIL 70 Product Information Letter (19 August 2015) " Emission Estimates at Start-up, Shutdown, and Commissioning for SoLoNOx Combustion Products" Table 3.

Unit AUX C-01

- Manufacturer data
- EPA AP-42 Table 3.2-2
- GRI-HAPCalc 3.01

PROJECT: EPNG - TITLE V - LORDSBURG COMPRESSOR STATION

Source No.(s) in Permit Application:	S-001, S-002	**ALL FRAME 3s**
Unit(s) Type (E, T, or B):	T	
Number of Sources:	2	
Max. hrs of operation per year / unit:	8,760 hr/yr	

MANUFACTURER'S SPECIFICATIONS:

Manuf:	GE	Nameplate Rating @ 100% load:	7,150
Model #:	M3712R	Site Rating @ 100% load:	6,150
Cycle (T):	RC	Units (HP or MMBtu/hr):	HP
Shaft Configuration (T):	Split	Deration:	13.99%
		NMED Allowable Deration:	0.46%

Combustion Fuel LHV (Btu/scf):	925		
Heat Input @ 100% Load (Btu/hp-hr)(E,T):	8,747	GJH-8580	**8,747** Btu/hp-hr <=based on FUEL FLOW calculated below
Fuel Flow (Consumption) (scf/hr):	58,156		**58,158** scf/hr <=based on REGRESSION, y= 6.1904 * 6150 + 20087
Design Capacity (MMBtu/hr):	53.79	=	56.75 (GJ/hr)
Annual Process Rate (MMscf/yr):	509.45		

Fuel Flow at 100% Load (SINGLE UNIT):

6,150 HP X 8,747 BTU/HP-HR / 925.0 BTU/SCF (LHV) = 58,156 SCF/HR

Design Capacity at 100% Load (SINGLE UNIT):

6,150 HP X 8,747 BTU/HP-HR X 1 MM / 1,000,000 = 53.79 MMBTU/HR

Annual Process Rate at 100% Load (SINGLE UNIT):

58,156 SCF/HR X 8,760 HRS/YR X 1 MM / 1,000,000 = 509.45 MMSCF/YR

EMISSIONS INFORMATION

UNIT LOAD(S):

	units:	100%	70%
ISO	HP	7,150	5,005
Site	HP	6,150	4,305

EMISSION FACTORS @ CORRESPONDING LOAD:

		100%	70%		INPUTS from TESTED DATA: Slope:	Y-intercept:	Std Dev:	# Std Dev:
NOx	reg	0.0000	0.0000	SOURCE: Test Data (Reg)	0.00576	-3.3712	14.56	1.0
CO	reg	0.0000	0.0000	SOURCE: Test Data (Reg)	-0.00053	5.2676	2.21	2.0
SO2	gr/scf	0.0025	0.0025	SOURCE: Pipeline Quality				
THC	reg	0.0000	0.0000	SOURCE: Test Data (Reg)	0.000049	0.3321	1.01	2.0
VOC	reg	0.0000	0.0000	SOURCE: 5% test THC	0.00000245	0.0166	0.0505	2.0
Acetaldehyde	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Acrolein	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Benzene	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Ethylbenzene	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Formaldehyde	g/hp-hr	0.0159	0.0159	SOURCE: HAP-Calc (Version 1)				
n-Hexane	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Toluene	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
2,2,4-TMP	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Xylenes	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				

NOTE: SO2 emission factor given as the maximum amount of H2S in pipeline quality natural gas

"lb/hr" EMISSIONS (SINGLE UNIT):

		100%	70%
NOx	lb/hr	**46.6128**	**35.9856**
CO	lb/hr	**6.4281**	**7.4060**
SO2	lb/hr	**0.0391**	**0.0391**
THC	lb/hr	**2.6535**	**2.5630**
VOC	lb/hr	**0.1327**	**0.1282**
Acetaldehyde	lb/hr	**0.0000**	**0.0000**
Acrolein	lb/hr	**0.0000**	**0.0000**
Benzene	lb/hr	**0.0000**	**0.0000**
Ethylbenzene	lb/hr	**0.0000**	**0.0000**
Formaldehyde	lb/hr	**0.2156**	**0.1509**
n-Hexane	lb/hr	**0.0000**	**0.0000**
Toluene	lb/hr	**0.0000**	**0.0000**
2,2,4-TMP	lb/hr	**0.0000**	**0.0000**
Xylenes	lb/hr	**0.0000**	**0.0000**

"tons/yr" EMISSIONS (SINGLE UNIT):

		100%	70%
NOx	ton/yr	**204**	**158**
CO	ton/yr	**28.2**	**32.4**
SO2	ton/yr	**0.17**	**0.17**
THC	ton/yr	**11.6**	**11.2**
VOC	ton/yr	**0.58**	**0.56**
Acetaldehyde	ton/yr	**0.0000**	**0.0000**
Acrolein	ton/yr	**0.0000**	**0.0000**
Benzene	ton/yr	**0.0000**	**0.0000**
Ethylbenzene	ton/yr	**0.0000**	**0.0000**
Formaldehyde	ton/yr	**0.9443**	**0.6609**
n-Hexane	ton/yr	**0.0000**	**0.0000**
Toluene	ton/yr	**0.0000**	**0.0000**
2,2,4-TMP	ton/yr	**0.0000**	**0.0000**
Xylenes	ton/yr	**0.0000**	**0.0000**

"lb/hr" Sample Calculations (SINGLE UNIT):

NOx at 100% load:

REGRESSION: y = mx + b + (Std Dev * # Dev) = 0.0058 X 6150 + (-3.3712) + (14.5600 X 1.0) = 46.6128 LB/HR

CO at 70% load:

REGRESSION: y = mx + b + (Std Dev * # Dev) = -0.0005 X 4305 + (5.2676) + (2.2100 X 2.0) = 7.4060 LB/HR

SO2 at 100% load:

0.0025 GR/SCF X 58156 SCF/HR X 64 mol SO2/ 32 mol S / 7000 GR/LB = 0.0391 LB/HR

THC at 70% load:

REGRESSION: y = mx + b + (Std Dev * # Dev) = 0.0000 X 4305 + (0.3321) + (1.0100 X 2.0) = 2.5630 LB/HR

VOCs at 70% load:

REGRESSION: y = mx + b + (Std Dev * # Dev) = 0.0000 X 4305 + (0.0166) + (0.0505 X 2.0) = 0.1282 LB/HR

HCHO at 100% load:

0.0159 G/HP-HR X 6150 HP / 453.6 G/LB = 0.2156 LB/HR

"tpy" Sample Calculations (SINGLE UNIT):

NOx at 100% load:

46.6128 LB/HR X 8760 HRS/YR / 2000 LB/TON = 204.1641 TPY

STACK DATA / STACK EXHAUST GAS ANALYSIS:

Exh Stack Height:	51.0 ft =	15.54 m	ZONE:	13
Stack Cross Section (C/R):	C		UTM V:	m (Easting)
Diameter (ft):	6.00 ft =	1.8288 m	UTM H:	m (Northings)
Exh Area:	28.27 ft^2 =	2.63 m^2		
Exh Stack Temp:	**580** deg F =	304.4 deg C		
Exit Velocity:	**91.74** ft/s =	27.96 m/s		

			notes:
Total Stoich. Combustion Products:	10.7089	scf/scf gas burned	CO2 + H20 + N2 (from GAS-FUEL STOICH ANALYSIS)
Total Stoich. Air Required:	9.7046	scf air/scf gas fuel	O2 + N2 (from GAS-FUEL STOICH. ANALYSIS)
Stoich. CO2 (Combustion Product):	1.0348	scf CO/scf gas burned	from GAS-FUEL STOICH. ANALYSIS
Stoich. H2O (Combustion Product):	2.0007	scf H2O/scf gas burned	from GAS-FUEL STOICH. ANALYSIS
Stoich. N2 (Combustion Product):	7.6734	scf N2/scf gas burned	from GAS-FUEL STOICH. ANALYSIS
Stoich. O2 (Combustion Fuel):	2.0312	scf O2/scf gas fuel	from GAS-FUEL STOICH. ANALYSIS
Percent Excess Air (@ 100% load):	**585.00%**		
Moisture Content of Air:	0.010692	lb H2O / lb dry air	ASHRAE Fundamentals (1993) at ambient T=59F, 14.696 psi
Fuel Flow:	58,156	scf fuel/hr	

Exhaust Gas Composition Calculations:

N2:

6.850 total air X 7.6734 scf N2/scf gas burned = 52.5628 scf N2/scf gas burned

O2:

5.850 excess air X 2.0312 scf O2/scf gas burned = 11.8825 scf O2/scf gas burned

H2O:

6.850 total air X 9.7046 scf air/scf gas X 29 lb/lb-mol air / 379 scf/lb-mol = 5.0866 lb air/scf gas burned

5.0866 lb air/scf gas burned X 0.010692 lb H2O / lb dry air / 18 lb H2O/mol X 379 scf/mol = 1.1451 $\frac{\text{scf H2O}}{\text{scf gas burned}}$

total exhaust H2O: 2.0007 + 1.1451 = 3.1458 scf H2O/scf gas burned

Volumetric Percent of Stack Gas Components (DRY BASIS) (@ 59F, 14.7 psia):

Component:	scfh	VOL%	ppmv	lb/hr	MW (lb/lb-mol)	VOL% *MW	notes:
N2	3,056,842.2	**80.262%**	802,618	225,835.31	28	22.473	52.5628 scf N2/scf gas burned
O2	691,038.7	**18.144%**	181,442	58,346.27	32	5.806	11.8825 scf O2/scf gas burned
CO2	60,179.8	**1.580%**	15,801	6,986.58	44	0.695	1.0348 scf CO2/scf gas burned
NOx	384.0	**0.010%**	101	46.61	46	0.005	46.6128 lb/hr NOx
CO	87.0	**0.002%**	23	6.43	28	0.001	6.4281 lb/hr CO
SO2	0.2	**0.000%**	0	0.04	64	0.000	0.0391 lb/hr SO2
THC**	59.2	**0.002%**	16	2.65	17	0.000	2.6535 lb/hr THC
TOTALS	3,808,591.1	100.000%	1,000,000	291,223.89		28.980	EXHAUST GAS MW (dry)

**THC mol. wt. from fuel gas analysis

Volumetric Percent of Stack Gas Components (WET BASIS) (@ 59F, 14.7psia):

Component:	scfh	VOL%	ppmv	lb/hr	MW (lb/lb-mol)	VOL% *MW	notes:
N2	3,056,842.2	**76.583%**	765,831	225,835.31	28	21.443	52.5628 scf N2/scf gas burned
O2	691,038.7	**17.313%**	173,126	58,346.27	32	5.540	11.8825 scf O2/scf gas burned
CO2	60,179.8	**1.508%**	15,077	6,986.58	44	0.663	1.0348 scf CO2/scf gas burned
H2O	182,947.1	**4.583%**	45,834	8,688.78	18	0.825	3.1458 scf H2O/scf gas burned
NOx	384.0	**0.010%**	96	46.61	46	0.004	46.6128 lb/hr
CO	87.0	**0.002%**	22	6.43	28	0.001	6.4281 lb/hr
SO2	0.2	**0.000%**	0	0.04	64	0.000	0.0391 lb/hr
THC**	59.2	**0.001%**	15	2.65	17	0.000	2.6535 lb/hr
TOTALS	3,991,538.3	100.000%	1,000,000	299,912.67		28.477	EXHAUST GAS MW (wet)

**THC mol. wt. from fuel gas analysis

Sample Calculations:

Exhaust N2: **52.5628** scf N2/scf gas burned **X 58,156** scfh gas burned **= 3,056,842.2** scfh N2

3,056,842.2 scfh N2 **X 28** lb/lb-mol **/ 379** scf/lb-mol **= 225,835.31** lb/hr N2

Exhaust NOx: **46.6128** lb/hr NOx **X 379** scf/lb-mol **/ 46** lb/lb-mol **= 384.0** scfh NOx

NOTE: @ 59 deg F and 14.696 psia, the volume of 1 lb-mole of perfect gas is approximately 379 scf

Exit Velocity Calculation:

Mass flow rate = Density (Exhaust Gas) X Exit Area X Velocity

~~m~~ = rho * A * V, V = ~~m~~/(rho * A) , rho = (P*MW)/(R_u*T)

where:

~~m~~ = exhaust gas mass flow rate (lb/hr) - WET

rho = density of exhaust gas (lb/ft^3) -WET

A = exit area (ft^2) [A=PI/4*(exit diameter)^2]

V = exit velocity (ft/hr / 3600 sec/hr) - WET

P = exit pressure, ATMOSPHERIC (psia)

MW = exhaust gas molecular weight (lb/lb-mol) - WET

R_u = univeral gas constant (10.73164 psia*ft^3/lbmol/deg R, 8.314510 J/(K-mol))

T = exit stack temperature (deg Rankine, deg F + 459.67)

PROJECT: EPNG - TITLE V - LORDSBURG COMPRESSOR STATION

Source No.(s) in Permit Application:	S-003	**ALL FRAME 3s**
Unit(s) Type (E, T, or B):	T	
Number of Sources:	1	
Max. hrs of operation per year / unit:	8,760 hr/yr	

MANUFACTURER'S SPECIFICATIONS:

Manuf:	GE	Nameplate Rating @ 100% load:	10,260
Model #:	M3102R	Site Rating @ 100% load:	8,824
Cycle (T):	RC	Units (HP or MMBtu/hr):	HP
Shaft Configuration (T):	Split	Deration:	14.00%
		NMED Allowable Deration:	0.46%

Combustion Fuel LHV (Btu/scf):	925		
Heat Input @ 100% Load (Btu/hp-hr)(E,T):	7,832	GJH-7682	**7,832** Btu/hp-hr <=based on FUEL FLOW calculated below
Fuel Flow (Consumption) (scf/hr):	74,713		**74,711** scf/hr <=based on REGRESSION, y= 6.1904 * 8824 + 20087
Design Capacity (MMBtu/hr):	69.11	=	72.91 (GJ/hr)
Annual Process Rate (MMscf/yr):	654.49		

Fuel Flow at 100% Load (SINGLE UNIT):

8,824 HP X 7,832 BTU/HP-HR / 925.0 BTU/SCF (LHV) = 74,713 SCF/HR

Design Capacity at 100% Load (SINGLE UNIT):

8,824 HP X 7,832 BTU/HP-HR X 1 MM / 1,000,000 = 69.11 MMBTU/HR

Annual Process Rate at 100% Load (SINGLE UNIT):

74,713 SCF/HR X 8,760 HRS/YR X 1 MM / 1,000,000 = 654.49 MMSCF/YR

EMISSIONS INFORMATION

UNIT LOAD(S):

	units:	100%	70%
ISO	HP	10,260	7,182
Site	HP	8,824	6,177

EMISSION FACTORS @ CORRESPONDING LOAD:

		100%	70%		INPUTS from TESTED DATA: Slope:	Y-intercept:	Std Dev:	# Std Dev:
NOx	reg	0.0000	0.0000	SOURCE: Test Data (Reg)	0.00576	-3.3712	14.56	1.0
CO	reg	0.0000	0.0000	SOURCE: Test Data (Reg)	-0.00053	5.2676	2.21	2.0
SO2	gr/scf	0.0025	0.0025	SOURCE: Pipeline Quality				
THC	reg	0.0000	0.0000	SOURCE: Test Data (Reg)	0.000049	0.3321	1.01	2.0
VOC	reg	0.0000	0.0000	SOURCE: 5% test THC	0.00000245	0.01661	0.0505	2.0
Acetaldehyde	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Acrolein	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Benzene	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Ethylbenzene	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Formaldehyde	g/hp-hr	0.0159	0.0159	SOURCE: HAP-Calc (Version 1)				
n-Hexane	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Toluene	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
2,2,4-TMP	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				
Xylenes	g/hp-hr	0.0000	0.0000	SOURCE: HAP-Calc (Version 1)				

NOTE: SO2 emission factor given as the maximum amount of H2S in pipeline quality natural gas

"lb/hr" EMISSIONS (SINGLE UNIT):

		100%	70%
NOx	lb/hr	**62.0150**	**46.7683**
CO	lb/hr	**5.0109**	**6.4138**
SO2	lb/hr	**0.0502**	**0.0502**
THC	lb/hr	**2.7845**	**2.6548**
VOC	lb/hr	**0.1392**	**0.1327**
Acetaldehyde	lb/hr	**0.0000**	**0.0000**
Acrolein	lb/hr	**0.0000**	**0.0000**
Benzene	lb/hr	**0.0000**	**0.0000**
Ethylbenzene	lb/hr	**0.0000**	**0.0000**
Formaldehyde	lb/hr	**0.3093**	**0.2165**
n-Hexane	lb/hr	**0.0000**	**0.0000**
Toluene	lb/hr	**0.0000**	**0.0000**
2,2,4-TMP	lb/hr	**0.0000**	**0.0000**
Xylenes	lb/hr	**0.0000**	**0.0000**

"tons/yr" EMISSIONS (SINGLE UNIT):

		100%	70%
NOx	ton/yr	**272**	**205**
CO	ton/yr	**21.9**	**28.1**
SO2	ton/yr	**0.22**	**0.22**
THC	ton/yr	**12.2**	**11.6**
VOC	ton/yr	**0.61**	**0.58**
Acetaldehyde	ton/yr	**0.0000**	**0.0000**
Acrolein	ton/yr	**0.0000**	**0.0000**
Benzene	ton/yr	**0.0000**	**0.0000**
Ethylbenzene	ton/yr	**0.0000**	**0.0000**
Formaldehyde	ton/yr	**1.3547**	**0.9483**
n-Hexane	ton/yr	**0.0000**	**0.0000**
Toluene	ton/yr	**0.0000**	**0.0000**
2,2,4-TMP	ton/yr	**0.0000**	**0.0000**
Xylenes	ton/yr	**0.0000**	**0.0000**

"lb/hr" Sample Calculations (SINGLE UNIT):

NOx at 100% load:

REGRESSION: y = mx + b + (Std Dev * # Dev) = 0.0058 X 8824 + (-3.3712) + (14.5600 X 1.0) = 62.0150 LB/HR

CO at 70% load:

REGRESSION: y = mx + b + (Std Dev * # Dev) = -0.0005 X 6177 + (5.2676) + (2.2100 X 2.0) = 6.4138 LB/HR

SO2 at 100% load:

0.0025 GR/SCF X 74713 SCF/HR X 64 mol SO2/ 32 mol S / 7000 GR/LB = 0.0502 LB/HR

THC at 70% load:

REGRESSION: y = mx + b + (Std Dev * # Dev) = 0.0000 X 6177 + (0.3321) + (1.0100 X 2.0) = 2.6548 LB/HR

VOCs at 70% load:

REGRESSION: y = mx + b + (Std Dev * # Dev) = 0.0000 X 6177 + (0.0166) + (0.0505 X 2.0) = 0.1327 LB/HR

HCHO at 100% load:

0.0159 G/HP-HR X 8824 HP / 453.6 G/LB = 0.3093 LB/HR

"tpy" Sample Calculations (SINGLE UNIT):

NOx at 100% load:

62.0150 LB/HR X 8760 HRS/YR / 2000 LB/TON = 271.6257 TPY

STACK DATA / STACK EXHAUST GAS ANALYSIS:

Exh Stack Height:	52.0 ft =	15.85 m	ZONE:	13
Stack Cross Section (C/R):	C		UTM V:	m (Easting)
Diameter (ft):	7.00 ft =	2.1336 m	UTM H:	m (Northings)
Exh Area:	38.48 ft^2 =	3.57 m^2		
Exh Stack Temp:	**580** deg F =	304.4 deg C		
Exit Velocity:	**86.58 ft/s =**	26.39 m/s		

			notes:
Total Stoich. Combustion Products:	10.7089	scf/scf gas burned	CO2 + H2O + N2 (from GAS-FUEL STOICH ANALYSIS)
Total Stoich. Air Required:	9.7046	scf air/scf gas fuel	O2 + N2 (from GAS-FUEL STOICH. ANALYSIS)
Stoich. CO2 (Combustion Product):	1.0348	scf CO/scf gas burned	from GAS-FUEL STOICH. ANALYSIS
Stoich. H2O (Combustion Product):	2.0007	scf H2O/scf gas burned	from GAS-FUEL STOICH. ANALYSIS
Stoich. N2 (Combustion Product):	7.6734	scf N2/scf gas burned	from GAS-FUEL STOICH. ANALYSIS
Stoich. O2 (Combustion Fuel):	2.0312	scf O2/scf gas fuel	from GAS-FUEL STOICH. ANALYSIS
Percent Excess Air (@ 100% load):	**585.00%**		
Moisture Content of Air:	0.010692	lb H2O / lb dry air	ASHRAE Fundamentals (1993) at ambient T=59F, 14.696 psi
Fuel Flow:	74,713	scf fuel/hr	

Exhaust Gas Composition Calculations:

N2:

6.850 total air X 7.6734 scf N2/scf gas burned = 52.5628 scf N2/scf gas burned

O2:

5.850 excess air X 2.0312 scf O2/scf gas burned = 11.8825 scf O2/scf gas burned

H2O:

6.850 total air X 9.7046 scf air/scf gas X 29 lb/lb-mol air / 379 scf/lb-mol = 5.0866 lb air/scf gas burned

5.0866 lb air/scf gas burned X 0.010692 lb H2O / lb dry air / 18 lb H2O/mol X 379 scf/mol = 1.1451 scf H2O / scf gas burned

total exhaust H2O: 2.0007 + 1.1451 = 3.1458 scf H2O/scf gas burned

Volumetric Percent of Stack Gas Components (DRY BASIS) (@ 59F, 14.7 psia):

Component:	scfh	VOL%	ppmv	lb/hr	MW (lb/lb-mol)	VOL% *MW	notes:
N2	3,927,124.5	**80.262%**	802,624	290,130.57	28	22.473	52.5628 scf N2/scf gas burned
O2	887,777.2	**18.144%**	181,444	74,957.44	32	5.806	11.8825 scf O2/scf gas burned
CO2	77,313.0	**1.580%**	15,801	8,975.65	44	0.695	1.0348 scf CO2/scf gas burned
NOx	510.9	**0.010%**	104	62.02	46	0.005	62.0150 lb/hr NOx
CO	67.8	**0.001%**	14	5.01	28	0.000	5.0109 lb/hr CO
SO2	0.3	**0.000%**	0	0.05	64	0.000	0.0502 lb/hr SO2
THC**	62.1	**0.001%**	13	2.78	17	0.000	2.7845 lb/hr THC
TOTALS	4,892,855.9	100.000%	1,000,000	374,133.53		28.980	EXHAUST GAS MW (dry)

**THC mol. wt. from fuel gas analysis

Volumetric Percent of Stack Gas Components (WET BASIS) (@ 59F, 14.7psia):

Component:	scfh	VOL%	ppmv	lb/hr	MW (lb/lb-mol)	VOL% *MW	notes:
N2	3,927,124.5	**76.584%**	765,837	290,130.57	28	21.443	52.5628 scf N2/scf gas burned
O2	887,777.2	**17.313%**	173,127	74,957.44	32	5.540	11.8825 scf O2/scf gas burned
CO2	77,313.0	**1.508%**	15,077	8,975.65	44	0.663	1.0348 scf CO2/scf gas burned
H2O	235,032.2	**4.583%**	45,834	11,162.48	18	0.825	3.1458 scf H2O/scf gas burned
NOx	510.9	**0.010%**	100	62.02	46	0.005	62.0150 lb/hr
CO	67.8	**0.001%**	13	5.01	28	0.000	5.0109 lb/hr
SO2	0.3	**0.000%**	0	0.05	64	0.000	0.0502 lb/hr
THC**	62.1	**0.001%**	12	2.78	17	0.000	2.7845 lb/hr
TOTALS	5,127,888.0	100.000%	1,000,000	385,296.00		28.477	EXHAUST GAS MW (wet)

**THC mol. wt. from fuel gas analysis

Sample Calculations:

Exhaust N2: **52.5628** scf N2/scf gas burned X **74,713** scfh gas burned = **3,927,124.5** scfh N2

3,927,124.5 scfh N2 X **28** lb/lb-mol / **379** scf/lb-mol = **290,130.57** lb/hr N2

Exhaust NOx: **62.0150** lb/hr NOx X **379** scf/lb-mol / **46** lb/lb-mol = **510.9** scfh NOx

NOTE: @ 59 deg F and 14.696 psia, the volume of 1 lb-mole of perfect gas is approximately 379 scf

Exit Velocity Calculation:

Mass flow rate = Density (Exhaust Gas) X Exit Area X Velocity

~~m~~ = rho * A * V, V = ~~m~~/(rho * A) , rho = (P*MW)/(R_u*T)

where:

~~m~~ = exhaust gas mass flow rate (lb/hr) - WET

rho = density of exhaust gas (lb/ft^3) -WET

A = exit area (ft^2) [A=PI/4*(exit diameter)^2]

V = exit velocity (ft/hr / 3600 sec/hr) - WET

P = exit pressure, ATMOSPHERIC (psia)

MW = exhaust gas molecular weight (lb/lb-mol) - WET

R_u = univeral gas constant (10.73164 psia*ft^3/lbmol/deg R, 8.314510 J/(K-mol))

T = exit stack temperature (deg Rankine, deg F + 459.67)

ATTACHMENT C .
Emission Calculations

MARS 100-T15000S Full Load Emissions per turbine - based on 0 degrees F

Full Load - hp @ 0 degrees and 60% RH = 13994
Full Load - Shaft Power Mw @ 0 degrees and 60% RH = 10.44
Full Load - MMBtu/hr LHV @ 0 degrees and 60% RH = 107.24
Full Load - MMBtu/hr HHV @ 0 degrees and 60% RH = 119.04

Pollutant	lb/Shaft Mw-hr	lb/hr	Calc. g/hp-hr	
NOx (@ 25 ppm 15% O2)	1.03	10.75	0.35	Source - Solar
CO (@ 50 ppm 15% O2)	1.25	13.04	NA	Source - Solar
VOC @ 2.5 ppm 15% O2 (10% of UHC)	0.036	0.38	NA	Source - Solar
Pollutant	**lb/MMBtu HHV**	**lb/hr**	NA	
SO2	0.0034	0.40	NA	Source - AP-42, Section 3.1 default value
PM	0.0099	1.18	NA	Source - AP-42, Section 3.1, +50%
Formaldehyde	7.10E-04	0.08	NA	Source - AP-42, Section 3.1
Total HAPs	1.03E-03	0.12	NA	Source - AP-42, Section 3.1

Emergency Gas-fired IC engine Power Generator Hourly Emissions

Full Load hp = 500
Conversion factor from lb/MMBtu to lb/hp-hr = 0.008506246

Pollutant	lb/MMBtu	lb/hp-hr	Equiv g/hp-hr	lb/hr
NOx	NA	0.00661	3.0	3.31
CO	NA	0.00661	3.0	3.31
VOC	0.118	0.0010	NA	0.50
SO2	0.00059	5.02E-06	NA	0.0025
PM (filterable and condensible)	0.009977	0.0001	NA	0.042
Formaldehyde	5.28E-02	0.0004	NA	0.225
Total HAPs	7.95E-02	6.77E-04	NA	0.34

Emission factors for NOx and CO based on 3 g/hp-hr engines.
Emission factors are from AP-42 Section 3.2 for lean burn 4 stroke engines for all other pollutants.

Fugitive Equipment Leak Emissions

Based on GRI HAPCALC

Source	# of Components	BTEX Emissions	NMEHC
Valves	257	-	-
Open End Lines	14	-	-
Flanges	120	-	-
Connections	737	-	-
Others	30	-	-
TOTALS	1158	0.0118	0.5561

Facility Potential Emissions based on Full Load for 8760 hrs/yr, except Emergency Generator at 500 hrs/yr

Total Potential Emissions (tpy)							
Emission Unit	Nox	CO	VOC	SO2	PM	Formaldehyde	HAPs
Turbine A01	47.1	57.1	1.6	1.8	5.2	0.4	0.54
Fugitive Equipment Leak Emissions	0.0	0.0	0.6	0.000	0.00	0.00	0.01
Facility Annual PTE (tpy)	47	57	2.2	1.8	5.2	0.4	0.55

SOLAR TURBINES INCORPORATED
ENGINE PERFORMANCE CODE REV. 2.88
CUSTOMER: El Paso Line 2000 (HO2-029)
JOB ID: Lordsburg Compressor Station

DATE RUN: 24-SEP-02
RUN BY: Richards, William

NEW EQUIPMENT PREDICTED EMISSION PERFORMANCE
DATA FOR POINT NUMBER 1

Fuel: SD NATURAL GAS Customer: El Paso Line
Water Injection: NO Inquiry Number: Lordsburg Comp Sta
Number of Engines Tested: 0
Model: MARS 100-T15000S CS/MD 59F MATCH GAS
SHIPMENTS AFTER 1/95
Emissions Data: REV. 0.0

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

Hp= 13994, %Full Load= 100.0, Elev= 4227 ft, %RH= 60.0, Temperature= 0 °F

NOX		CO		UHC		
NOM	MAX	NOM	MAX	NOM	MAX	
*	25.00	*	50.00	*	25.00	PPMvd at 15% O2
*	47.01	*	57.24	*	16.39	ton/yr
*	0.100	*	0.122	*	0.035	lbm/MMBtu (Fuel LHV)
*	1.03	*	1.25	*	0.36	lbm/(MW-hr) (gas turbine shaft pwr)

* NOMINAL EMISSIONS DATA UNAVAILABLE FOR THIS ENGINE

IMPORTANT NOTES

1. For short-term emission limits such as lbs/hr., Solar recommends using "worst case" anticipated operating conditions specific to the application and the site conditions. Worst case for one pollutant is not necessarily the same for another. The emission values on this form are only predicted emissions at the specific operating conditions listed.
2. Solar's typical SoLoNOx warranty is for greater than 0 deg F, and between 50% and 100% load for gas fuel, and between 80% and 100% load for liquid fuel. An emission warranty for non-SoLoNOx equipment is for greater than 0 deg F and between 80% and 100% load.
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 needed, Solar can provide generic documents to address turbine operation outside typical warranty ranges, as well as non-warranted emissions of SO2, PM10/2.5, VOC, and formaldehyde.
5. 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.

SOLAR TURBINES INCORPORATED
ENGINE PERFORMANCE CODE REV. 2.88
CUSTOMER: El Paso Line 2000 (HO2-029)
JOB ID: Lordsburg Compressor Station

DATE RUN: 24-SEP-02
RUN BY: Richards, William

NEW EQUIPMENT PREDICTED EMISSION PERFORMANCE
DATA FOR POINT NUMBER 2

Fuel: SD NATURAL GAS Customer: El Paso Line
Water Injection: NO Inquiry Number: Lordsburg Comp Sta
Number of Engines Tested: 0
Model: MARS 100-T15000S CS/MD 59F MATCH GAS
SHIPMENTS AFTER 1/95
Emissions Data: REV. 0.0

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

Hp= 11115, %Full Load= 100.0, Elev= 4227 ft, %RH= 80.0, Temperature= 80.0 F

NOX		CO		UHC		
NOM	MAX	NOM	MAX	NOM	MAX	
*	25.00	*	50.00	*	25.00	PPMvd at 15% O2
*	38.35	*	46.70	*	13.37	ton/yr
*	0.098	*	0.119	*	0.034	lbm/MMBtu (Fuel LHV)
*	1.06	*	1.29	*	0.37	lbm/(MW-hr) (gas turbine shaft pwr)

* NOMINAL EMISSIONS DATA UNAVAILABLE FOR THIS ENGINE

IMPORTANT NOTES

1. For short-term emission limits such as lbs/hr., Solar recommends using "worst case" anticipated operating conditions specific to the application and the site conditions. Worst case for one pollutant is not necessarily the same for another. The emission values on this form are only predicted emissions at the specific operating conditions listed.
2. Solar's typical SoLoNOx warranty is for greater than 0 deg F, and between 50% and 100% load for gas fuel, and between 80% and 100% load for liquid fuel. An emission warranty for non-SoLoNOx equipment is for greater than 0 deg F and between 80% and 100% load.
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 needed, Solar can provide generic documents to address turbine operation outside typical warranty ranges, as well as non-warranted emissions of SO2, PM10/2.5, VOC, and formaldehyde.
5. 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.

SOLAR TURBINES INCORPORATED
ENGINE PERFORMANCE CODE REV. 2.88
CUSTOMER: El Paso Line 2000 (HO2-029)
JOB ID: Lordsburg Compressor Station

DATE RUN: 24-SEP-02
RUN BY: Richards, William

MARS 100-T15000S
CS/MD
59F MATCH
GAS
TMF-2S REV. 3.2

DATA FOR MINIMUM PERFORMANCE

Fuel Type	SD NATURAL GAS		
Elevation	Feet	4227	
Inlet Loss	in. H2O	4.0	
Exhaust Loss	in. H2O	4.0	
Accessory on GP Shaft	Hp	26.0	
Engine Inlet Temp.	Deg. F	0	80.0
Relative Humidity	%	60.0	80.0
Elevation Loss	Hp	2531	2017
Inlet Loss	Hp	277	232
Exhaust Loss	Hp	106	96
Driven Equipment Speed	RPM	9401	9180
Optimum Equipment Speed	RPM	9401	9180
Gas Generator Speed	RPM	11168	11168
Specified Load	Hp	FULL	FULL
Net Output Power	Hp	13994	11115
Fuel Flow	MMBtu/hr	107.24	89.24
Heat Rate	Btu/Hp-hr	7663	8028
Inlet Air Flow	lbm/hr	309867	259917
Engine Exhaust Flow	lbm/hr	313985	263336
PCD	psi(g)	227.3	191.1
PT Inlet Temp. (T5)	Deg. F	1297	1334
Display T5, S/W	Deg. F	1334	1358
Exhaust Temperature	Deg. F	861	930

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_2O	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 (condensible)	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

GRI-HAPCalc ®3.01
Turbine Report

Facility ID:	**LORDSBURG**	**Notes:**	**A-01/A-02: GE M3712R turbines**
Operation Type:	**COMPRESSOR STATION**		**B-01: GE M3102R turbine**
Facility Name:	**LORDSBURG COMPRESSOR STATION**		**C-01: Solar Mars 100S turbine**
User Name:			**F-001/F-002: Fugitive emissions**
Units of Measure:	**U.S. STANDARD**		

Note: Emissions less than 5.00E-09 tons (or tonnes) per year are considered insignificant and are treated as zero. These emissions are indicated on the report with a "0". Emissions between 5.00E-09 and 5.00E-05 tons (or tonnes) per year are represented on the report with "0.0000".

Turbine Unit

Unit Name: A-01/A-02

Hours of Operation:	8,760	Yearly
Rate Power:	7150	hp
Fuel Type:	NATURAL GAS	
Emission Factor Set:	FIELD > EPA > LITERATURE	
Additional EF Set:	-NONE-	

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
PAHs	0.0007	0.00000970 g/bhp-hr	EPA
Formaldehyde	1.1683	0.01693680 g/bhp-hr	GRI Field
Acetaldehyde	1.1958	0.01733570 g/bhp-hr	GRI Field
1,3-Butadiene	0.0042	0.00006160 g/bhp-hr	GRI Field
Acrolein	0.0179	0.00026000 g/bhp-hr	GRI Field
Propional	0.0597	0.00086500 g/bhp-hr	GRI Field
Propylene Oxide	0.0088	0.00012730 g/bhp-hr	EPA
Benzene	0.0371	0.00053840 g/bhp-hr	GRI Field
Toluene	0.0284	0.00041100 g/bhp-hr	GRI Field
Ethylbenzene	0.0097	0.00014050 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0858	0.00124410 g/bhp-hr	GRI Field
2,2,4-Trimethylpentane	0.1107	0.00160530 g/bhp-hr	GRI Field
n-Hexane	0.1039	0.00150580 g/bhp-hr	GRI Field
Phenol	0.0076	0.00011010 g/bhp-hr	GRI Field
Naphthalene	0.0005	0.00000760 g/bhp-hr	GRI Field
2-Methylnaphthalene	0.0001	0.00000130 g/bhp-hr	GRI Field
Biphenyl	0.0228	0.00033050 g/bhp-hr	GRI Field
Phenanthrene	0.0000	0.00000050 g/bhp-hr	GRI Field
Chrysene	0.0001	0.00000100 g/bhp-hr	GRI Field
Beryllium	0.0000	0.00000010 g/bhp-hr	GRI Field
Phosphorus	0.0045	0.00006520 g/bhp-hr	GRI Field
Chromium	0.0006	0.00000820 g/bhp-hr	GRI Field
Manganese	0.0012	0.00001750 g/bhp-hr	GRI Field
Nickel	0.0004	0.00000610 g/bhp-hr	GRI Field

Cobalt	0.0001	0.00000160 g/bhp-hr	GRI Field
Arsenic	0.0000	0.00000060 g/bhp-hr	GRI Field
Selenium	0.0000	0.00000030 g/bhp-hr	GRI Field
Cadmium	0.0000	0.00000020 g/bhp-hr	GRI Field
Mercury	0.0002	0.00000270 g/bhp-hr	GRI Field
Lead	0.0002	0.00000340 g/bhp-hr	GRI Field
Total	2.8693		

Criteria Pollutants

PM	1.9985	0.02897200 g/bhp-hr	EPA
CO	145.4298	2.10828420 g/bhp-hr	GRI Field
NMHC	13.3737	0.19387800 g/bhp-hr	GRI Field
NMEHC	0.6359	0.00921840 g/bhp-hr	EPA
NOx	86.3744	1.25216290 g/bhp-hr	GRI Field
SO2	0.0709	0.00102720 g/bhp-hr	GRI Field

Other Pollutants

Methane	68.0967	0.98719230 g/bhp-hr	GRI Field
Acetylene	0.4943	0.00716540 g/bhp-hr	GRI Field
Ethylene	0.9626	0.01395450 g/bhp-hr	GRI Field
Ethane	10.3528	0.15008370 g/bhp-hr	GRI Field
Propane	1.1037	0.01600000 g/bhp-hr	GRI Field
Isobutane	0.3311	0.00480000 g/bhp-hr	GRI Field
Butane	0.3587	0.00520000 g/bhp-hr	GRI Field
Cyclopentane	0.1139	0.00165110 g/bhp-hr	GRI Field
Butyrald/Isobutyraldehyde	0.0924	0.00134000 g/bhp-hr	GRI Field
n-Pentane	5.5977	0.08115000 g/bhp-hr	GRI Field
Cyclohexane	0.4224	0.00612400 g/bhp-hr	GRI Field
Methylcyclohexane	0.6092	0.00883120 g/bhp-hr	GRI Field
n-Octane	0.2200	0.00318890 g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.2069	0.00300000 g/bhp-hr	GRI Field
n-Nonane	0.0367	0.00053260 g/bhp-hr	GRI Field
CO2	33,308.1871	482.86607780 g/bhp-hr	EPA
Vanadium	0.0000	0.00000070 g/bhp-hr	GRI Field
Copper	0.0014	0.00002050 g/bhp-hr	GRI Field
Molybdenum	0.0014	0.00002030 g/bhp-hr	GRI Field
Barium	0.0016	0.00002290 g/bhp-hr	GRI Field

Unit Name: B-01

Hours of Operation: 8,760 Yearly

Rate Power: 10260 hp

Fuel Type: NATURAL GAS

Emission Factor Set: FIELD > EPA > LITERATURE

Additional EF Set: -NONE-

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
PAHs	0.0010	0.00000970 g/bhp-hr	EPA
Formaldehyde	1.6765	0.01693680 g/bhp-hr	GRI Field
Acetaldehyde	1.7160	0.01733570 g/bhp-hr	GRI Field

1,3-Butadiene	0.0061	0.00006160 g/bhp-hr	GRI Field
Acrolein	0.0257	0.00026000 g/bhp-hr	GRI Field
Propional	0.0856	0.00086500 g/bhp-hr	GRI Field
Propylene Oxide	0.0126	0.00012730 g/bhp-hr	EPA
Benzene	0.0533	0.00053840 g/bhp-hr	GRI Field
Toluene	0.0407	0.00041100 g/bhp-hr	GRI Field
Ethylbenzene	0.0139	0.00014050 g/bhp-hr	EPA
Xylenes(m,p,o)	0.1231	0.00124410 g/bhp-hr	GRI Field
2,2,4-Trimethylpentane	0.1589	0.00160530 g/bhp-hr	GRI Field
n-Hexane	0.1491	0.00150580 g/bhp-hr	GRI Field
Phenol	0.0109	0.00011010 g/bhp-hr	GRI Field
Naphthalene	0.0008	0.00000760 g/bhp-hr	GRI Field
2-Methylnaphthalene	0.0001	0.00000130 g/bhp-hr	GRI Field
Biphenyl	0.0327	0.00033050 g/bhp-hr	GRI Field
Phenanthrene	0.0000	0.00000050 g/bhp-hr	GRI Field
Chrysene	0.0001	0.00000100 g/bhp-hr	GRI Field
Beryllium	0.0000	0.00000010 g/bhp-hr	GRI Field
Phosphorus	0.0065	0.00006520 g/bhp-hr	GRI Field
Chromium	0.0008	0.00000820 g/bhp-hr	GRI Field
Manganese	0.0017	0.00001750 g/bhp-hr	GRI Field
Nickel	0.0006	0.00000610 g/bhp-hr	GRI Field
Cobalt	0.0002	0.00000160 g/bhp-hr	GRI Field
Arsenic	0.0001	0.00000060 g/bhp-hr	GRI Field
Selenium	0.0000	0.00000030 g/bhp-hr	GRI Field
Cadmium	0.0000	0.00000020 g/bhp-hr	GRI Field
Mercury	0.0003	0.00000270 g/bhp-hr	GRI Field
Lead	0.0003	0.00000340 g/bhp-hr	GRI Field
Total	4.1176		

Criteria Pollutants

PM	2.8678	0.02897200 g/bhp-hr	EPA
CO	208.6867	2.10828420 g/bhp-hr	GRI Field
NMHC	19.1908	0.19387800 g/bhp-hr	GRI Field
NMEHC	0.9125	0.00921840 g/bhp-hr	EPA
NOx	123.9443	1.25216290 g/bhp-hr	GRI Field
SO2	0.1017	0.00102720 g/bhp-hr	GRI Field

Other Pollutants

Methane	97.7164	0.98719230 g/bhp-hr	GRI Field
Acetylene	0.7093	0.00716540 g/bhp-hr	GRI Field
Ethylene	1.3813	0.01395450 g/bhp-hr	GRI Field
Ethane	14.8559	0.15008370 g/bhp-hr	GRI Field
Propane	1.5837	0.01600000 g/bhp-hr	GRI Field
Isobutane	0.4751	0.00480000 g/bhp-hr	GRI Field
Butane	0.5147	0.00520000 g/bhp-hr	GRI Field
Cyclopentane	0.1634	0.00165110 g/bhp-hr	GRI Field
Butyrald/Isobutyraldehyde	0.1326	0.00134000 g/bhp-hr	GRI Field
n-Pentane	8.0326	0.08115000 g/bhp-hr	GRI Field
Cyclohexane	0.6062	0.00612400 g/bhp-hr	GRI Field
Methylcyclohexane	0.8741	0.00883120 g/bhp-hr	GRI Field
n-Octane	0.3157	0.00318890 g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.2970	0.00300000 g/bhp-hr	GRI Field
n-Nonane	0.0527	0.00053260 g/bhp-hr	GRI Field

CO2	47,796.0839	482.86607780 g/bhp-hr	EPA
Vanadium	0.0001	0.00000070 g/bhp-hr	GRI Field
Copper	0.0020	0.00002050 g/bhp-hr	GRI Field
Molybdenum	0.0020	0.00002030 g/bhp-hr	GRI Field
Barium	0.0023	0.00002290 g/bhp-hr	GRI Field

Unit Name: C-01

Hours of Operation: 8,760 Yearly

Rate Power: 14521 hp

Fuel Type: NATURAL GAS

Emission Factor Set: FIELD > EPA > LITERATURE

Additional EF Set: -NONE-

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
PAHs	0.0014	0.00000970 g/bhp-hr	EPA
Formaldehyde	2.3727	0.01693680 g/bhp-hr	GRI Field
Acetaldehyde	2.4286	0.01733570 g/bhp-hr	GRI Field
1,3-Butadiene	0.0086	0.00006160 g/bhp-hr	GRI Field
Acrolein	0.0364	0.00026000 g/bhp-hr	GRI Field
Propional	0.1212	0.00086500 g/bhp-hr	GRI Field
Propylene Oxide	0.0178	0.00012730 g/bhp-hr	EPA
Benzene	0.0754	0.00053840 g/bhp-hr	GRI Field
Toluene	0.0576	0.00041100 g/bhp-hr	GRI Field
Ethylbenzene	0.0197	0.00014050 g/bhp-hr	EPA
Xylenes(m,p,o)	0.1743	0.00124410 g/bhp-hr	GRI Field
2,2,4-Trimethylpentane	0.2249	0.00160530 g/bhp-hr	GRI Field
n-Hexane	0.2110	0.00150580 g/bhp-hr	GRI Field
Phenol	0.0154	0.00011010 g/bhp-hr	GRI Field
Naphthalene	0.0011	0.00000760 g/bhp-hr	GRI Field
2-Methylnaphthalene	0.0002	0.00000130 g/bhp-hr	GRI Field
Biphenyl	0.0463	0.00033050 g/bhp-hr	GRI Field
Phenanthrene	0.0001	0.00000050 g/bhp-hr	GRI Field
Chrysene	0.0001	0.00000100 g/bhp-hr	GRI Field
Beryllium	0.0000	0.00000010 g/bhp-hr	GRI Field
Phosphorus	0.0091	0.00006520 g/bhp-hr	GRI Field
Chromium	0.0011	0.00000820 g/bhp-hr	GRI Field
Manganese	0.0025	0.00001750 g/bhp-hr	GRI Field
Nickel	0.0009	0.00000610 g/bhp-hr	GRI Field
Cobalt	0.0002	0.00000160 g/bhp-hr	GRI Field
Arsenic	0.0001	0.00000060 g/bhp-hr	GRI Field
Selenium	0.0000	0.00000030 g/bhp-hr	GRI Field
Cadmium	0.0000	0.00000020 g/bhp-hr	GRI Field
Mercury	0.0004	0.00000270 g/bhp-hr	GRI Field
Lead	0.0005	0.00000340 g/bhp-hr	GRI Field
Total	5.8276		

Criteria Pollutants

PM	4.0588	0.02897200 g/bhp-hr	EPA
CO	295.3547	2.10828420 g/bhp-hr	GRI Field
NMHC	27.1608	0.19387800 g/bhp-hr	GRI Field
NMEHC	1.2914	0.00921840 g/bhp-hr	EPA
NOx	175.4186	1.25216290 g/bhp-hr	GRI Field
SO2	0.1439	0.00102720 g/bhp-hr	GRI Field

Other Pollutants

Methane	138.2982	0.98719230 g/bhp-hr	GRI Field
Acetylene	1.0038	0.00716540 g/bhp-hr	GRI Field
Ethylene	1.9549	0.01395450 g/bhp-hr	GRI Field
Ethane	21.0256	0.15008370 g/bhp-hr	GRI Field
Propane	2.2415	0.01600000 g/bhp-hr	GRI Field
Isobutane	0.6724	0.00480000 g/bhp-hr	GRI Field
Butane	0.7285	0.00520000 g/bhp-hr	GRI Field
Cyclopentane	0.2313	0.00165110 g/bhp-hr	GRI Field
Butyrald/Isobutyraldehyde	0.1877	0.00134000 g/bhp-hr	GRI Field
n-Pentane	11.3685	0.08115000 g/bhp-hr	GRI Field
Cyclohexane	0.8579	0.00612400 g/bhp-hr	GRI Field
Methylcyclohexane	1.2372	0.00883120 g/bhp-hr	GRI Field
n-Octane	0.4467	0.00318890 g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.4203	0.00300000 g/bhp-hr	GRI Field
n-Nonane	0.0746	0.00053260 g/bhp-hr	GRI Field
CO2	67,645.9001	482.86607780 g/bhp-hr	EPA
Vanadium	0.0001	0.00000070 g/bhp-hr	GRI Field
Copper	0.0029	0.00002050 g/bhp-hr	GRI Field
Molybdenum	0.0028	0.00002030 g/bhp-hr	GRI Field
Barium	0.0032	0.00002290 g/bhp-hr	GRI Field

GRI-HAPCalc ® 3.01
Fugitive Emissions Report

Facility ID:	**LORDSBURG**	**Notes:**	**A-01/A-02: GE M3712R turbines**
Operation Type:	**COMPRESSOR STATION**		**B-01: GE M3102R turbine**
Facility Name:	**LORDSBURG COMPRESSOR STATION**		**C-01: Solar Mars 100S turbine**
User Name:			**F-001/F-002: Fugitive emissions**
Units of Measure:	**U.S. STANDARD**		

Note: Emissions less than 5.00E-09 tons (or tonnes) per year are considered insignificant and are treated as zero. These emissions are indicated on the report with a "0". Emissions between 5.00E-09 and 5.00E-05 tons (or tonnes) per year are represented on the report with "0.0000".

Fugitive Emissions

Calculation Method: EPA Average Factors

User Inputs

Component	Gas Service	Light Liquid Service	Heavy Liquid Service
Connections:	737	0	0
Flanges	120	0	0
Open-Ended Lines:	14	0	0
Pumps:	0	0	0
Valves:	257	0	0
Others:	30	0	0

Calculated Emissions (ton/yr)

Chemical Name	Emissions
HAPs	
Benzene	0.0037
Toluene	0.0062
Ethylbenzene	0.0003
Xylenes(m,p,o)	0.0016
Total	0.0118
Criteria Pollutants	
NMHC	1.2712
NMEHC	0.5561

Emission Estimates at Start-up, Shutdown, and Commissioning for SoLoNOx Combustion Products

Leslie Witherspoon
Solar Turbines Incorporated

PURPOSE

The purpose of this Product Information Letter (PIL) is to provide emission estimates for start-up and shutdown events for *Solar*® gas turbines with *SoLoNOx*™ dry low emissions combustion systems. The commissioning process is also discussed.

INTRODUCTION

The information presented in this document is representative for both generator set (GS) and compressor set/mechanical drive (CS/MD) combustion turbine applications. Operation of duct burners and/or any add-on control equipment is not accounted for in the emissions estimates. Emissions related to the start-up, shutdown, and commissioning of combustion turbines will not be guaranteed or warranted.

Combustion turbine start-up occurs in one of three modes: cold, warm, or hot. On large, utility size, combustion turbines, the start-up time varies by the "mode". The start-up duration for a hot, warm, or cold *Solar* turbine is less than 10 minutes in simple-cycle and most combined heat and power applications.

Heat recovery steam generator (HRSG) steam pressure is usually 250 psig or less. At 250 psig or less, thermal stress within the HRSG is minimized and, therefore, firing ramp-up is not limited. However, some combined heat and power plant applications will desire or dictate longer start-up times, therefore emissions assuming a 60-minute start are also estimated.

A typical shutdown for a *Solar* turbine is <10 minutes. Emissions estimates for an elongated shutdown, 30-minutes, are also included.

Start-up and shutdown emissions estimates for the *Mercury*™ 50 engine are found in PIL 205.

For start-up and shutdown emissions estimates for conventional combustion turbines, landfill gas, digester gas, or other alternative fuel applications, contact Solar's Environmental Programs Department.

START-UP SEQUENCE

The start-up sequence, or getting to *SoLoNOx* combustion mode, takes three steps:

1. Purge-crank
2. Ignition and acceleration to idle
3. Loading / thermal stabilization

During the "purge-crank" step, rotation of the turbine shaft is accomplished with a starter motor to remove any residual fuel gas in the engine flow path and exhaust. During

"ignition and acceleration to idle," fuel is introduced into the combustor and ignited in a diffusion flame mode and the engine rotor is accelerated to idle speed.

The third step consists of applying up to 50% load[1] while allowing the combustion flame to transition and stabilize. Once 50% load is achieved, the turbine transitions to *SoLoNOx* combustion mode and the engine control system begins to hold the combustion primary zone temperature and limit pilot fuel to achieve the targeted nitrogen oxides (NOx), carbon monoxide (CO), and unburned hydrocarbons (UHC) emission levels.

Steps 2 and 3 are short-term transient conditions making up less than 10 minutes.

SHUTDOWN PROCESS

Normal, planned cool down/shutdown duration varies by engine model. The *Centaur*® 40, *Centaur* 50, *Taurus*™ 60, and *Taurus* 65 engines take about 5 minutes. The *Taurus* 70, *Mars*® 90 and *Mars* 100, *Titan*™ 130 and *Titan* 250 engines take about 10 minutes. Typically, once the shutdown process starts, the emissions will remain in *SoLoNOx* mode for approximately 90 seconds and move into a transitional mode for the balance of the estimated shutdown time (assuming the unit was operating at full-load).

START-UP AND SHUTDOWN EMISSIONS ESTIMATES

Tables 1 through 5 summarize the estimated pounds of emissions per start-up and shutdown event for each product. Emissions estimates are presented for both GS and CS/MD applications on both natural gas and liquid fuel (diesel #2). The emissions estimates are calculated using empirical exhaust characteristics.

COMMISSIONING EMISSIONS

Commissioning generally takes place over a two-week period. Static testing, where no combustion occurs, usually requires one week and no emissions are expected. Dynamic testing, where combustion will occur, will see the engine start and shutdown a number of times and a variety of loads will be placed on the system. It is impossible to predict how long the turbine will run and in what combustion / emissions mode it will be running. The dynamic testing period is generally followed by one to two days of "tune-up" during which the turbine is running at various loads, most likely within low emissions mode (warranted emissions range).

Solar Turbines Incorporated
9330 Sky Park Court
San Diego, CA 92123-5398

[1] 40% load for the *Titan* 250 engine on natural gas. 65% load for all engines on liquid fuel (except 80% load for the *Centaur* 40).

Table 3. Estimation of Start-up and Shutdown Emissions (lbs/event) for SoLoNOx CS/MD Applications

10 Minute Start-up and 10 Minute Shutdown

Natural Gas Fuel

Data will NOT be warranted under any circumstances

	Centaur 40 4702S				Centaur 50 6102S				Taurus 60 7802S			
	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)
Total Emissions per Start (lbs)	0.7	64.4	3.7	392	0.8	69.1	4.0	469	0.7	64.3	3.7	410
Total Emissions per Shutdown (lbs)	0.3	30.2	1.7	181	0.4	35.4	2.0	217	0.4	33.0	1.9	204

	Taurus 70 10802S				Mars 90 13002S CSMD				Mars 100 16002S CSMD				Titan 130 20502S				Titan 250 30002S			
	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)	NOx (lbs)	CO (lbs)	UHC (lbs)	CO2 (lbs)
Total Emissions per Start (lbs)	0.9	83.6	4.8	582	1.2	109.3	6.2	805	1.4	123.5	7.1	829	1.9	176.9	10.1	1,161	2.6	26.2	1.7	1,794
Total Emissions per Shutdown (lbs)	1.3	108.2	6.2	665	1.5	132.6	7.6	817	1.7	149.2	8.5	920	2.4	207.6	11.9	1,272	2.9	19.1	1.4	1,918

Assumes ISO conditions: 59F, 60% RH, sea level, no losses.

Assumes unit is operating at full load prior to shutdown.

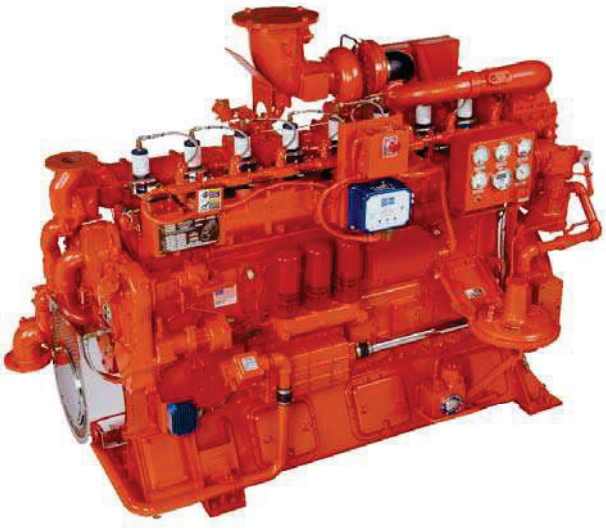
Assumes natural gas fuel; ES 9-98 compliant.

GE Power & Water

Waukesha* gas engines VGF*

H24GL

355 - 585 BHP (265 - 440 kWb)



The VGF series of high-speed engines are built with the durability expected from a medium-speed engine. This series of engines is designed for a wide range of stationary, spark-ignited, gaseous fuel applications and has a high power-to-weight ratio operating up to 1800 RPM.

The VGF Series simplifies maintenance procedures. The engine design allows easy access to the oil pump, main bearings and rod bearings—without the need to lower the oil pan. Commonality of parts between VGF models reduces the amount of inventory needed for servicing a fleet. Standard design features, such as independent heads, simplify maintenance work.

technical data

Cylinders	Inline 8	
Piston displacement	1462 cu. in. (24 L)	
Compression ratio	LCR 8.7:1, HCR 11:1	
Bore & stroke	5.98" x 6.5" (152 x 165 mm)	
Jacket water system capacity	20 gal. (75 L)	
Lube oil capacity	56 gal. (212 L)	
Fuel Pressure Range	25 - 50 psi (1.72 - 3.45 bar)	
Starting system	150 psi max. air/gas 24V DC electric	
Cooling Water Flow at	**1500 rpm**	**1800 rpm**
Jacket Water gpm (l/m)	103 (390)	130 (492)
Aux. Water gpm (l/m)	25 (95)	35 (133)

Dimensions l x w x h inch (mm)

96.5 (2451) x 50 (1264) x 68 (1727)

Weights lb (kg)

7500 (3400)

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*Trademark of General Electric Company

performance data

Intercooler Water Temperature 130°F (54°C)		1800 RPM	1500 RPM
	Power bhp (kWb)	530 (395)	445 (330)
	BSFC (LHV) Btu/bhp-hr (kJ/kWh)	7120 (10082)	6902 (9826)
	Fuel Consumption Btu/hr x 1000 (kW)	3774 (1106)	3071 (901)
Emissions	NOx g/bhp-hr (mg/Nm^3 @ 5% O_2)	2.00 (810)	2.4 (981)
	CO g/bhp-hr (mg/Nm^3 @ 5% O_2)	1.30 (535)	1.4 (564)
	NMHC g/bhp-hr (mg/Nm^3 @ 5% 0_2)	0.27 (108)	0.31 (125)
	THC g/bhp-hr (mg/Nm^3 @ 5% O_2)	1.7 (683)	2.2 (836)
Heat Balance	Heat to Jacket Water Btu/hr x 1000 (kW)	980 (287)	833 (244)
	Heat to Lube Oil Btu/hr x 1000 (kW)	126 (37)	91 (27)
	Heat to Intercooler Btu/hr x 1000 (kW)	226 (66)	153 (45)
	Heat to Radiation Btu/hr x 1000 (kW)	89 (26)	83 (24)
	Total Exhaust Heat Btu/hr x 1000 (kW)	1077 (316)	839 (246)
Intake/ Exhaust System	Induction Air Flow scfm (Nm^3/hr)	1139 (1749)	927 (1425)
	Exhaust Flow lb/hr (kg/hr)	4964 (2251)	4041 (1834)
	Exhaust Temperature °F (°C)	838 (448)	804 (429)

All data according to full load and subject to technical development and modification.

Consult your local GE Power & Water's representative for system application assistance. The manufacturer reserves the right to change or modify without notice, the design or equipment specifications as herein set forth without incurring any obligation either with respect to equipment previously sold or in the process of construction except where otherwise specifically guaranteed by the manufacturer.

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GE Power & Water
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Waukesha, WI 53188-4999
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Visit us online at:
www.ge-waukesha.com

7073 0413 GEA-19031

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES[a]
(SCC 2-02-002-54)

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO_x[c] 90 - 105% Load	4.08 E+00	B
NO_x[c] <90% Load	8.47 E-01	B
CO[c] 90 - 105% Load	3.17 E-01	C
CO[c] <90% Load	5.57 E-01	B
CO_2[d]	1.10 E+02	A
SO_2[e]	5.88 E-04	A
TOC[f]	1.47 E+00	A
Methane[g]	1.25 E+00	C
VOC[h]	1.18 E-01	C
PM10 (filterable)[i]	7.71 E-05	D
PM2.5 (filterable)[i]	7.71 E-05	D
PM Condensable[j]	9.91 E-03	D
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane[k]	<4.00 E-05	E
1,1,2-Trichloroethane[k]	<3.18 E-05	E
1,1-Dichloroethane	<2.36 E-05	E
1,2,3-Trimethylbenzene	2.30 E-05	D
1,2,4-Trimethylbenzene	1.43 E-05	C
1,2-Dichloroethane	<2.36 E-05	E
1,2-Dichloropropane	<2.69 E-05	E
1,3,5-Trimethylbenzene	3.38 E-05	D
1,3-Butadiene[k]	2.67E-04	D
1,3-Dichloropropene[k]	<2.64 E-05	E
2-Methylnaphthalene[k]	3.32 E-05	C
2,2,4-Trimethylpentane[k]	2.50 E-04	C
Acenaphthene[k]	1.25 E-06	C

GRI-HAPCalc ® 3.01
Engines Report

Facility ID: LORDSBURG
Operation Type: COMPRESSOR STATION
Facility Name:
User Name:
Units of Measure: U.S. STANDARD
Notes:

Note: Emissions less than 5.00E-09 tons (or tonnes) per year are considered insignificant and are treated as zero. These emissions are indicated on the report with a "0". Emissions between 5.00E-09 and 5.00E-05 tons (or tonnes) per year are represented on the report with "0.0000".

Engine Unit

Unit Name: AUX C-01

Hours of Operation: 500 Yearly
Rate Power: 558 hp
Fuel Type: NATURAL GAS
Engine Type: 4-Stroke, Lean Burn
Emission Factor Set: EPA > FIELD > LITERATURE
Additional EF Set: -NONE-

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
Tetrachloroethane	0.0000	0.00000820 g/bhp-hr	EPA
Formaldehyde	0.0535	0.17425810 g/bhp-hr	EPA
Methanol	0.0025	0.00825090 g/bhp-hr	EPA
Acetaldehyde	0.0085	0.02759090 g/bhp-hr	EPA
1,3-Butadiene	0.0003	0.00088120 g/bhp-hr	EPA
Acrolein	0.0052	0.01696380 g/bhp-hr	EPA
Benzene	0.0004	0.00145220 g/bhp-hr	EPA
Toluene	0.0004	0.00134650 g/bhp-hr	EPA
Ethylbenzene	0.0000	0.00013100 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0002	0.00060730 g/bhp-hr	EPA
2,2,4-Trimethylpentane	0.0003	0.00082510 g/bhp-hr	EPA
n-Hexane	0.0011	0.00366340 g/bhp-hr	EPA
Phenol	0.0000	0.00007920 g/bhp-hr	EPA
Styrene	0.0000	0.00007790 g/bhp-hr	EPA
Naphthalene	0.0001	0.00024550 g/bhp-hr	EPA
2-Methylnaphthalene	0.0000	0.00010960 g/bhp-hr	EPA
Acenaphthylene	0.0000	0.00001830 g/bhp-hr	EPA
Biphenyl	0.0002	0.00069970 g/bhp-hr	EPA
Acenaphthene	0.0000	0.00000410 g/bhp-hr	EPA
Fluorene	0.0000	0.00001870 g/bhp-hr	EPA
Phenanthrene	0.0000	0.00003430 g/bhp-hr	EPA
Ethylene Dibromide	0.0000	0.00014620 g/bhp-hr	EPA
Fluoranthene	0.0000	0.00000370 g/bhp-hr	EPA
Pyrene	0.0000	0.00000450 g/bhp-hr	EPA
Chrysene	0.0000	0.00000230 g/bhp-hr	EPA

Benzo(b)fluoranthene	0.0000	0.00000050	g/bhp-hr	EPA
Benzo(e)pyrene	0.0000	0.00000140	g/bhp-hr	EPA
Benzo(g,h,i)perylene	0.0000	0.00000140	g/bhp-hr	EPA
Vinyl Chloride	0.0000	0.00004920	g/bhp-hr	EPA
Methylene Chloride	0.0000	0.00006600	g/bhp-hr	EPA
1,1-Dichloroethane	0.0000	0.00007790	g/bhp-hr	EPA
1,3-Dichloropropene	0.0000	0.00008710	g/bhp-hr	EPA
Chlorobenzene	0.0000	0.00010030	g/bhp-hr	EPA
Chloroform	0.0000	0.00009410	g/bhp-hr	EPA
1,1,2-Trichloroethane	0.0000	0.00010500	g/bhp-hr	EPA
1,1,2,2-Tetrachloroethane	0.0000	0.00013200	g/bhp-hr	EPA
Carbon Tetrachloride	0.0000	0.00012110	g/bhp-hr	EPA
Total	0.0727			

Criteria Pollutants

PM	0.0101	0.03296090	g/bhp-hr	EPA
CO	0.3215	1.04620860	g/bhp-hr	EPA
NMEHC	0.1197	0.38944040	g/bhp-hr	EPA
NOx	4.1375	13.46539810	g/bhp-hr	EPA
SO2	0.0006	0.00194060	g/bhp-hr	EPA

Other Pollutants

Chloroethane	0.0000	0.00000620	g/bhp-hr	EPA
Butryaldehyde	0.0001	0.00033330	g/bhp-hr	EPA
Methane	1.2676	4.12542830	g/bhp-hr	EPA
Ethane	0.1065	0.34653600	g/bhp-hr	EPA
Propane	0.0425	0.13828440	g/bhp-hr	EPA
Butane	0.0005	0.00178550	g/bhp-hr	EPA
Cyclopentane	0.0002	0.00074920	g/bhp-hr	EPA
n-Pentane	0.0026	0.00858090	g/bhp-hr	EPA
Methylcyclohexane	0.0012	0.00405940	g/bhp-hr	EPA
1,2-Dichloroethane	0.0000	0.00007790	g/bhp-hr	EPA
1,2-Dichloropropane	0.0000	0.00008880	g/bhp-hr	EPA
n-Octane	0.0004	0.00115840	g/bhp-hr	EPA
1,2,3-Trimethylbenzene	0.0000	0.00007590	g/bhp-hr	EPA
1,2,4-Trimethylbenzene	0.0000	0.00004720	g/bhp-hr	EPA
1,3,5-Trimethylbenzene	0.0000	0.00011160	g/bhp-hr	EPA
n-Nonane	0.0001	0.00036300	g/bhp-hr	EPA
CO2	111.5501	363.03769350	g/bhp-hr	EPA

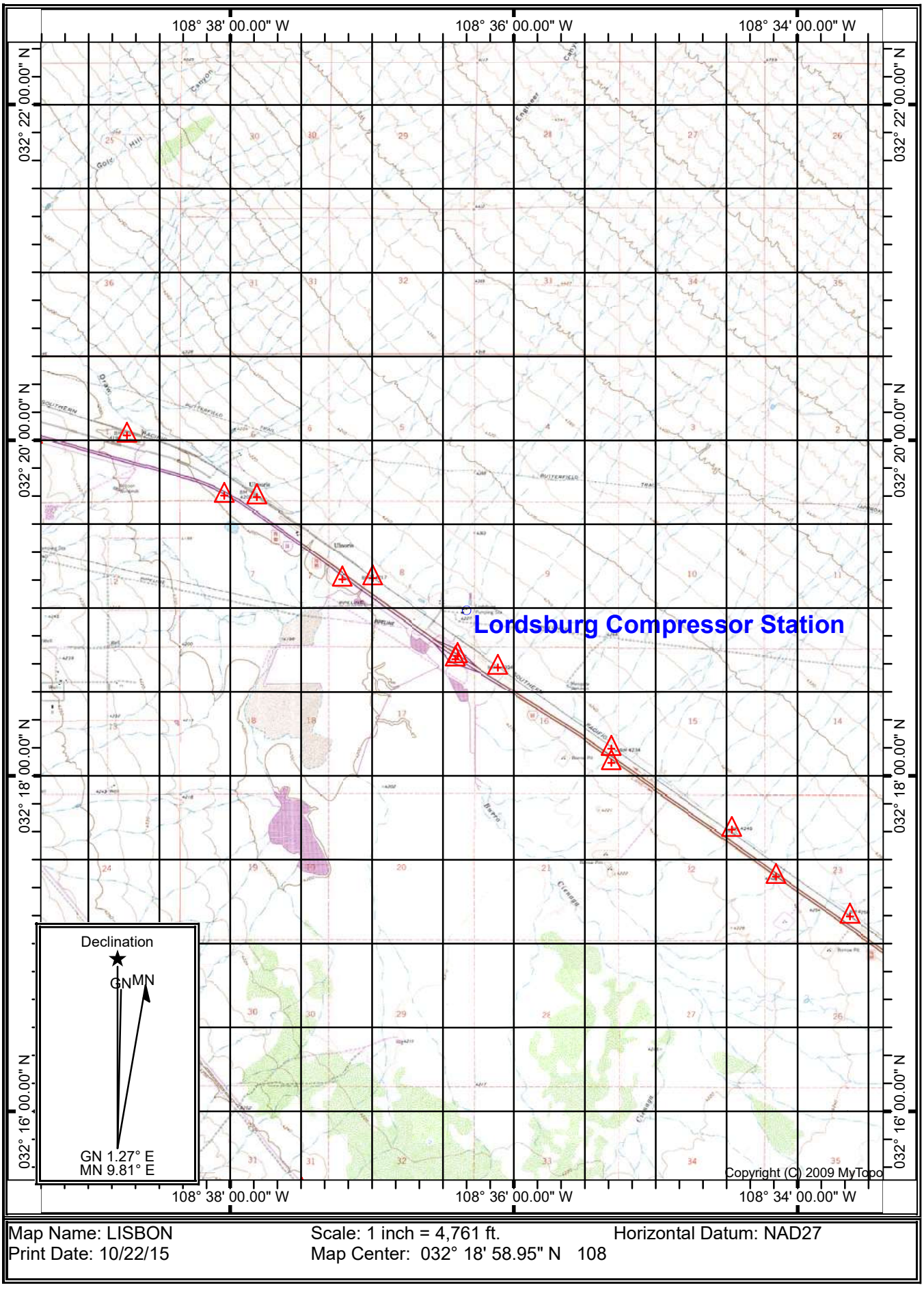
Section 8

Map(s)

A map such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

The UTM or Longitudinal coordinate system on both axes	An indicator showing which direction is north
A minimum radius around the plant of 0.8km (0.5 miles)	Access and haul roads
Topographic features of the area	Facility property boundaries
The name of the map	The area which will be restricted to public access
A graphical scale	

A map showing the location of this facility is attached.



Map Name: LISBON
Print Date: 10/22/15

Scale: 1 inch = 4,761 ft.
Map Center: 032° 18' 58.95" N 108

Horizontal Datum: NAD27

Section 9

Proof of Public Notice

(for NSR applications submitting under 20.2.72 or 20.2.74 NMAC)
(This proof is required by: 20.2.72.203.A.14 NMAC "Documentary Proof of applicant's public notice")

☑ **I have read the AQB "Guidelines for Public Notification for Air Quality Permit Applications"**
This document provides detailed instructions about public notice requirements for various permitting actions. It also provides public notice examples and certification forms. Material mistakes in the public notice will require a re-notice before issuance of the permit.

Unless otherwise allowed elsewhere in this document, the following items document proof of the applicant's Public Notification. Please include this page in your proof of public notice submittal with checkmarks indicating which documents are being submitted with the application.

New Permit and **Significant Permit Revision** public notices must include all items in this list.

Technical Revision public notices require only items 1, 5, 9, and 10.

Per the Guidelines for Public Notification document mentioned above, include:

1. ☐ A copy of the certified letter receipts with post marks (20.2.72.203.B NMAC)
2. ☐ A list of the places where the public notice has been posted in at least four publicly accessible and conspicuous places, including the proposed or existing facility entrance. (e.g: post office, library, grocery, etc.)
3. ☐ A copy of the property tax record (20.2.72.203.B NMAC).
4. ☐ A sample of the letters sent to the owners of record.
5. ☐ A sample of the letters sent to counties, municipalities, and Indian tribes.
6. ☐ A sample of the public notice posted and a verification of the local postings.
7. ☐ A table of the noticed citizens, counties, municipalities and tribes and to whom the notices were sent in each group.
8. ☐ A copy of the public service announcement (PSA) sent to a local radio station and documentary proof of submittal.
9. ☐ A copy of the classified or legal ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
10. ☐ A copy of the display ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
11. ☐ A map with a graphic scale showing the facility boundary and the surrounding area in which owners of record were notified by mail. This is necessary for verification that the correct facility boundary was used in determining distance for notifying land owners of record.

N/A – Public notice not required for Title V applications.

Section 10

Written Description of the Routine Operations of the Facility

---

A written description of the routine operations of the facility. Include a description of how each piece of equipment will be operated, how controls will be used, and the fate of both the products and waste generated. For modifications and/or revisions, explain how the changes will affect the existing process. In a separate paragraph describe the major process bottlenecks that limit production. The purpose of this description is to provide sufficient information about plant operations for the permit writer to determine appropriate emission sources.

Natural gas from one of three pipeline systems ("A", "B", or "C") enters the facility and passes through the corresponding (units A-01 and A-02, B-01, or C-01) natural gas turbine-driven compressor(s). Compressed natural gas enters the pipeline and leaves the facility.

A natural gas-fueled emergency generator (unit AUX C-01) is maintained on-site to provide electric power when service from the local utility is interrupted. Operation of unit AUX C-01 is limited to 500 hours per calendar year.

Section 11
Source Determination

Source submitting under 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC

Sources applying for a construction permit, PSD permit, or operating permit shall evaluate surrounding and/or associated sources (including those sources directly connected to this source for business reasons) and complete this section. Responses to the following questions shall be consistent with the Air Quality Bureau's permitting guidance, Single Source Determination Guidance, which may be found on the Applications Page in the Permitting Section of the Air Quality Bureau website.

Typically, buildings, structures, installations, or facilities that have the same SIC code, that are under common ownership or control, and that are contiguous or adjacent constitute a single stationary source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes. Submission of your analysis of these factors in support of the responses below is optional, unless requested by NMED.

A. Identify the emission sources evaluated in this section (list and describe)**: See Table 2-A in Section 2 of this application.**

B. Apply the 3 criteria for determining a single source:

SIC Code: Surrounding or associated sources belong to the same 2-digit industrial grouping (2-digit SIC code) as this facility, OR surrounding or associated sources that belong to different 2-digit SIC codes are support facilities for this source.

☑ **Yes** ☐ **No**

Common Ownership or Control: Surrounding or associated sources are under common ownership or control as this source.

☑ **Yes** ☐ **No**

Contiguous or Adjacent: Surrounding or associated sources are contiguous or adjacent with this source.

☑ **Yes** ☐ **No**

C. Make a determination:

☑ The source, as described in this application, constitutes the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes. If in "A" above you evaluated only the source that is the subject of this application, all "**YES**" boxes should be checked. If in "A" above you evaluated other sources as well, you must check **AT LEAST ONE** of the boxes "**NO**" to conclude that the source, as described in the application, is the entire source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes.

☐ The source, as described in this application, **does not** constitute the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes (A permit may be issued for a portion of a source). The entire source consists of the following facilities or emissions sources (list and describe):

Section 12

Section 12.A

PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

A PSD applicability determination for all sources. For sources applying for a significant permit revision, apply the applicable requirements of 20.2.74.AG and 20.2.74.200 NMAC and to determine whether this facility is a major or minor PSD source, and whether this modification is a major or a minor PSD modification. It may be helpful to refer to the procedures for Determining the Net Emissions Change at a Source as specified by Table A-5 (Page A.45) of the EPA New Source Review Workshop Manual to determine if the revision is subject to PSD review.

A. This facility is:

- ☐ **a minor PSD source before and after this modification (if so, delete C and D below).**
- ☐ **a major PSD source before this modification. This modification will make this a PSD minor source.**
- ☐ **an existing PSD Major Source that has never had a major modification requiring a BACT analysis.**
- ☐ **an existing PSD Major Source that has had a major modification requiring a BACT analysis**
- ☐ **a new PSD Major Source after this modification.**

B. **This facility [is or is not] one of the listed 20.2.74.501 Table I – PSD Source Categories. The "project" emissions** for this modification are **[significant or not significant]. [Discuss why.] The "project" emissions listed below [do or do not] only result from changes described in this permit application, thus no emissions from other [revisions or modifications, past or future] to this facility. Also, specifically discuss whether this project results in "de-bottlenecking", or other associated emissions resulting in higher emissions. The project emissions (before netting) for this project are as follows [see Table 2 in 20.2.74.502 NMAC for a complete list of significance levels]:**

a. **NOx: XX.X TPY**
b. **CO: XX.X TPY**
c. **VOC: XX.X TPY**
d. **SOx: XX.X TPY**
e. **PM: XX.X TPY**
f. **PM10: XX.X TPY**
g. **PM2.5: XX.X TPY**
h. **Fluorides: XX.X TPY**
i. **Lead: XX.X TPY**
j. **Sulfur compounds (listed in Table 2): XX.X TPY**
k. **GHG: XX.X TPY**

C. **Netting [is required, and analysis is attached to this document.] OR [is not required (project is not significant)] OR [Applicant is submitting a PSD Major Modification and chooses not to net.]**

D. **BACT** is **[not required for this modification, as this application is a minor modification.] OR [required, as this application is a major modification. List pollutants subject to BACT review and provide a full top down BACT determination.]**

E. If this is an existing PSD major source, or any facility with emissions greater than 250 TPY (or 100 TPY for 20.2.74.501 Table 1 – PSD Source Categories), determine whether any permit modifications are related, or could be considered a single project with this action, and provide an explanation for your determination whether a PSD modification is triggered.

This application is being submitted pursuant to 20.2.70 NMAC therefore a PSD applicability determination is not required.

Section 13

Determination of State & Federal Air Quality Regulations

This section lists each state and federal air quality regulation that may apply to your facility and/or equipment that are stationary sources of regulated air pollutants.

Not all state and federal air quality regulations are included in this list. Go to the Code of Federal Regulations (CFR) or to the Air Quality Bureau's regulation page to see the full set of air quality regulations.

Required Information for Specific Equipment:
For regulations that apply to specific source types, in the 'Justification' column **provide any information needed to determine if the regulation does or does not apply**. **For example**, to determine if emissions standards at 40 CFR 60, Subpart IIII apply to your three identical stationary engines, we need to know the construction date as defined in that regulation; the manufacturer date; the date of reconstruction or modification, if any; if they are or are not fire pump engines; if they are or are not emergency engines as defined in that regulation; their site ratings; and the cylinder displacement.

Required Information for Regulations that Apply to the Entire Facility:
See instructions in the 'Justification' column for the information that is needed to determine if an 'Entire Facility' type of regulation applies (e.g. 20.2.70 or 20.2.73 NMAC).

Regulatory Citations for Regulations That Do Not, but Could Apply:
If there is a state or federal air quality regulation that does not apply, but you have a piece of equipment in a source category for which a regulation has been promulgated, you must **provide the low level regulatory citation showing why your piece of equipment is not subject to or exempt from the regulation. For example** if you have a stationary internal combustion engine that is not subject to 40 CFR 63, Subpart ZZZZ because it is an existing 2 stroke lean burn stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, your citation would be 40 CFR 63.6590(b)(3)(i). **We don't want a discussion of every non-applicable regulation, but if it is possible a regulation could apply, explain why it does not. For example,** if your facility is a power plant, you do not need to include a citation to show that 40 CFR 60, Subpart OOO does not apply to your non-existent rock crusher.

Regulatory Citations for Emission Standards:
For each unit that is subject to an emission standard in a source specific regulation, such as 40 CFR 60, Subpart OOO or 40 CFR 63, Subpart HH, include the low level regulatory citation of that emission standard. Emission standards can be numerical emission limits, work practice standards, or other requirements such as maintenance. **Here are examples:** a glycol dehydrator is subject to the general standards at 63.764C(1)(i) through (iii); an engine is subject to 63.6601, Tables 2a and 2b; a crusher is subject to 60.672(b), Table 3 and all transfer points are subject to 60.672(e)(1)

Federally Enforceable Conditions:
All federal regulations are federally enforceable. All Air Quality Bureau State regulations are federally enforceable except for the following: affirmative defense portions at 20.2.7.6.B, 20.2.7.110(B)(15), 20.2.7.11 through 20.2.7.113, 20.2.7.115, and 20.2.7.116; 20.2.37; 20.2.42; 20.2.43; 20.2.62; 20.2.63; 20.2.86; 20.2.89; and 20.2.90 NMAC. Federally enforceable means that EPA can enforce the regulation as well as the Air Quality Bureau and federally enforceable regulations can count toward determining a facility's potential to emit (PTE) for the Title V, PSD, and nonattainment permit regulations.

INCLUDE ANY OTHER INFORMATION NEEDED TO COMPLETE AN APPLICABILITY DETERMINATION OR THAT IS RELEVENT TO YOUR FACILITY'S NOTICE OF INTENT OR PERMIT.

EPA Applicability Determination Index for 40 CFR 60, 61, 63, etc: http://cfpub.epa.gov/adi/

Table for State Regulations:

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.1 NMAC	General Provisions	Yes	Facility	General Provisions apply to Notice of Intent, Construction, and Title V permit applications.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	Yes	Facility	20.2.3 NMAC is a State Implementation Plan (SIP) approved regulation that limits the maximum allowable concentration of, Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide. The facility meets maximum allowable concentrations of SO_2, NO_x, and CO under this regulation.
20.2.7 NMAC	Excess Emissions	Yes	Facility	All Title V major sources are subject to Air Quality Control Regulations, as defined in 20.2.7 NMAC, and are thus subject to the requirements of this regulation. Also listed as applicable in NSR Permit PSD-2810-M5.
20.2.23 NMAC	Fugitive Dust Control	N/A	N/A	This application is for a Title V Renewal and not an application for a notice of intent (NOI). The facility does not process, handle, transport, or store "bulk material" as defined in 20.2.23.108.A NMAC and is not located within areas subjected to 40 CFR 51.930.
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	Lordsburg Compressor Station does not have existing gas burning equipment with a heat input of greater than 1,000,000 million British Thermal Units per year per unit
20.2.34 NMAC	Oil Burning Equipment: NO_2	No	N/A	Lordsburg Compressor Station does not have oil burning equipment with a heat input of greater than 1,000,000 million British Thermal Units per year per unit.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No	N/A	This facility is not a “natural gas processing plant” as defined in the regulation.
20.2.37 and 20.2.36 NMAC	Petroleum Processing Facilities and Petroleum Refineries	N/A	N/A	Lordsburg Compressor Station is not a “petroleum processing facility” as defined in the regulation. **These regulations were repealed by the Environmental Improvement Board. If you had equipment subject to 20.2.37 NMAC before the repeal, your combustion emission sources are now subject to 20.2.61 NMAC.**
20.2.38 NMAC	Hydrocarbon Storage Facility	No	N/A	This regulation applies to storage facilities which are operated in conjunction with a petroleum production or petroleum processing facility. The Lordsburg Compressor Station is not a petroleum production or processing facility, therefore this regulation does not apply.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	This facility is not a sulfur recovery plant as defined in the regulation.
20.2.50 NMAC	Oil and Gas Sector – Ozone Precursor Pollutants	No	N/A	This regulation establishes emission standards for volatile organic compounds (VOC) and oxides of nitrogen (NOx) for oil and gas production, processing, compression, and transmission sources. 20.2.50 NMAC subparts: Check the box for the subparts that are applicable: ☒ 113 – Engines and Turbines ☒ 114 – Compressor Seals ☐ 115 – Control Devices and Closed Vent Systems ☒ 116 – Equipment Leaks and Fugitive Emissions ☐ 117 – Natural Gas Well Liquid Unloading ☐ 118 – Glycol Dehydrators ☐ 119 – Heaters ☐ 120 – Hydrocarbon Liquid Transfers ☐ 121 – Pig Launching and Receiving ☒ 122 – Pneumatic Controllers and Pumps ☐ 123 – Storage Vessels ☐ 124 – Well Workovers ☐ 125 – Small Business Facilities ☐ 126 – Produced Water Management Unit ☐ 127 – Flowback Vessels and Preproduction Operations

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
				113 – EPNG will comply with the requirements of this subpart. 114 – EPNG operates reciprocating compressors which are located at a transmission compressor station and therefore is subject to this requirement. 115 – N/A- The control devices and closed vent systems at this facility are not used to comply with the requirements of this rule; therefore, they are not subject to the requirements of this rule. 116 -- EPNG will comply with the applicable requirements of this rule. 118 – N/A- There are no glycol dehydrator sat this facility 119 – N/A-There are no heaters sat this facility, they are not subject to this rule 120- N/A- There is no truck loadout at this site. 122 – Any natural-gas driven controller or pumps at the facility will comply with the applicable requirements of this rule. 123 – N/A - the requirements of this rule to do not apply. The only tanks onsite are for insignificant for lube oil and used water.
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	A-01, A-02, B-01, C-01, AUX C-01	The facility's turbines (units A-01, A-02, B-01, and C-01) and emergency generator engine (unit AUX C-01) are "stationary combustion equipment", and comply with this regulation by the sole use of pipeline quality natural gas as fuel.
20.2.70 NMAC	Operating Permits	Yes	Facility	Lordsburg Compressor Station is a major source for the following criteria pollutants: NOx and CO.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	Because the facility is subject to 20.2.70 NMAC and its permit includes numerical ton per year emission limits, the facility is subject to 20.2.71 NMAC.
20.2.72 NMAC	Construction Permits	Yes	Facility	Lordsburg Compressor Station is subject to 20.2.72 NMAC and complies with NSR Permit number: PSD-2810-M5.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	If subject, this would normally apply to the entire facility. **A Notice of Intent application 20.2.73.200 NMAC** could apply if your facility's PER of any regulated air pollutant, including VOCs and HAPs, is 10 tpy or more or if you have lead emissions of 1 tpy or more. Include both fugitive and stack emissions to determine your PER. You could be required to submit **Emissions Inventory Reporting per** 20.2.73.300 NMAC if your facility is subject to 20.2.73.200, 20.2.72, or emits more than 1 ton of lead or 10 tons of PM10, PM2.5, SOx, NOx CO, or VOCs in any calendar year. All facilities that are a Title V Major Source as defined at 20.2.70.7.R NMAC, are subject to Emissions Inventory Reporting.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	Y	Facility	This facility is PSD major as it is a stationary source not listed in Table 1 of this Part (20.2.74.501 NMAC) and which emits or has the potential to emit two hundred fifty (250) tons per year or more of any regulated pollutant. This application is not subject to PSD as there is no significant emissions increase.
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	This regulation establishes a schedule of operating permit emission fees. The facility is subject to 20.2.72 NMAC and is therefore subject to requirements of this regulation.
20.2.77 NMAC	New Source Performance	Yes	C-01	A turbine at the Lordsburg facility, unit C-01, is subject to 40 CFR 60 Subpart GG, as described below.
20.2.78 NMAC	Emission Standards for HAPS	No	N/A	No N/A This facility is not subject to the requirements of 40 CFR Part 61.

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.79 NMAC	Permits – Nonattainment Areas	No	N/A	The facility is not located in a nonattainment area.
20.2.80 NMAC	Stack Heights	No	N/A	This regulation does not apply as the facility is not equipped with any stacks that exceed Good Engineering Practice (GEP).
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	AUX C-01	The facility is an area source of HAPs and this regulation applies because unit AUX C-01 is subject to 40 CFR 63, Subpart ZZZZ

Example of a Table for Applicable Federal Regulations (Note: This is not an exhaustive list):

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 50	NAAQS	Yes	Facility	National ambient air quality standards (NAAQS) are established as an applicable requirement at 20.2.70.7.E.11 NMAC.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	C-01	Applies because another NSPS, Subpart GG, applies to a unit at the facility.
NSPS 40 CFR60.40a, Subpart Da	Subpart Da, Performance Standards for **Electric Utility Steam Generating Units**	No	N/A	Not applicable as there are no electric utility steam generating units at this facility.
NSPS 40 CFR60.40b Subpart Db	**Electric Utility Steam Generating Units**	No	N/A	Not applicable as there are no Industrial-Commercial-Institutional steam generating units at this facility.
40 CFR 60.40c, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	No	N/A	Not applicable as there are no Industrial-Commercial-Institutional steam generating units at this facility.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for **Storage Vessels for Petroleum Liquids** for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and **Prior** to July 23, 1984	No	N/A	This regulation establishes performance standards for storage vessels for petroleum liquids for which construction, reconstruction, or modification commenced after May 18, 1978, and prior to July 23, 1984. There are no petroleum liquid storage vessels located at the facility which are an affected facility under this subpart. Therefore, this regulation does not apply.
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for **Volatile Organic Liquid Storage Vessels** (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced **After** July 23, 1984	No	N/A	This regulation establishes performance standards for storage vessels with a capacity greater than or equal to 75 cubic meters (m 3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984. There no storage vessels which are affected under this subpart, therefore, this regulation is not applicable §60.110b(b)].
NSPS 40 CFR 60.330 Subpart GG	**Stationary Gas Turbines**	Yes	C-01	Unit C-01 (the Solar Mars 100S turbine) has a heat input capacity which is greater than the 10 MMBtu/hr threshold, and was installed after the October 3, 1977 applicability date.
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from **Onshore Gas Plants**	No	N/A	Not applicable as the facility is not a natural gas processing plant.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for **Onshore Natural Gas Processing**: SO_2 Emissions	No	N/A	Lordsburg Compressor Station is not a natural gas processing facility.
NSPS 40 CFR Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution for which	No	N/A	The rule applies to "affected" facilities that are constructed, modified, or reconstructed after Aug 23, 2011 (40 CFR 60.5365): gas wells, including fractured and hydraulically refractured wells, centrifugal compressors, reciprocating compressors, pneumatic controllers, certain equipment at natural gas processing plants, sweetening units at natural gas processing plants, and storage vessels. The facility was constructed prior to August 23, 2011 and does not have any units subject to this regulation.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	construction, modification or reconstruction commenced after August 23, 2011 and before September 18, 2015			
NSPS 40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced **After** September 18, 2015	No	N/A	The facility was constructed prior to September 18, 2015 and does not have any units subject to this regulation.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	The facility does not have any compression ignition internal combustion engines. This regulation does not apply.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	No	N/A	The only RICE at Lordsburg Compressor Station, unit AUX C-01, was constructed before the June 12, 2006 applicability date of this regulation. This regulation does not apply.
NSPS 40 CFR 60 Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units	No	N/A	The facility does not have any steam generating units and is therefore not subject to this regulation.
NSPS 40 CFR 60 Subpart UUUU	Emissions Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units	No	N/A	The facility does not have any electric utility generating units and is therefore not subject to this regulation.
NSPS 40 CFR 60, Subparts WWW, XXX, Cc, and Cf	Standards of performance for Municipal Solid Waste (MSW) Landfills	No	N/A	The facility is not a municipal solid waste landfill and is therefore not subject to this regulation.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NESHAP 40 CFR 61 Subpart A	General Provisions	No	N/A	Although the standard does not apply to this facility under routine operating conditions, in the case of asbestos demolition, Subpart M would apply.
NESHAP 40 CFR 61 Subpart E	National Emission Standards for **Mercury**	No	N/A	Lordsburg Compressor Station does not process mercury.
NESHAP 40 CFR 61 Subpart V	National Emission Standards for **Equipment Leaks** (Fugitive Emission Sources)	No	N/A	Not applicable as the facility equipment does not operate in VHAP service [VHAP service means a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight of VHAP].
MACT 40 CFR 63, Subpart A	General Provisions	Yes	AUX C-01	Applies because MACT ZZZZ applies.
MACT 40 CFR 63.760 Subpart HH	**Oil and Natural Gas Production Facilities**	No	N/A	This regulation establishes national emission standards for hazardous air pollutants from oil and natural gas production facilities. This facility is not an Oil or Natural Gas Production Facility, as defined by this regulation therefore it is not subject to this regulation.
MACT 40 CFR 63 Subpart HHH	Natural Gas Transmission and Storage Facilities	No	N/A	Lordsburg Compressor Station is a natural gas transmission facility. However, this facility is not a major source of HAPS, nor does it contain an affected unit. As stated in 63.1270(c), a facility that does not contain an affected source is not subject to the requirements of this subpart.
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	No	N/A	The facility does not have any commercial, institutional boilers or process heaters and is therefore not subject to this regulation.
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric Utility Steam Generating Unit	No	N/A	The facility does not have a coal or oil fired electric utility steam generating unit. The facility is not subject to this regulation.
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (**RICE MACT**)	Yes	Aux C-01	Unit AUX C-01, the backup generator engine, is an existing (construction commenced prior to June 12, 2006) emergency stationary RICE located at an area source of HAPs. The engine must comply with the emission limitations in 40 CFR 63.6603 and Table 2d to the subpart.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 64	**Compliance Assurance Monitoring**	No	N/A	Although NOx emissions for units A-01, A-02, and B-01 are major for each unit, the turbines do not meet the criteria of this part; specifically, they do not utilize a control device to achieve compliance with applicable emission limitations.
40 CFR 68	**Chemical Accident Prevention**	No	N/A	Facility is regulated under DOT Office of Pipeline Safety Regulations (49 CFR 192, 193 and 195); therefore, it is not subject to this regulation. This regulation arises from section 112(r) of the Clean Air Act and establishes thresholds based on inventoried quantities of specific substances in process. As established at 40 CFR 68.3, the term "stationary source" does not apply to the transportation of any regulated substance or any other extremely hazardous substance under the provisions of this part, provided that such transportation is regulated under 49 CFR parts 192, 193, or 195 (DOT Office of Pipeline Safety Regulations).
Title IV – Acid Rain 40 CFR 72	**Acid Rain**	No	N/A	Not applicable as the facility is not an acid rain source.
Title IV – Acid Rain 40 CFR 73	**Sulfur Dioxide** Allowance Emissions	No	N/A	Not applicable as the facility is not an acid rain source.
Title IV-Acid Rain 40 CFR 75	**Continuous Emissions Monitoring**	No	N/A	The facility does not generate commercial electric power or electric power for sale and is therefore not subject to this regulation.
Title IV – Acid Rain 40 CFR 76	**Acid Rain** Nitrogen Oxides **Emission Reduction Program**	No	N/A	Not applicable as the facility is not an acid rain source.
Title VI – 40 CFR 82	Protection of **Stratospheric Ozone**	Yes	Facility	EPNG owns appliances containing CFCs and is therefore subject to this requirement. However, this requirement imposes no obligations on the facility beyond those imposed on any individual or corporate owner of such appliances, and is mentioned here only in the interest of being thorough. EPNG uses only certified technicians for the maintenance, service, repair and disposal of appliances and maintains the appropriate records for this requirement.

Section 14

Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

☑ **Title V Sources** (20.2.70 NMAC)**:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies** defining the measures to be taken to mitigate source emissions during startups, shutdowns, and emergencies as required by 20.2.70.300.D.5(f) and (g) NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

☐ **NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Source Emissions During Malfunction, Startup, or Shutdown** defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown as required by 20.2.72.203.A.5 NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

☑ **Title V** (20.2.70 NMAC)**, NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has established and implemented a Plan to Minimize Emissions During Routine or Predictable Startup, Shutdown, and Scheduled Maintenance through work practice standards and good air pollution control practices as required by 20.2.7.14.A and B NMAC. This plan shall be kept on site or at the nearest field office to be made available to the Department upon request. This plan should not be submitted with this application.

Lordsburg Compressor Station keeps an operational plan to mitigate emissions from startup, shutdown, and maintenance.

Section 15

Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

Alternative Operating Scenarios: Provide all information required by the department to define alternative operating scenarios. This includes process, material and product changes; facility emissions information; air pollution control equipment requirements; any applicable requirements; monitoring, recordkeeping, and reporting requirements; and compliance certification requirements. Please ensure applicable Tables in this application are clearly marked to show alternative operating scenario.

Construction Scenarios: When a permit is modified authorizing new construction to an existing facility, NMED includes a condition to clearly address which permit condition(s) (from the previous permit and the new permit) govern during the interval between the date of issuance of the modification permit and the completion of construction of the modification(s). There are many possible variables that need to be addressed such as: Is simultaneous operation of the old and new units permitted and, if so for example, for how long and under what restraints? In general, these types of requirements will be addressed in Section A100 of the permit, but additional requirements may be added elsewhere. Look in A100 of our NSR and/or TV permit template for sample language dealing with these requirements. Find these permit templates at: www.env.nm.gov/air-quality/permitting-section-procedures-and-guidance/. Compliance with standards must be maintained during construction, which should not usually be a problem unless simultaneous operation of old and new equipment is requested.

In this section, under the bolded title “Construction Scenarios”, specify any information necessary to write these conditions, such as: conservative-realistic estimated time for completion of construction of the various units, whether simultaneous operation of old and new units is being requested (and, if so, modeled), whether the old units will be removed or decommissioned, any PSD ramifications, any temporary limits requested during phased construction, whether any increase in emissions is being requested as SSM emissions or will instead be handled as a separate Construction Scenario (with corresponding emission limits and conditions, etc.

This facility does not have alternative operating scenarios.

Section 16

Air Dispersion Modeling

1) Minor Source Construction (20.2.72 NMAC) and Prevention of Significant Deterioration (PSD) (20.2.74 NMAC) ambient impact analysis (modeling): Provide an ambient impact analysis as required at 20.2.72.203.A(4) and/or 20.2.74.303 NMAC and as outlined in the Air Quality Bureau's Dispersion Modeling Guidelines found on the Planning Section's modeling website. If air dispersion modeling has been waived for one or more pollutants, attach the AQB Modeling Section modeling waiver approval documentation.
2) SSM Modeling: Applicants must conduct dispersion modeling for the total short term emissions during routine or predictable startup, shutdown, or maintenance (SSM) using realistic worst case scenarios following guidance from the Air Quality Bureau's dispersion modeling section. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions modeling requirements.
3) Title V (20.2.70 NMAC) ambient impact analysis: Title V applications must specify the construction permit and/or Title V Permit number(s) for which air quality dispersion modeling was last approved. Facilities that have only a Title V permit, such as landfills and air curtain incinerators, are subject to the same modeling required for preconstruction permits required by 20.2.72 and 20.2.74 NMAC.

What is the purpose of this application?	Enter an X for each purpose that applies
New PSD major source or PSD major modification (20.2.74 NMAC). See #1 above.	
New Minor Source or significant permit revision under 20.2.72 NMAC (20.2.72.219.D NMAC). See #1 above. **Note:** Neither modeling nor a modeling waiver is required for VOC emissions.	
Reporting existing pollutants that were not previously reported.	
Reporting existing pollutants where the ambient impact is being addressed for the first time.	
Title V application (new, renewal, significant, or minor modification. 20.2.70 NMAC). See #3 above.	X
Relocation (20.2.72.202.B.4 or 72.202.D.3.c NMAC)	
Minor Source Technical Permit Revision 20.2.72.219.B.1.d.vi NMAC for like-kind unit replacements.	
Other: i.e. SSM modeling. See #2 above.	
This application does not require modeling since this is a No Permit Required (NPR) application.	
This application does not require modeling since this is a Notice of Intent (NOI) application (20.2.73 NMAC).	
This application does not require modeling according to 20.2.70.7.E(11), 20.2.72.203.A(4), 20.2.74.303, 20.2.79.109.D NMAC and in accordance with the Air Quality Bureau's Modeling Guidelines.	

Check each box that applies:

☐ See attached, approved modeling **waiver for all** pollutants from the facility.
☐ See attached, approved modeling **waiver for some** pollutants from the facility.
☐ Attached in Universal Application Form 4 (UA4) is a **modeling report for all** pollutants from the facility.
☐ Attached in UA4 is a **modeling report for some** pollutants from the facility.
☑ No modeling is required.

Section 17

Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

Compliance Test History Table

Unit No.	Test Description	Test Date
A-01	Tested in accordance with EPA test methods for NOx and CO as required by Title V permit P131R3M1.	11/8/2022
A-02	Tested in accordance with EPA test methods for NOx and CO as required by Title V permit P131R3M1.	11/8/2022
B-01	Tested in accordance with EPA test methods for NOx and CO as required by Title V permit P131R3M1.	11/1/2021
C-01	Tested in accordance with EPA test methods for NOx and CO as required by Title V permit P131R3M1.	9/16/2020

Section 19

Requirements for Title V Program

Who Must Use this Attachment:

* Any major source as defined in 20.2.70 NMAC.
* Any source, including an area source, subject to a standard or other requirement promulgated under Section 111 - Standards of Performance for New Stationary Sources, or Section 112 Hazardous Air Pollutants, of the 1990 federal Clean Air Act ("federal Act"). Non-major sources subject to Sections 111 or 112 of the federal Act are exempt from the obligation to obtain an 20.2.70 NMAC operating permit until such time that the EPA Administrator completes rulemakings that require such sources to obtain operating permits. In addition, sources that would be required to obtain an operating permit solely because they are subject to regulations or requirements under Section 112(r) of the federal Act are exempt from the requirement to obtain an Operating Permit.
* Any Acid Rain source as defined under title IV of the federal Act. The Acid Rain program has additional forms. See www.env.nm.gov/air-quality/air-quality-title-v-operating-permits-guidance-page/. Sources that are subject to both the Title V and Acid Rain regulations are encouraged to submit both applications simultaneously.
* Any source in a source category designated by the EPA Administrator ("Administrator"), in whole or in part, by regulation, after notice and comment.

Lordsburg Compressor Station is a Title V source as defined in 20.2.70 NMAC

19.1 - 40 CFR 64, Compliance Assurance Monitoring (CAM) (20.2.70.300.D.10.e NMAC)

Any source subject to 40CFR, Part 64 (Compliance Assurance Monitoring) must submit all the information required by section 64.7 with the operating permit application. The applicant must prepare a separate section of the application package for this purpose; if the information is already listed elsewhere in the application package, make reference to that location. Facilities not subject to Part 64 are invited to submit periodic monitoring protocols with the application to help the AQB to comply with 20.2.70 NMAC. Sources subject to 40 CFR Part 64, must submit a statement indicating your source's compliance status with any enhanced monitoring and compliance certification requirements of the federal Act.

Based on information and belief formed after reasonable inquiry, EPNG states that Lordsburg Compressor Station does not meet the applicability requirements of 40 CFR 64.2. Specifically, no sources at the facility are controlled major sources of regulated pollutants, and enhanced monitoring requirements are not applicable at this time. EPNG will submit the necessary statement should the facility or requirements change such that this requirement becomes applicable.

19.2 - Compliance Status (20.2.70.300.D.10.a & 10.b NMAC)

Describe the facility's compliance status with each applicable requirement at the time this permit application is submitted. This statement should include descriptions of or references to all methods used for determining compliance. This statement should include descriptions of monitoring, recordkeeping and reporting requirements and test methods used to determine compliance with all applicable requirements. Refer to Section 2, Tables 2-N and 2-O of the Application Form as necessary. (20.2.70.300.D.11 NMAC) For facilities with existing Title V permits, refer to most recent Compliance Certification for existing requirements. Address new requirements such as CAM, here, including steps being taken to achieve compliance.

Based on information and belief formed after reasonable inquiry, EPNG believes that Lordsburg Compressor Station is in compliance with each requirement applicable to the facility.

19.3 - Continued Compliance (20.2.70.300.D.10.c NMAC)

Provide a statement that your facility will continue to be in compliance with requirements for which it is in compliance at the time of permit application. This statement must also include a commitment to comply with other applicable requirements as they come into effect during the permit term. This compliance must occur in a timely manner or be consistent with such schedule expressly required by the applicable requirement.

As described in Section 19.2 and based on information and belief formed after reasonable inquiry, EPNG states that Lordsburg Compressor Station will continue to be operated in compliance with applicable requirements for which it is in compliance as of the date of submittal of this application.

19.4 - Schedule for Submission of Compliance (20.2.70.300.D.10.d NMAC)

You must provide a proposed schedule for submission to the department of compliance certifications during the permit term. This certification must be submitted annually unless the applicable requirement or the department specifies a more frequent period. A sample form for these certifications will be attached to the permit.

The Annual Compliance Certification Report is due within 30 days of the end of every 12-month reporting period. The 12-month reporting period starts on January 1st of each year.

19.5 - Stratospheric Ozone and Climate Protection

In addition to completing the four (4) questions below, you must submit a statement indicating your source's compliance status with requirements of Title VI, Section 608 (National Recycling and Emissions Reduction Program) and Section 609 (Servicing of Motor Vehicle Air Conditioners).

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1. Does your facility have any air conditioners or refrigeration equipment that uses CFCs, HCFCs or other ozone-depleting substances? ☑ **Yes** ☐ **No**

2. Does any air conditioner(s) or any piece(s) of refrigeration equipment contain a refrigeration charge greater than 50 lbs? ☐ **Yes** ☑ **No**

   (If the answer is yes, describe the type of equipment and how many units are at the facility.)

3. Do your facility personnel maintain, service, repair, or dispose of any motor vehicle air conditioners (MVACs) or appliances ("appliance" and "MVAC" as defined at 82. 152)? ☐ **Yes** ☑ **No**

4. Cite and describe which Title VI requirements are applicable to your facility (i.e. 40 CFR Part 82, Subpart A through G.)

EPNG owns appliances containing CFCs and is therefore subject to this requirement. However, this requirement imposes no obligations on the facility beyond those imposed on any individual or corporate owner of such appliances, and is mentioned here only in the interest of being thorough. EPNG uses only certified technicians for the maintenance, service, repair and disposal of appliances and maintains the appropriate records for this requirement.

19.6 - Compliance Plan and Schedule

Applications for sources, which are not in compliance with all applicable requirements at the time the permit application is submitted to the department, must include a proposed compliance plan as part of the permit application package. This plan shall include the information requested below:

A. Description of Compliance Status: (20.2.70.300.D.11.a NMAC)

A narrative description of your facility's compliance status with respect to all applicable requirements (as defined in 20.2.70 NMAC) at the time this permit application is submitted to the department.

B. Compliance plan: (20.2.70.300.D.11.B NMAC)
A narrative description of the means by which your facility will achieve compliance with applicable requirements with which it is not in compliance at the time you submit your permit application package.

C. Compliance schedule: (20.2.70.300D.11.c NMAC)
A schedule of remedial measures that you plan to take, including an enforceable sequence of actions with milestones, which will lead to compliance with all applicable requirements for your source. This schedule of compliance must be at least as stringent as that contained in any consent decree or administrative order to which your source is subject. The obligations of any consent decree or administrative order are not in any way diminished by the schedule of compliance.

D. Schedule of Certified Progress Reports: (20.2.70.300.D.11.d NMAC)
A proposed schedule for submission to the department of certified progress reports must also be included in the compliance schedule. The proposed schedule must call for these reports to be submitted at least every six (6) months.

E. Acid Rain Sources: (20.2.70.300.D.11.e NMAC)
If your source is an acid rain source as defined by EPA, the following applies to you. For the portion of your acid rain source subject to the acid rain provisions of title IV of the federal Act, the compliance plan must also include any additional requirements under the acid rain provisions of title IV of the federal Act. Some requirements of title IV regarding the schedule and methods the source will use to achieve compliance with the acid rain emissions limitations may supersede the requirements of title V and 20.2.70 NMAC. You will need to consult with the Air Quality Bureau permitting staff concerning how to properly meet this requirement.

NOTE: The Acid Rain program has additional forms. See www.env.nm.gov/air-quality/air-quality-title-v-operating-permits-guidance-page/. Sources that are subject to both the Title V and Acid Rain regulations are **encouraged** to submit both applications **simultaneously**.

Based on information and belief formed after reasonable inquiry and as described in Section 19.2, and with this filing, EPNG states that Lordsburg Compressor Station is in compliance with applicable requirements.

19.7 - 112(r) Risk Management Plan (RMP)

Any major sources subject to section 112(r) of the Clean Air Act must list all substances that cause the source to be subject to section 112(r) in the application. The permittee must state when the RMP was submitted to and approved by EPA.

This facility is not subject to CAA section 112(r) because it does not store a threshold quantity of any substance regulated under that section. Accordingly, a Risk Management Plan (RMP) is not required.

19.8 - Distance to Other States, Bernalillo, Indian Tribes and Pueblos

Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B NMAC)?

(If the answer is yes, state which apply and provide the distances.)

The facility is not within 80 km from other states, local pollution control programs, or Indian tribes/pueblos.

19.9 - Responsible Official

Provide the Responsible Official as defined in 20.2.70.7.AE NMAC:

RO: Philip L. Baca

Title: Operations Director Division 1
Phone: (520) 663-4224
Email: Philip_Baca@kindermorgan.com
Address: 5151 E. Broadway Blvd, Tucson, AZ 85711

ARO: Ted Meinhold
Title: Vice President Operations
Phone: (713) 420-2765
Email: Ted_Meinhold@kindermorgan.com
Address: 1001 Louisiana, Suite 1000, Houston TX 77002

Section 20

Other Relevant Information

Other relevant information. Use this attachment to clarify any part in the application that you think needs explaining. Reference the section, table, column, and/or field. Include any additional text, tables, calculations or clarifying information.

Additionally, the applicant may propose specific permit language for AQB consideration. In the case of a revision to an existing permit, the applicant should provide the old language and the new language in track changes format to highlight the proposed changes. If proposing language for a new facility or language for a new unit, submit the proposed operating condition(s), along with the associated monitoring, recordkeeping, and reporting conditions. In either case, please limit the proposed language to the affected portion of the permit.

No other relevant information is provided.

Section 22: Certification

Company Name: El Paso Natural Gas Company L.L.C.

I, Philip L. Baca, hereby certify that the information and data submitted in this application are true and as accurate as possible, to the best of my knowledge and professional expertise and experience.

Signed this 9th day of February, 2023, upon my oath or affirmation, before a notary of the State of Arizona.

Philip L Baca
*Signature

2/9/23
Date

Philip L. Baca
Printed Name

Operations Director
Title

Scribed and sworn before me on this 9th day of February, 2023.

My authorization as a notary of the State of Arizona expires on the 27th day of December, 2025.

Kelley B. Sims
Notary's Signature

2/9/2023
Date

Kelley B. Sims
Notary's Printed Name

KELLEY B SIMS
Notary Public - Arizona
Pima County
Commission # 618916
My Comm. Expires Dec 27, 2025

*For Title V applications, the signature must be of the Responsible Official as defined in 20.2.70.7.AE NMAC.