NMED AIR QUALITY NSR APPLICATION

DELAWARE G&P, LLC
RED RAIDER COMPRESSOR STATION

Prepared By:

Adam Erenstein – Manager of Consulting Services

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April 2023

Project 233201.0051

Trinity Consultants

Trinity Consultants
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April 14, 2023

Permit Programs Manager
NMED Air Quality Bureau
525 Camino de los Marquez Suite 1
Santa Fe, NM 87505-1816

RE: NSR Application
Delaware G&P, LLC – Red Raider Compressor Station.

Permit Programs Manager:

Delaware G&P, LLC is submitting an NSR application for Red Raider Compressor Station. The facility is located approximately 12.94 miles southeast of Loving, New Mexico. Currently, this facility is permitted under GCP O&G 9897.The facility will have a total production of 150 MMscf of gas per day and includes eight (8) compressor engines, one (1) gunbarrel separator, two (2) condensate storage tanks, one (1) produced water storage tank, one (1) glycol dehydrator, one (1) vapor recovery Unit.

The format and content of this application are consistent with the Bureau's current policy regarding NSR applications; it is a complete application package using the most current application form. Enclosed is a hard copy of the application, including the original certification. Please feel free to contact either myself at (505) 266-6611 or by email at aerenstein@trinityconsultants.com if you have any questions regarding this application. Alternatively, you may contact Lance Green, Environmental Specialist for Delaware G&P, LLC, at (225) 692-6947 or by email at lance.green@enlink.com.

Sincerely,

Adam Erenstein
Manager of Consulting Services

Trinity Project File 233201.0051

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.: 655543 in the amount of $500

☑ 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: **20.2.72.200.A 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.):	Updating Permit/NOI #: GCP O&G 9897
1	Facility Name: Red Raider Compressor Station	Plant primary SIC Code (4 digits): 1311	
		Plant NAIC code (6 digits): 21112	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark):		
2	Plant Operator Company Name: Delaware G&P, LLC	Phone/Fax: (225) 692 - 6947	
a	Plant Operator Address: 1722 Routh Street, Suite 1300, Dallas, TX 75201		
b	Plant Operator's New Mexico Corporate ID or Tax ID:		

3	Plant Owner(s) name(s): Delaware G&P, LLC	Phone/Fax: (225) 692 - 6947
a	Plant Owner(s) Mailing Address(s): 1722 Routh Street, Suite 1300, Dallas, TX 75201	
4	Bill To (Company): Delaware G&P, LLC	Phone/Fax: (225) 692 - 6947
a	Mailing Address: 1722 Routh Street, Suite 1300, Dallas, TX 75201	E-mail: mike.luckett@enlink.com
5	☑ Preparer: Trinity Consultants ☑ Consultant: Adam Erenstein	Phone/Fax: (505) 266 - 6611
a	Mailing Address: aerenstein@trinityconsultants.com	E-mail: mike.luckett@enlink.com
6	Plant Operator Contact: Mike Luckett	Phone/Fax: (432) 221 - 9707
a	Address:303 W Wall Street, Suite 202, Midland, TX 79701	E-mail: mike.luckett@enlink.com
7	Air Permit Contact: Lance Green	Title: Environmental Specialist
a	E-mail: lance.green@enlink.com	Phone/Fax: (225) 692-6947
b	Mailing Address: 1722 Routh Street, Suite 1300, Dallas, TX 75201	
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):
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: P-
7	Has this facility been issued a No Permit Required (NPR)? ☐ Yes ☑ No	If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? ☐ Yes ☑ No	If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? ☐ Yes ☑ No	If yes, the permit No. is:
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☑ Yes ☐ No	If yes, the register No. is: GCP O&G 9897

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:	Daily:	Annually:
b	Proposed	Hourly: 6.25 MMscf/hr	Daily: 150 MMscf/d	Annually: 54,750 MMscf/yr
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:	Daily:	Annually:
b	Proposed	Hourly: 6.25 MMscf/hr	Daily: 150 MMscf/d	Annually: 54,750 MMscf/yr

Section 1-D: Facility Location Information

1	Section: 15	Range: 29E	Township: 25S	County: Eddy	Elevation (ft): 3037
2	UTM Zone: ☐ 12 or ☑ 13			Datum: ☐ NAD 27 ☐ NAD 83 ☑ WGS 84	
a	UTM E (in meters, to nearest 10 meters): 597,279 m			UTM N (in meters, to nearest 10 meters): 3,555,399 m	
b	**AND** Latitude (deg., min., sec.): 32° 7'50.86"N			Longitude (deg., min., sec.): 103°58'7.19"W	
3	Name and zip code of nearest New Mexico town: Loving, NM 88256				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From Loving head south on N 4th St for 1.3 mi toward W Cedar St, turn left onto US Hwy 285 S and continue for 16 mi, turn left onto Whitehorn Rd and continue for 2.4 mi, slight left onto Longhorn Rd, after 1.8 mi turn left onto Pipeline Rd Number 1, after 1.8 mi turn left and continue for 2.2 mi, continue straight at the fork for 1.2 mi and then turn right, continue for 0.7 mi and the facility on the left on the unmarked road after 0.18 mi.				
5	The facility is 13.05 miles southeast of Loving, NM 88256.				
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: Malaga and Eddy 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: Carlsbad Caverns- 44.1 km, Texas- 14.51 km				
9	Name nearest Class I area: Carlsbad Caverns National Park				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 44.1 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: 12,103 m				
12	Method(s) used to delineate the Restricted Area: Fencing, gates, and signage. "**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?				

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: Upon completion of permit					
4	Month and year of anticipated construction completion: Upon completion of permit					
5	Month and year of anticipated startup of new or modified facility: Upon completion of permit					
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: _____ 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): Michael LeBlanc		Phone: (985) 575-8311
a	R.O. Title: SVP Operations	R.O. e-mail: Michael.LeBlanc@EnLink.com	
b	R. O. Address: 5609 Bayou Black Dr, Suite A, Gibson, LA 70356		
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): Tad Stallings		Phone: (432) 684-3870
a	A. R.O. Title: Director Operations	A. R.O. e-mail: Tad.Stallings@Enlink.com	
b	A. R. O. Address: 303 West Wall St, Suite 202, Midland, TX 79701		
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.): Delaware G&P, LLC		
a	Address of Parent Company: 1722 Routh Street, Suite 1300, Dallas, TX 75201		
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.): N/A		
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: Lance Green, (225) 692-6947		

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: Texas – 14.51 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.
ENG-1	Compressor Engine	Waukesha	16V275 Gl	TBD	5000 hp	5000 hp	TBD TBD	CAT-1 ENG-1	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-2	Compressor Engine	Waukesha	16V275 Gl	TBD	5000 hp	5000 hp	TBD TBD	CAT-2 ENG-2	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-3	Compressor Engine	Caterpillar	3612A4	TBD	3750 hp	3750 hp	TBD TBD	CAT-3 ENG-3	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-4	Compressor Engine	Caterpillar	3612A4	TBD	3750 hp	3750 hp	TBD TBD	CAT-4 ENG-4	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-5	Compressor Engine	Caterpillar	3612A4	TBD	3750 hp	3750 hp	TBD TBD	CAT-5 ENG-5	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-6	Compressor Engine	Caterpillar	3612A4	TBD	3750 hp	3750 hp	TBD TBD	CAT-6 ENG-6	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-7	Compressor Engine	Caterpillar	3612A4	TBD	3750 hp	3750 hp	TBD TBD	CAT-7 ENG-7	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-8	Compressor Engine	Caterpillar	3612A4	TBD	3750 hp	3750 hp	TBD TBD	CAT-8 ENG-8	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
DEHY-1	TEG Glycol Dehydrator	TBD	TBD	TBD	150 MMSCFD	150 MMSCFD	TBD TBD	BTEX To Inlet	31000301	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
RBL-1	Glycol Reboiler	TBD	TBD	TBD	2 MMBtu/hr	2 MMBtu/hr	TBD TBD	N/A RBL-1	31000228	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
TK-407	Gunbarrel	TBD	TBD	TBD	750 bbl	750 bbl	TBD 12/1/2023	ECD-1 ECD-1	31000503	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
TK-406A	Condensate Tank	TBD	TBD	TBD	1000 bbl	1000 bbl	TBD 12/1/2023	ECD-1 ECD-1	40400311	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A

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.
TK-406B	Condensate Tank	TBD	TBD	TBD	1000 bbl	1000 bbl	TBD 12/1/2023	ECD-1 ECD-1	40400311	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
TK-406C	Produced Water Tank	TBD	TBD	TBD	1000 bbl	1000 bbl	TBD 12/1/2023	ECD-1 ECD-1	40400315	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
ECD-1	Enclosed Combustion Unit	TBD	TBD	TBD	57.6 MSCF/d	57.6 MSCF/d	TBD TBD	N/A ECD-1	30600903	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
LOAD-1	Condensate and Produced Water Loading	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	40600137	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
FUG	Fugitive Emissions	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	31088811	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
SSM/M	Start-up, Shutdown Maintenance & Malfunction	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	31088811	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A

[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. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
TK-408	Methanol Tank	TBD	TBD	400	20.2.72.202.B.5 NMAC	TBD	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			TBD	bbl		TBD	
HAUL	Haul Road	N/A	N/A	N/A	20.2.72.202.B.5 NMAC	N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	N/A		N/A	
							☐ 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
CAT-1	Oxidation Catalyst	TBD	CO, HCHO, VOC	ENG-1	CO = 75.6% VOC = 37.0% HCHO = 91.8%	Catalyst Spec Sheet
CAT-2	Oxidation Catalyst	TBD	CO, HCHO, VOC	ENG-2		Catalyst Spec Sheet
CAT-3	Oxidation Catalyst	TBD	CO, HCHO, VOC	ENG-3	CO = 81.0% VOC = 43.1% HCHO = 87.9%	Catalyst Spec Sheet
CAT-4	Oxidation Catalyst	TBD	CO, HCHO, VOC	ENG-4		Catalyst Spec Sheet
CAT-5	Oxidation Catalyst	TBD	CO, HCHO, VOC	ENG-5		Catalyst Spec Sheet
CAT-6	Oxidation Catalyst	TBD	CO, HCHO, VOC	ENG-6		Catalyst Spec Sheet
CAT-7	Oxidation Catalyst	TBD	CO, HCHO, VOC	ENG-7		Catalyst Spec Sheet
CAT-8	Oxidation Catalyst	TBD	CO, HCHO, VOC	ENG-8		Catalyst Spec Sheet
ECD-1	Vapor Combustor	TBD	VOC, HAP	TK-406A through TK-407, Condensate and Produced Water Loading	95%	Engineering Estimate
BTEX Condenser	BTEX Condenser Unit for DEHY-1	TBD	VOC, HAP	DEHY-1 Still Vent	98%	Manufacturer Specs
VRU-1	Vapor Recovery Unit	TBD	VOC, HAP	TK-406A through TK-407, Condensate and Produced Water Loading	95%	Engineering Estimate

[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
ENG-1	3.31	14.48	26.24	114.91	11.24	49.25	0.19	0.85	0.35	1.51	0.35	1.51	0.35	1.51	-	-	-	-
ENG-2	3.31	14.48	26.24	114.91	11.24	49.25	0.19	0.85	0.35	1.51	0.35	1.51	0.35	1.51	-	-	-	-
ENG-3	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
ENG-4	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
ENG-5	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
ENG-6	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
ENG-7	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
ENG-8	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
RBL-1	0.20	0.86	0.16	0.72	0.01	0.05	0.01	0.05	0.01	0.07	0.01	0.07	0.01	0.07	-	-	-	-
TK-406A	-	-	-	-	*	30.55	-	-	-	-	-	-	-	-	-	-	-	-
TK-406B	-	-	-	-	*	30.55	-	-	-	-	-	-	-	-	-	-	-	-
TK-406C	-	-	-	-	*	0.08	-	-	-	-	-	-	-	-	-	-	-	-
TK-407	-	-	-	-	*	29.18	-	-	-	-	-	-	-	-	-	-	-	-
DEHY-1	-	-	-	-	337.03	1476.18	-	-	-	-	-	-	-	-	-	-	-	-
ECD-1	0.00	0.02	0.01	0.04	-	-	0.0002	0.0008	-	-	-	-	-	-	-	-	-	-
LOAD-1	-	-	-	-	1.20	5.26	-	-	-	-	-	-	-	-	-	-	-	-
FUG	-	-	-	-	2.29	10.02	-	-	-	-	-	-	-	-	-	-	-	-
Totals	21.70	95.03	203.94	893.24	419.07	1925.86	1.26	5.50	2.23	9.78	2.23	9.78	2.23	9.78	0.00	0.00	0.00	0.00

[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
ENG-1	3.31	14.48	6.39	28.00	8.01	35.06	0.19	0.85	0.35	1.51	0.35	1.51	0.35	1.51	-	-	-	-
ENG-2	3.31	14.48	6.39	28.00	8.01	35.06	0.19	0.85	0.35	1.51	0.35	1.51	0.35	1.51	-	-	-	-
ENG-3	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
ENG-4	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
ENG-5	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
ENG-6	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
ENG-7	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
ENG-8	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	0.25	1.12	-	-	-	-
RBL-1	0.20	0.86	0.16	0.72	0.01	0.05	0.01	0.05	0.01	0.07	0.01	0.07	0.01	0.07	-	-	-	-
TK-406A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-406B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-406C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-407	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEHY-1	-	-	-	-	0.63	2.76	-	-	-	-	-	-	-	-	-	-	-	-
ECD-1	0.10	0.45	0.20	0.89	0.05	0.24	0.0002	0.001	-	-	-	-	-	-	-	-	-	-
LOAD-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FUG	-	-	-	-	2.29	10.02	-	-	-	-	-	-	-	-	-	-	-	-
Totals	21.79	95.45	41.92	183.63	50.89	222.89	1.26	5.50	2.23	9.78	2.23	9.78	2.23	9.78	-	-	-	-

[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		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
SSM/M	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-
Totals	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-

[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).

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
N/A																	
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)			
ENG-1	ENG-1	Vertical	No	35	864	432.26	-	-	88.06	2.50
ENG-2	ENG-2	Vertical	No	35	864	432.26	-	-	88.06	2.50
ENG-3	ENG-3	Vertical	No	28	820	399.14	-	-	127.05	2.00
ENG-4	ENG-4	Vertical	No	28	820	399.14	-	-	127.05	2.00
ENG-5	ENG-5	Vertical	No	28	820	399.14	-	-	127.05	2.00
ENG-6	ENG-6	Vertical	No	28	820	399.14	-	-	127.05	2.00
ENG-7	ENG-7	Vertical	No	28	820	399.14	-	-	127.05	2.00
ENG-8	ENG-8	Vertical	No	28	820	399.14	-	-	127.05	2.00
RBL-1	RBL-1	Vertical	No	9.2	1400	13.37	-	-	26.60	0.80
ECD-1	ECD-1	Vertical	No	13	1200	28.97	-	-	1.48	5.00

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		Formaldehyde ☑ HAP or ☐ TAP		Acetaldehyde ☑ HAP or ☐ TAP		Acrolein ☑ 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
ENG-1	ENG-1	0.76	3.32	0.33	1.45	0.29	1.27	0.18	0.78										
ENG-2	ENG-2	0.76	3.32	0.33	1.45	0.29	1.27	0.18	0.78										
ENG-3	ENG-3	0.56	2.46	0.19	0.83	0.21	0.93	0.13	0.57										
ENG-4	ENG-4	0.56	2.46	0.19	0.83	0.21	0.93	0.13	0.57										
ENG-5	ENG-5	0.56	2.46	0.19	0.83	0.21	0.93	0.13	0.57										
ENG-6	ENG-6	0.56	2.46	0.19	0.83	0.21	0.93	0.13	0.57										
ENG-7	ENG-7	0.56	2.46	0.19	0.83	0.21	0.93	0.13	0.57										
ENG-8	ENG-8	0.56	2.46	0.19	0.83	0.21	0.93	0.13	0.57										
RBL-1	RBL-1	0.004	0.02	0.000	0.001	-	-	-	-										
TK-406A	TK-406A	-	-	-	-	-	-	-	-										
TK-406B	TK-406B	-	-	-	-	-	-	-	-										
TK-406C	TK-406C	-	-	-	-	-	-	-	-										
TK-407	TK-407	-	-	-	-	-	-	-	-										
DEHY-1	DEHY-1	0.10	0.44	-	-	-	-	-	-										
ECD-1	ECD-1	0.004	0.02	-	-	-	-	-	-										
LOAD-1	LOAD-1	-	-	-	-	-	-	-	-										
FUG	FUG	0.19	0.82	-	-	-	-	-	-										
SSM/M	SSM/M	*	0.38	-	-	-	-	-	-										
Totals:		5.18	23.07	1.80	7.89	1.86	8.13	1.14	5.00										

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
ENG-1	Field Gas	Process Gas	1020 Btu/scf	33872.55 scf/hr	296.72 MMscf/yr	2 gr S/100 scf	N/A
ENG-2	Field Gas	Process Gas	1020 Btu/scf	33872.55 scf/hr	296.72 MMscf/yr	2 gr S/100 scf	N/A
ENG-3	Field Gas	Process Gas	1020 Btu/scf	25000.00 scf/hr	219.00 MMscf/yr	2 gr S/100 scf	N/A
ENG-4	Field Gas	Process Gas	1020 Btu/scf	25000.00 scf/hr	219.00 MMscf/yr	2 gr S/100 scf	N/A
ENG-5	Field Gas	Process Gas	1020 Btu/scf	25000.00 scf/hr	219.00 MMscf/yr	2 gr S/100 scf	N/A
ENG-6	Field Gas	Process Gas	1020 Btu/scf	25000.00 scf/hr	219.00 MMscf/yr	2 gr S/100 scf	N/A
ENG-7	Field Gas	Process Gas	1020 Btu/scf	25000.00 scf/hr	219.00 MMscf/yr	2 gr S/100 scf	N/A
ENG-8	Field Gas	Process Gas	1020 Btu/scf	25000.00 scf/hr	219.00 MMscf/yr	2 gr S/100 scf	N/A
RBL-1	Field Gas	Process Gas	1020 Btu/scf	1960.78 scf/hr	17.18 MMscf/yr	2 gr S/100 scf	N/A
ECD-1	Field Gas	Process Gas	1020 Btu/scf	30.00 scf/hr	0.26 MMscf/yr	2 gr S/100 scf	N/A

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)
TK-406A	40400312	Condensate	Mixed Hydrocarbons	5.75	46.83	47.6	34.8179	75.8	34.8179
TK-406B	40400312	Condensate	Mixed Hydrocarbons	5.75	46.83	47.6	34.8179	75.8	34.8179
TK-406C	40400315	Produced Water	Water and Mixed Hydrocarbons	8.32	31.27	47.6	36.3941	75.8	36.3941

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			
TK-406A	TBD	Condensate	N/A	VFR	1,000	159	4.57	4.57	Dark Green	Dark Green	Good	1,131,641	26.94
TK-406B	TBD	Condensate	N/A	VFR	1,000	159	4.57	4.57	Dark Green	Dark Green	Good	1,131,641	26.94
TK-406C	TBD	Produced Water	N/A	VFR	1,000	159	3.66	3.05	Dark Green	Dark Green	Good	737,202	17.55
TK-407	TBD	Mixed Hydrocarbons	N/A	VFR	750	119	3.66	5.33	Dark Green	Dark Green	Good	3,068,102	97.40

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)**
Field Gas	Mixed Hydrocanbons	Gas	150 MMscf/d	Condensate	Mixed Hydrocanbons	Liquid	148 bbl/day
				Prodcued Water	Water and Mixed Hydrocanbons	Liquid	48 bbl/day
				Sales Gas	Mixed Hydrocanbons	Gas	150 MMscf/d

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 CEM Equipment at this facility									

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 Equipment at this facility								

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**								
ENG-1	**mass GHG**	17702.03	0.033	0.33	-	-							17702.40	
	CO_2e	17702.03	9.94	8.34	-	-								17720.32
ENG-2	**mass GHG**	17702.03	0.033	0.33	-	-							17702.40	
	CO_2e	17702.03	9.94	8.34	-	-								17720.32
ENG-3	**mass GHG**	13065.18	0.025	0.25	-	-							13065.45	
	CO_2e	13065.18	7.34	6.16	-	-								13078.67
ENG-4	**mass GHG**	13065.18	0.025	0.25	-	-							13065.45	
	CO_2e	13065.18	7.34	6.16	-	-								13078.67
ENG-5	**mass GHG**	13065.18	0.025	0.25	-	-							13065.45	
	CO_2e	13065.18	7.34	6.16	-	-								13078.67
ENG-6	**mass GHG**	13065.18	0.02	0.25	-	-							13065.45	
	CO_2e	13065.18	7.34	6.16	-	-								13078.67
ENG-7	**mass GHG**	13065.18	0.02	0.25	-	-							13065.45	
	CO_2e	13065.18	7.34	6.16	-	-								13078.67
ENG-8	**mass GHG**	13065.18	0.02	0.25	-	-							13065.45	
	CO_2e	13065.18	7.34	6.16	-	-								13078.67
RBL-1	**mass GHG**	1024.72	0.00	0.02	-	-							1024.74	
	CO_2e	1024.72	0.58	0.48	-	-								1025.78
TK-406A	**mass GHG**	-	-	-	-	-								
	CO_2e	-	-	-	-	-								
TK-406B	**mass GHG**	-	-	-	-	-								
	CO_2e	-	-	-	-	-								
TK-406C	**mass GHG**	-	-	-	-	-								
	CO_2e	-	-	-	-	-								
TK-407	**mass GHG**	-	-	-	-	-								
	CO_2e	-	-	-	-	-								
DEHY-1	**mass GHG**	-	-	-	-	-								
	CO_2e	-	-	-	-	-								
ECD-1	**mass GHG**	361.62	0.00068	0.0068	-	-							361.63	
	CO2e	361.62	0.20	0.17	-	-								362.00
LOAD-1	**mass GHG**	-	-	-	-	-								
	CO_2e	-	-	-	-	-								
FUG	**mass GHG**	-	-	-	-	-								
	CO2e	-	-	-	-	-								
SSM/M	**mass GHG**	-	-	-	-	-								
	CO_2e	-	-	-	-	-								
Total	**mass GHG**	115181.47	0.22	2.17	-	-							115183.86	
	CO_2e	115181.47	64.69	54.27	-	-								115300.43

[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.

Delaware G&P, LLC is submitting this application for an initial NSR permit pursuant to 20.2.72. This facility is located in Eddy County and currently is permitted under GCP O&G 9897. With this application, Delaware G&P, LLC seeks to increase the number of compressors at the facility.

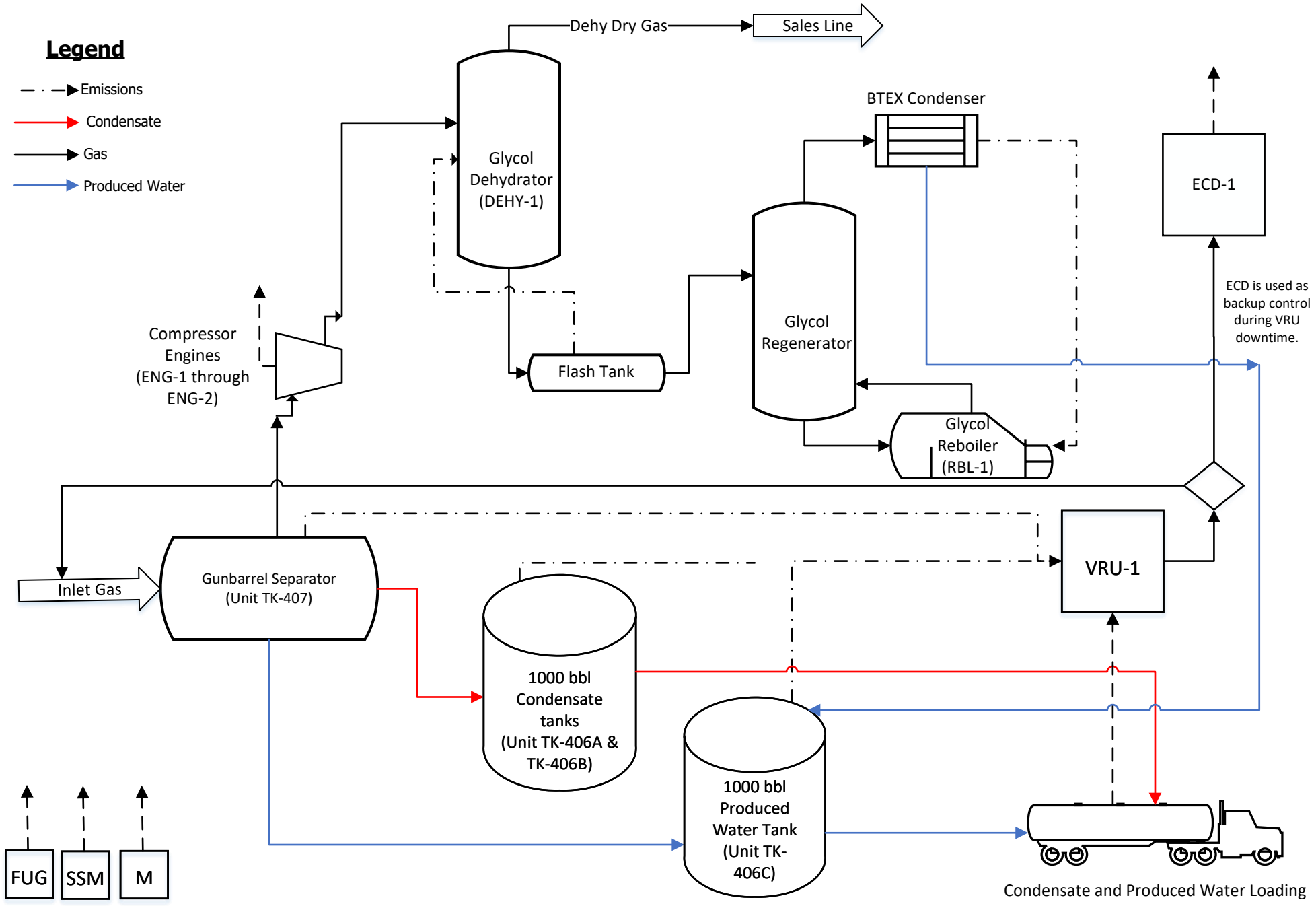
This facility is a compressor station. Delaware G&P, LLC proposes to add 6 engines to the facility. The equipment to be permitted with this application will consist of eight natural gas-fueled generators, one reboiler, one TEG dehydrator, one 750 bbl gunbarrel tank, two 1000 bbl condensate tanks, one 1000 bbl produced water tank, one enclosed combustion device, and one vapor recovery unit.

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 diagram has been included in this section.



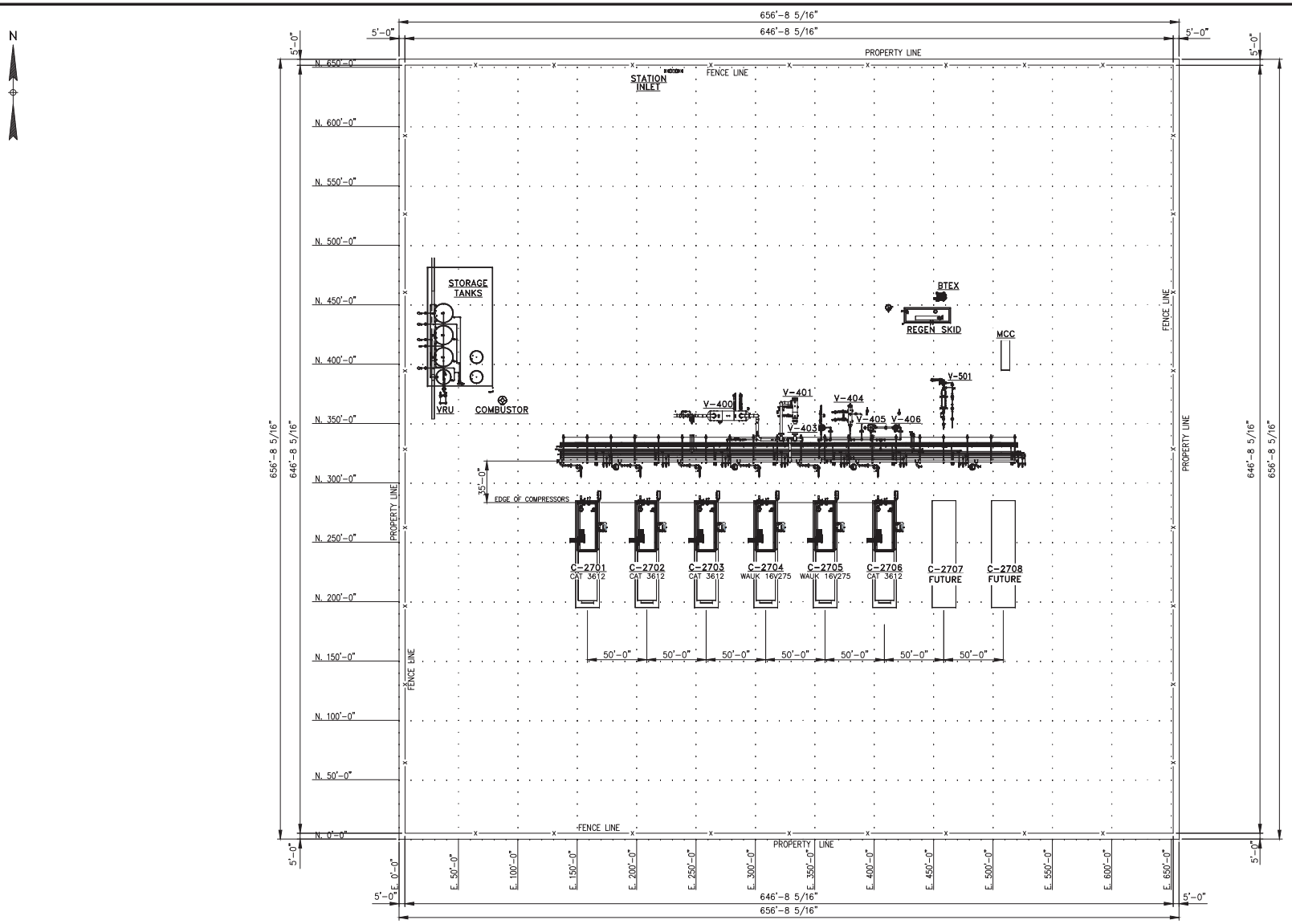
Delaware G&P, LLC – Red Raider Compressor Station – Process Flow Diagram

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 has been included in this section.



NOTES:
1. ALL DIMENSIONS TO BE VERIFIED PRIOR TO INSTALLATION
2. ALL UNDERGROUND PIPING TO BE FIELD VERIFIED PRIOR TO TRENCHING
3. NEOPRENE PADS TO BE INSTALLED BETWEEN ALL PIPING AND SUPPORTS
4. ALL UNDERGROUND PIPING TO HAVE 3'-0" OF COVER UNLESS NOTED OTHERWISE

REFERENCE DRAWINGS		REVISIONS				
DWG. NO.	TITLE	NO.	DATE	DESCRIPTION	DRN	APD
		A	3/15/23	FOR REVIEW	RAD	EB

DRAWING RECORD	
DRAWN: RAD	DATE: 3/15/2023
CHECKED:	DATE:
APPROVED: EB	DATE: 3/15/2023
AFE: 30013838	
SCALE: 1"=40'-0"	

ENLINK MIDSTREAM

TITLE: RED RAIDER COMPRESSOR STATION PLOT PLAN

NEW MEXICO

DWG. NO. D-13838-PL-100 REV. A

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.

Waukesha 16V275GL Engines (Unit IDs: ENG-1 and ENG-2)
NO_X, CO, and VOC emission rates were calculated using manufacturer specifications. SO_2 emissions are based on a conservative fuel sulfur content estimated of 2 gr S/100 scf and 100% conversion of elemental sulfur to SO_2. Particulate ($PM_{2.5}$, PM_{10}, and PM) and HAP emissions were calculated using AP-42 Table 3.2-2. Greenhouse gas emissions are estimated using emission factors from 40 CFR 98 Subpart C Tables C-1 and C-2.

Caterpillar 3612A4 Engines (Unit IDs: ENG-3 through ENG-8)
NO_X, CO, and VOC emission rates were calculated using manufacturer specifications. SO_2 emissions are based on a conservative fuel sulfur content estimated of 2 gr S/100 scf and 100% conversion of elemental sulfur to SO_2. Particulate ($PM_{2.5}$, PM_{10}, and PM) and HAP emissions were calculated using AP-42 Table 3.2-2. Greenhouse gas emissions are estimated using emission factors from 40 CFR 98 Subpart C Tables C-1 and C-2.

Glycol Dehydrator (Unit ID: DEHY-1)
Glycol dehydrator emissions were calculated using BR&E Promax and an extended gas analysis. Flash tank emissions are sent to station suction, still column to BTEX, BTEX non-condensable is sent to reboiler stack with glow plug with 98% DRE.

Gunbarrel Tank (Unit ID: TK-407)
Gunbarrel emissions were estimated using BR&E ProMax. Flash, working and standing emissions are controlled by a VRU with an assumed 5% downtime.

Storage Tanks (Unit IDs: TK-406A through TK-406C)
Condensate storage tanks (Unit IDs: TK-406A and TK-406B) and produced water tanks (Unit IDs: TK-406C) emissions were estimated using BR&E ProMax. Flash, working and standing emissions from these tanks are controlled by a VRU with an assumed 5% downtime.

Enclosed Combustor Devices (Unit IDs: ECD-1)
NO_X and CO emissions were calculated using TNRCC RG-109. VOCs and HAPs emissions were estimated based on the gas analysis and with manufacturer specification of 95% combustion efficiency. Pilot SO_2 emissions are based on a conservative fuel sulfur content estimated of 2 gr S/100 scf and 100% conversion of elemental sulfur to SO_2. Process emissions were calculated assuming 95% combustion efficiency. Greenhouse gas emissions are estimated using emission factors from 40 CFR Part 98 Subpart C Table C-01 and C-02.

Fugitive Emissions (Unit ID: FUG)
Fugitive emission calculations were completed using emission factors from Table 2-4 of EPA Protocol for Equipment Leak Emission Estimates, 1995, and weight percent of gas and liquid components from gas and liquid streams generated in a BR&E ProMax simulation. Subcomponent counts for each subcomponent are based on estimated average component counts for each piece of equipment.

Condensate Loading Emissions (Unit ID: LOAD-1)
ProMax was used to perform the loading emission for condensate.

Reboiler (Unit ID: RBL-1)
NO_X, CO, VOCs and PM were estimated using AP-42 Table 1.4-1 & 1.4-2 with adjusted emission factor. HAPs were calculated using adjusted emission rates from AP-42 Table 1.4-3. SO_2 emissions were calculated with a conservative assumption of 2 gr S/100 scf and 100% conversion of elemental sulfur to SO_2. Greenhouse gas emissions are estimated using emission factors from 40 CFR Part 98 Subpart C Table C-01 and C-02.

Unpaved Haul Road (Unit ID: HAUL)
PM_{10} and $PM_{2.5}$ emissions were estimated based on the condensate loadout design basis and using equations 1a & 2 from AP-42 Section 13.2.2. Emissions factors were used from AP-42 Table 13.2.2-2.

Exempt Methanol Storage Tank (Unit ID: TK-408)
210 bbl Methanol Storage Tank (TK-408) is exempt pursuant to 20.2.72.202.B.(5) NMAC. Emissions were calculated using BR&E ProMax.

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)

Delaware G&P - Red Raider Compressor Station

Emissions Summary

Emission Unit: All

Source Description: Delaware G&P - Red Raider Compressor Station - Maximum Uncontrolled and Controlled Emissions

Maximum Uncontrolled Emissions

Unit	NO_x		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		H_2S		Total HAP	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
ENG-1	3.31	14.48	26.24	114.91	11.24	49.25	0.19	0.85	0.35	1.51	0.35	1.51	-	-	3.59	15.72
ENG-2	3.31	14.48	26.24	114.91	11.24	49.25	0.19	0.85	0.35	1.51	0.35	1.51	-	-	3.59	15.72
ENG-3	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	-	-	1.94	8.51
ENG-4	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	-	-	1.94	8.51
ENG-5	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	-	-		
ENG-6	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	-	-		
ENG-7	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	-	-		
ENG-8	2.48	10.86	25.22	110.44	9.34	40.92	0.14	0.63	0.25	1.12	0.25	1.12	-	-		
RBL-1	0.20	0.86	0.16	0.72	0.011	0.047	0.011	0.049	0.015	0.065	0.015	0.065	-	-	0.0037	0.016
TK-406A[1]	-	-	-	-	*	30.55	-	-	-	-	-	-	-	-	*	2.06
TK-406B[1]	-	-	-	-	*	30.55	-	-	-	-	-	-	-	-	*	2.06
TK-406C[1]	-	-	-	-	*	0.082	-	-	-	-	-	-	-	-	*	0.027
TK-407[1]	-	-	-	-	*	29.18	-	-	-	-	-	-	-	-	*	1.73
DEHY-1[2]	-	-	-	-	337.03	1476.18	-	-	-	-	-	-	-	-	11.67	51.11
ECD-1	0.0042	0.018	0.0084	0.037	-	-	1.71E-04	7.51E-04	-	-	-	-	-	-	-	-
LOAD-1[3]	-	-	-	-	1.20	5.26	-	-	-	-	-	-	-	-	0.10	0.45
FUG	-	-	-	-	2.29	10.02	-	-	-	-	-	-	-	-	0.19	0.82
SSM/M	-	-	-	-	*	10.00	-	-	-	-	-	-	-	-	*	0.38
Totals	***21.70***	***95.03***	***203.94***	***893.24***	***419.07***	***1935.87***	***1.26***	***5.50***	***2.23***	***9.78***	***2.23***	***9.78***	***0.000***	***0.00***	*******	***107.10***

Maximum Controlled Emissions																		
Unit	**NO_x**		**CO**		**VOC**		**SO_2**		**PM_{10}**		**$PM_{2.5}$**		**H_2S**		**Total HAP**		**Formaldehyde**	
	lb/hr	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**
ENG-1	3.31	14.48	6.39	28.00	8.01	35.06	0.19	0.85	0.35	1.51	0.35	1.51	-	-	0.76	3.32	0.33	1.45
ENG-2	3.31	14.48	6.39	28.00	8.01	35.06	0.19	0.85	0.35	1.51	0.35	1.51	-	-	0.76	3.32	0.33	1.45
ENG-3	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	-	-	0.56	2.46	0.19	0.83
ENG-4	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	-	-	0.56	2.46	0.19	0.83
ENG-5	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	-	-	0.56	2.46	0.19	0.83
ENG-6	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	-	-	0.56	2.46	0.19	0.83
ENG-7	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	-	-	0.56	2.46	0.19	0.83
ENG-8	2.48	10.86	4.80	21.00	5.32	23.28	0.14	0.63	0.25	1.12	0.25	1.12	-	-	0.56	2.46	0.19	0.83
RBL-1	0.20	0.86	0.16	0.72	0.011	0.047	0.011	0.049	0.015	0.065	0.015	0.065	-	-	0.0037	0.016	1.47E-04	6.44E-04
TK-406A[1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-406B[1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-406C[1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-407[1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEHY-1[2]	-	-	-	-	0.63	2.76	-	-	-	-	-	-	-	-	0.10	0.44	-	-
ECD-1	0.10	0.45	0.20	0.89	0.055	0.24	1.71E-04	7.51E-04	-	-	-	-	-	-	0.0037	0.016	-	-
LOAD-1[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FUG	-	-	-	-	2.29	10.02	-	-	-	-	-	-	-	-	0.19	0.82	-	-
SSM/M	-	-	-	-	*	10.00	-	-	-	-	-	-	-	-	*	0.38	-	-
Totals	***21.79***	***95.45***	***41.92***	***183.63***	***50.89***	***232.90***	***1.26***	***5.50***	***2.23***	***9.78***	***2.23***	***9.78***	***0.00***	***0.00***	***5.18***	***23.07***	*******	***7.89***
Total Without Fugitives	***21.79***	***95.45***	***41.92***	***183.63***	***48.60***	***222.88***	***1.26***	***5.50***	***2.23***	***9.78***	***2.23***	***9.78***	***0.00***	***0.00***	***4.99***	***22.25***	***1.80***	***7.89***

"*" Indicates that an hourly limit is not appropriate for this operating situation and is not being requested.

"-" Indicates emissions of this pollutant are not expected.

[1] The enclosed combustion unit controls TK-406A through TK-407 during VRU downtime with an assumed 95% DRE for VOC and HAPs.

[2] Flash tank emissions are sent to station suction, still column to BTEX, BTEX non-condensables are sent to reboiler stack with glow plug with 98% DRE.

[3] Emissions from truck loadout of condensate and PW are vapor-balanced back to their respective storage tanks and vented to enclosed combustion unit ECD-1.

Delaware G&P - Red Raider Compressor Station
Compressor Engine Emissions

Unit:	ENG-1 through ENG-2		
Model:	Waukesha 16V275GL Compressor Engine	4SLB	
	5000	hp	Mfg. specs
Fuel Consumption:	6910	Btu/hp-hr	Mfg. specs
Fuel Heating Value:	1020.00	Btu/scf	Facility Specific
Daily Fuel Usage:	812941	scf/day	Calculated
Hourly Fuel Usage:	33873	scf/hr	Hourly Fuel Consumption
Annual Fuel Usage:	296.72	MMscf/yr	Calculated

Uncontrolled Emissions

	NO_x[1]	CO[1]	VOC[1]	SO_2[2]	PM[3]	Formaldehyde[4]	Acetaldehyde[4]	Acrolein[4]	Benzene[4]	E-Benzene[4]	Toluene[4]	Xylene[4]	Total HAP	Units
Emission Factors	0.30	2.38	1.02			0.28								g/hp-hr
					9.99E-03		0.00836	0.00514	0.00044	0.0000397	0.000408	0.000184		lb/MMBtu
				0.020										gr/scf
Hourly Totals	3.31	26.24	11.24	0.19	3.45E-01	3.09	2.89E-01	1.78E-01	1.52E-02	1.37E-03	1.41E-02	6.36E-03	3.59	lb/hr
Annual Totals	14.48	114.91	49.25	0.85	1.51E+00	13.52	1.27E+00	7.78E-01	6.66E-02	6.01E-03	6.17E-02	2.78E-02	15.72	ton/yr

Controlled Emissions

	NO_x	CO	VOC	SO_2[2]	PM[3]	Formaldehyde[4]	Acetaldehyde[4]	Acrolein[4]	Benzene[4]	E-Benzene[4]	Toluene[4]	Xylene[4]	Total HAP	Units
Emission Factors	0.30	0.58	0.64			0.023								g/hp-hr
Percent Reduction	0%	76%	37%			92%								
					9.99E-03		0.00836	0.00514	0.00044	0.0000397	0.000408	0.000184		lb/MMBtu
				0.020										gr/scf
Hourly Totals	3.31	6.39	7.09	0.194	3.45E-01	0.25	2.89E-01	1.78E-01	1.52E-02	1.37E-03	1.41E-02	6.36E-03	0.76	lb/hr
Annual Totals	14.48	28.00	31.04	0.85	1.51E+00	1.11	1.27E+00	7.78E-01	6.66E-02	6.01E-03	6.17E-02	2.78E-02	3.32	ton/yr

GHG Calculations

CO_2[5]	N_2O[5]	CH_4[5]	CO_2e[5]		
53.06	0.0001	0.001		kg/MMBtu	40 CFR 98 Subpart Tables
1	298	25		GWP	40 CFR 98 Table A-1
17702.03	0.03	0.33	17702.40	tpy	
17702.03	9.94	8.34	17720.32	tpy CO2e	

Notes

[1] Emissions factors are referenced from the catalyst spec sheet.

[2] SO_2 is calculated based on the default fuel sulfur content from AECT of 0.02 grains total sulfur per scf.

[3] Assumes $PM_{10} = PM_{2.5}$ (condensable and filterable particulate), referenced from AP-42 Table 3.2-2.

[4] HAPs emissions factors are referenced from AP-42 Table 3.2-2.
HAPs include: Formaldehyde, Acetaldehyde, Acrolein, Benzene, Ethylbenzene, N-Hexane, Toluene, and Xylene
HAP emission factors were adjusted using the heat value of gas from site and standard 1020 Btu/scf

[5] N_2O, CH_4, and CO_2 tpy Emission Rate = EF * Fuel Usage * Fuel Heat Value *2.20462 lb/kg * 1 ton/2000 lb
CO_2e tpy Emission Rate = CO_2 Emission Rate + N_2O Emission Rate * GWP Factor + CH_4 Emission Rate * GWP Factor

Delaware G&P - Red Raider Compressor Station
Compressor Engine Emissions

Unit:	ENG-3 through ENG-8		
Model:	Caterpillar 3612A4		4SLB
	3750	hp	Mfg. specs
Fuel Consumption:	6800	Btu/hp-hr	Mfg. specs
Fuel Heating Value:	1020.00	Btu/scf	Facility Specific
Daily Fuel Usage:	600000	scf/day	Calculated
Hourly Fuel Usage:	25000	scf/hr	Hourly Fuel Consumption
Annual Fuel Usage:	219.00	MMscf/yr	Calculated

Uncontrolled Emissions

	NO_x[1]	CO[1]	VOC[1]	SO_2[2]	PM[3]	Formaldehyde[4]	Acetaldehyde[4]	Acrolein[4]	Benzene[4]	E-Benzene[4]	Toluene[4]	Xylene[4]	Total HAP	Units
Emission Factors	0.30	3.05	1.13			0.19								g/hp-hr
					9.99E-03		0.00836	0.00514	0.00044	0.0000397	0.000408	0.000184		lb/MMBtu
				0.020										gr/scf
Hourly Totals	2.48	25.22	9.34	0.14	0.25	1.57	0.21	0.13	0.011	0.0010	0.010	0.0047	1.94	lb/hr
Annual Totals	10.86	110.44	40.92	0.63	1.12	6.88	0.93	0.57	0.049	0.0044	0.046	0.021	8.51	ton/yr

Controlled Emissions

	NO_x	CO	VOC	SO_2[2]	PM[3]	Formaldehyde[4]	Acetaldehyde[4]	Acrolein[4]	Benzene[4]	E-Benzene[4]	Toluene[4]	Xylene[4]	Total HAP	Units
Emission Factors	0.30	0.58	0.64			0.023								g/hp-hr
Percent Reduction	0%	81%	43%			88%								
					9.99E-03		0.00836	0.00514	0.00044	0.0000397	0.000408	0.000184		lb/MMBtu
				0.020										gr/scf
Hourly Totals	2.48	4.80	5.32	0.14	0.25	0.19	0.21	0.13	0.011	0.0010	0.010	0.0047	0.56	lb/hr
Annual Totals	10.86	21.00	23.28	0.63	1.12	0.83	0.93	0.57	0.049	0.0044	0.046	0.021	2.46	ton/yr

GHG Calculations

CO_2[5]	N_2O[5]	CH_4[5]	CO_2e[5]		
53.06	0.0001	0.001		kg/MMBtu	40 CFR 98 Subpart Tables
1	298	25		GWP	40 CFR 98 Table A-1
13065.18	0.02	0.25	13065.45	tpy	
13065.18	7.34	6.16	13078.67	tpy CO2e	

Notes

[1] Emissions factors are referenced from the catalyst spec sheet.

[2] SO_2 is calculated based on the default fuel sulfur content from AECT of 0.02 grains total sulfur per scf.

[3] Assumes $PM_{10} = PM_{2.5}$ (condensable and filterable particulate), referenced from AP-42 Table 3.2-2.

[4] HAPs emissions factors are referenced from AP-42 Table 3.2-2.
HAPs include: Formaldehyde, Acetaldehyde, Acrolein, Benzene, Ethylbenzene, N-Hexane, Toluene, and Xylene
HAP emission factors were adjusted using the heat value of gas from site and standard 1020 Btu/scf

[5] N_2O, CH_4, and CO_2 tpy Emission Rate = EF * Fuel Usage * Fuel Heat Value *2.20462 lb/kg * 1 ton/2000 lb
CO_2e tpy Emission Rate = CO_2 Emission Rate + N_2O Emission Rate * GWP Factor + CH_4 Emission Rate * GWP Factor

Delaware G&P - Red Raider Compressor Station

Produced Water Storage Tanks

Produced Water Tank Input Information			
Unit(s):	TK-406C		
Description:	1000 bbl Produced Water Storage Tank		
Number of Tanks:	1		
Facility Produced Water Throughput:	48	bbl/day	Facility Design
Produced Water Throughput:	48	bbl/day/tank	

Flash, Working and Breathing Emissions[1] (Uncontrolled)					Controlled Emissions	
Component	Flash Emissions (tpy)	Working and Breathing Losses (tpy)	Total Emissions (tpy)	Total Emissions Per Tank (tpy)	Total Emissions (tpy)	Total Emissions Per Tank (tpy)
Nitrogen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon Dioxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methane	0.041	0.033	0.074	0.074	0.00E+00	0.00E+00
Ethane	0.026	0.032	0.058	0.058	0.00E+00	0.00E+00
Propane	0.025	0.022	0.047	0.047	0.00E+00	0.00E+00
Isobutane	0.0050	0.0030	0.0080	0.0080	0.00E+00	0.00E+00
n-Butane	0.013	0.010	0.023	0.023	0.00E+00	0.00E+00
Isopentane	0.0052	0.0028	0.0080	0.0080	0.00E+00	0.00E+00
n-Pentane	0.0027	0.0006	0.0033	0.0033	0.00E+00	0.00E+00
n-Hexane	0.0009	1.14E-04	0.0010	1.05E-03	0.00E+00	0.00E+00
Cyclohexane	0.0030	0.0063	0.0093	0.0093	0.00E+00	0.00E+00
Heptane	0.0011	6.65E-05	0.0011	1.15E-03	0.00E+00	0.00E+00
Methylcyclohexane	0.0013	0.0009	0.0022	0.0022	0.00E+00	0.00E+00
2,2,4-Trimethylpentane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	8.91E-04	0.018	0.019	0.019	0.00E+00	0.00E+00
Toluene	6.09E-04	0.0065	0.0071	0.0071	0.00E+00	0.00E+00
Ethylbenzene	5.57E-06	1.89E-05	2.44E-05	2.44E-05	0.00E+00	0.00E+00
o-Xylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
m-Xylene	3.36E-05	1.35E-04	1.69E-04	1.69E-04	0.00E+00	0.00E+00
p-Xylene	7.19E-06	2.93E-05	3.65E-05	3.65E-05	0.00E+00	0.00E+00
Water	0.0025	0.0024	0.0049	0.0049	0.00E+00	0.00E+00
Total VOC	**0.034**	**0.048**	**0.082**	**0.082**	0.00E+00	0.00E+00
Total HAP	**0.0025**	**0.025**	**0.027**	**0.027**	0.00E+00	0.00E+00

[1] Flash, working, and breathing emissions from the produced water tank are controlled by a VRU with an assumed 5% downtime. VRU Downtime is controlled by an enclosed combustion unit (ECD-1). Controlled emissions from the produced water tank are represented at the ECD.

Delaware G&P - Red Raider Compressor Station

Reboiler

Heater Input Information			
Unit(s):	RBL-1		
Description:	2 MMBtu/hr Heaters		
Heat input:	2.00	MMBtu/hr	Estimated heat input
Fuel heat value:	1,020	Btu/scf	
Fuel sulfur content:	2.0	gr S/100scf	Estimated for field gas
Operating hours:	8,760	hours/year	
Fuel Usage:	1,961	scf/hr	
	17.2	MMscf/yr	

Criteria Pollutant Emission Rates per Unit							
	NO_x	CO	VOC	SO_2[1]	PM^*[2]	Units	Notes
Emission Factors	100	84	5.5	-	7.6	lb/MMscf	AP-42 Table 1.4-1 & 2
	100.0	84.0	5.5	-	7.6	lb/MMscf	Adjusted EF, per footnote a in Tables 1.4-1 and 1.4-2
Emissions	0.20	0.16	0.011	0.011	0.015	lb/hr[3]	
	0.86	0.72	0.047	0.049	0.065	tons/year[4]	

HAP Emission Rates per Unit							
	Hexane	Benzene	Toluene	HCHO	Total HAPs[5]	Units	Notes
Emission Factors	1.8	2.10E-03	3.40E-03	0.075	-	lb/MMscf	AP-42 Table 1.4-3
	1.8	2.10E-03	3.40E-03	7.50E-02	-	lb/MMscf	Adjusted EF, per footnote a in Table 1.4-3
Emissions	0.0035	4.12E-06	6.67E-06	1.47E-04	0.0037	lb/hr[3]	
	0.015	1.80E-05	2.92E-05	6.44E-04	0.016	tons/year[4]	

GHG Calculations						
	CO_2[6]	N_2O[6]	CH_4[6]	CO_2e[6]		
	53.06	0.0001	0.001		kg/MMBtu	40 CFR 98 Subpart Tables
	1	298	25		GWP	40 CFR 98 Table A-1
	1024.72	0.0019	0.019	1024.74	tpy	
	1024.72	0.58	0.48	1025.78	tpy CO2e	

[1] SO_2 emissions based on fuel sulfur content of 2 gr S/100 scf or 0.00286 lb S/Mscf
0.00286 lb S/Mscf*fuel consumption (Mscf/hr)*64 lb SO_2/32 lb S = lb SO_2/hr

[2] Assumes PM_{10} = $PM_{2.5}$

[3] lb/hr emissions calculated using the following methods:
Criteria and HAPs lb/hr = EF (lb/MMscf) * Rating (MMBtu/hr) / Heat value (Btu/scf)

[4] For all non-HAP calculations, tons/year = lb/hr * Operating hours * 1ton/2000lb

[5] Total HAP emissions are the sum of all individual HAPs calculated.

[6] N2O, CH4, and CO2 tpy Emission Rate = EF * Fuel Usage * Fuel Heat Value *2.20462 lb/kg * 1 ton/2000 lb
CO2e tpy Emission Rate = CO2 Emission Rate + N2O Emission Rate * GWP Factor + CH4 Emission Rate * GWP Factor

Parameters	Value	Unit	Note
Input heat rate	2.00	MMBtu/hr	Estimated
Fuel heat value	1,020	Btu/scf	Estimated, nominal
Fuel rate	1.96	Mscf/hr	Input heat rate / fuel heat value
Annual fuel usage	17.18	MMscf/yr	8760 actual hrs/yr operation

Parameters	Value	Unit	Note
Input heat rate	2.00	MMBtu/hr	
Exhaust temp	1,400	°F	Engineering Estimate
Stack height	9	ft	Engineering Estimate
Stack diameter	0.80	ft	Engineering Estimate
Exhaust flow (Actual)	802	acfm	Flow (acfm) = Flow (scfm) * (Stack Temp + 460) / 528 * 29.92 / Site Bar. Pres. / (100% - Moisture%)
Exhaust flow (Actual)	13.37	acfs	Flow (acfs) - Flow (acfm) / 60s/min
Exhaust velocity	26.60	ft/sec	Exhaust flow / stack area
O_2 F factor	8,710	dscf/MMBtu	Method 9
Moisture	10	%	Nominal
Exhaust flow (Dry)	556.7	dscfm	Flow (dscfm) = heat input * O2 F * [20.9 / (20.9 - O2%)]
O_2 %	10	%	
Site Elevation	3,037	ft MSL	
Pressure at Elevation	26.78	in Hg	

Delaware G&P - Red Raider Compressor Station

Unpaved Haul Road Emissions

Haul Input Information	
Unit(s):	HAUL
Description:	Unpaved haul road emissions

Input Data		
Truck Size	7560	Nominal (gal)
Total Loadout Volume[1]	3,000,483	gal/yr
Trips per Year[2]	397	trips/year
Trips per hour	1	trips/hr
Empty vehicle weight[3]	16	tons
Load Out Density[4]	5.75	lb/gal
Load weight[5]	21.7	tons
Loaded vehicle[6]	37.7	tons
Mean vehicle weight[7]	26.86	tons
Round-trip distance	0.25	mile/trip
Loadout Spots	2	Assumed
Facility Operating Hours	8,760	Cumulative total
Surface silt content[8]	4.8	%
Annual wet days[9]	70	days/yr

Emission Factors and Constants		
Parameter	**PM_{10}**	**$PM_{2.5}$**
k, lb/VMT[10]	1.5	0.15
a, lb/VMT[10]	0.90	0.90
b, lb/VMT[10]	0.45	0.45
Hourly EF, lb/VMT[11]	1.76	0.18
Annual EF, lb/VMT[12]	1.43	0.14

Emission Rate Calculation					
VMT/hr[13]	**VMT/yr[13]**	**Hourly Emission Rate by Month (lb/hr)[14]**		**Annual Emission Rate (tons/yr)[14]**	
		PM_{10}	**$PM_{2.5}$**	**PM_{10}**	**$PM_{2.5}$**
0.25	99.3	0.44	0.044	0.07	0.007

[1] The facility will remove condensate and produced water via loadout. Loadout volume is based on facility design.

[2] Trips per Year = Total Loadout Volume (gal) / Truck Size (gal)

[3] Empty vehicle weight includes driver and occupants and full fuel load.

[4] Cargo, transported materials, etc. (Promax Loadout Density = Condensate density 43 (lb/scf)*1 scf / 7.480519 gal)

[5] Load weight (lb) = Truck Size (gal) * Oil Load Out Density (lb/gal)

[6] Loaded vehicle weight = Empty + Load Size

[7] Mean Vehicle weight = (Loaded Weight + Empty Weight) / 2

[8] AP-42 Table 13.2.2-1

[9] Per NMED Guidance

[10] Table 13.2.2-2, Industrial Roads

[11] AP-42 13.2.2, Equation 1a

[12] AP-42 13.2.2, Equation 2

[13] VMT/hr = 1 trip/hr * Round-trip distance (mi/trip)
VMT/yr = Trips per Year * Round-trip distance (mi/trip)

[14] Hourly Emission Rate (lb/hr) = Hourly EF (lb/VMT) * VMT/hr (mile/hr)
Annual Emission Rate (tpy) = Annual EF (lb/VMT) * VMT/yr (mile/yr) / 2000 lb/ton

Delaware G&P - Red Raider Compressor Station

Condensate Storage Tanks

Oil Tank Input Information			
Unit(s):	TK-406A & TK-406B		
Description:	1000 bbl Condensate Storage Tank		
Number of Tanks:	2		
Facility condensate Throughput:	147.64	bbl/day	Facility Design
Condensate Throughput:	73.82	bbl/day/tank	

Flash, Working and Breathing Emissions[1] (Uncontrolled)					Controlled Emissions	
Component	Flash Emissions (tpy)	Working and Breathing Losses (tpy)	Total Emissions (tpy)	Total Emissions Per Tank (tpy)	Total Emissions (tpy)	Total Emissions Per Tank (tpy)
Nitrogen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon Dioxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methane	5.08	0.45	5.53	2.77	0.00E+00	0.00E+00
Ethane	8.55	3.75	12.29	6.15	0.00E+00	0.00E+00
Propane	14.02	4.92	18.94	9.47	0.00E+00	0.00E+00
Isobutane	3.53	1.17	4.70	2.35	0.00E+00	0.00E+00
n-Butane	9.21	3.08	12.29	6.15	0.00E+00	0.00E+00
Isopentane	4.50	1.40	5.90	2.95	0.00E+00	0.00E+00
n-Pentane	5.55	1.77	7.32	3.66	0.00E+00	0.00E+00
n-Hexane	2.67	0.84	3.51	1.75	0.00E+00	0.00E+00
Cyclohexane	1.30	0.34	1.65	0.82	0.00E+00	0.00E+00
Heptane	3.96	1.15	5.11	2.55	0.00E+00	0.00E+00
Methylcyclohexane	0.82	0.25	1.07	0.54	0.00E+00	0.00E+00
2,2,4-Trimethylpentane	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	0.28	0.056	0.34	0.17	0.00E+00	0.00E+00
Toluene	0.21	0.040	0.25	0.12	0.00E+00	0.00E+00
Ethylbenzene	0.00	0.0003	0.0022	0.0011	0.00E+00	0.00E+00
o-Xylene	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
m-Xylene	0.01	0.0022	0.014	0.0072	0.00E+00	0.00E+00
p-Xylene	0.00	0.00047	0.0030	0.0015	0.00E+00	0.00E+00
Water	0.24	3.53E-05	0.24	0.12	0.00E+00	0.00E+00
Total VOC	**46.07**	**15.02**	**61.09**	**30.55**	0.00E+00	0.00E+00
Total HAP	**3.17**	**0.94**	**4.11**	**2.06**	0.00E+00	0.00E+00

[1] Flash, working, and breathing emissions from condensate tanks are controlled by a VRU with an assumed 5% downtime. VRU Downtime is controlled by an enclosed combustion unit (ECD-1). Controlled emissions from the condensate tanks are represented at the ECD.

Delaware G&P - Red Raider Compressor Station

Gunbarrel Tank

Gunbarrel Tank Input Information			
Unit(s):	TK-407		
Description:	750 bbl Gunbarrel Tank		
Number of Tanks:	1		
Facility Produced Water Throughput:	200	bbl/day	Facility Design
Produced Water Throughput:	200	bbl/day/tank	

Flash, Working and Breathing Emissions[1] (Uncontrolled)					Controlled Emissions	
Component	Flash Emissions (tpy)	Working and Breathing Losses (tpy)	Total Emissions (tpy)	Total Emissions Per Tank (tpy)	Total Emissions (tpy)	Total Emissions Per Tank (tpy)
Nitrogen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon Dioxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methane	16.69	0.17	16.86	16.86	0.00E+00	0.00E+00
Ethane	8.13	0.77	8.90	8.90	0.00E+00	0.00E+00
Propane	9.21	1.08	10.29	10.29	0.00E+00	0.00E+00
Isobutane	2.00	0.28	2.28	2.28	0.00E+00	0.00E+00
n-Butane	5.03	0.75	5.78	5.78	0.00E+00	0.00E+00
Isopentane	2.30	0.35	2.66	2.66	0.00E+00	0.00E+00
n-Pentane	2.78	0.45	3.23	3.23	0.00E+00	0.00E+00
n-Hexane	1.25	0.21	1.47	1.47	0.00E+00	0.00E+00
Cyclohexane	0.61	0.088	0.70	0.700	0.00E+00	0.00E+00
Heptane	1.77	0.30	2.07	2.07	0.00E+00	0.00E+00
Methylcyclohexane	0.37	0.065	0.44	0.44	0.00E+00	0.00E+00
2,2,4-Trimethylpentane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	0.13	0.014	0.15	0.15	0.00E+00	0.00E+00
Toluene	0.092	0.010	0.10	0.10	0.00E+00	0.00E+00
Ethylbenzene	8.05E-04	9.36E-05	8.98E-04	8.98E-04	0.00E+00	0.00E+00
o-Xylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
m-Xylene	0.0052	5.89E-04	0.0058	0.0058	0.00E+00	0.00E+00
p-Xylene	0.0011	1.27E-04	0.0012	0.0012	0.00E+00	0.00E+00
Water	0.31	0.13	0.44	0.44	0.00E+00	0.00E+00
Total VOC	**25.57**	**3.61**	**29.18**	**29.18**	0.00E+00	0.00E+00
Total HAP	**1.49**	**0.24**	**1.73**	**1.73**	0.00E+00	0.00E+00

[1] Flash, working, and breathing emissions are controlled by a VRU with an assumed 5% downtime. VRU Downtime is controlled by an enclosed combustion unit (ECD-1). Controlled emissions from the condensate tanks are represented at the ECD.

Methanol Storage Tank - Exempt Equipment

Exempt per 20.2.72.202.B.5

Methanol Tank Input Information			
Unit(s):	TK-408		
Description:	210 bbl Methanol Storage Tank		
Number of Tanks:	1		
Facility Methanol Throughput:	2.38	bbl/day	Facility Design
Methanol Throughput:	2.38	bbl/day/tank	

Flash, Working and Breathing Emissions[1] (Uncontrolled)				
Component	Flash Emissions (tpy)	Working and Breathing Losses (tpy)	Total Emissions (tpy)	Total Emissions Per Tank (tpy)
Methanol	0.00E+00	0.18	0.18	0.18
Total VOC	**0.00**	**0.18**	**0.18**	**0.18**
Total HAP	**0.00**	**0.18**	**0.18**	**0.18**

[1] Flash, working, and breathing emissions from the methanol storage tank are below 0.5 tpy of VOC therefore this unit is exempt per 20.2.72.202.B.5 NMAC

Delaware G&P - Red Raider Compressor Station

Condensate Loading Emissions

Annual Operating Hours: 8760

Uncontrolled Loading Emissions						
	Condensate Loading (Unit LOAD)		Produced Water Loading (Unit LOAD		Total	
Pollutant	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**
VOC	1.10	4.83	0.10	0.42	1.20	5.26
n-Hexane	0.062	0.27	0.0002	0.0007		
Benzene	0.0041	0.018	0.025	0.11		
Toluene	0.0029	0.0128	0.009	0.039		
Ethylbenzene	2.54E-05	1.11E-04	2.60E-05	1.14E-04		
m-Xylene	1.59E-04	6.95E-04	1.87E-04	8.17E-04		
o-Xylene	0.00000	0.00000	0.00000	0.00000		
p-Xylene	3.43E-05	1.50E-04	4.05E-05	1.77E-04		
Total HAP	0.069	0.30	0.034	0.15	0.10	0.45

[1] Loading emissions are calculated using a BR&E ProMax simulation.

[2] Emissions from truck loadout of produced water and condensate are vapor-balanced back to the condensate storage tanks and 5% routed to ECD during VRU downtime.

Delaware G&P - Red Raider Compressor Station

Enclosed Combustor

Emission Unit: ECD-1
Source Description: Condensate Tanks, Produced Water Tank, Gunbarrel Tank, Condensate and PW Loading

VOC Heat Input and Flow Rate Calculation Per Unit

Parameters	Value	Unit	Notes
Number of ECDs	1	-	
VRU Downtime	5%		
VOC Emissions	4.80	tpy	Condensate Tanks, Produced Water Tank, Gunbarrel Tank, Condensate and PW Loading
HAP Emissions	0.33	tpy	Condensate Tanks, Produced Water Tank, Gunbarrel Tank, Condensate and PW Loading
Total Flared Gas Heating Value	1987.38	Btu/scf	Weighted average heating value from all streams
Total Flared Gas Flow	3.55E+02	scf/hr	Total flow from all streams to flare
Total Flared Gas Heating Rate	0.706	MMBtu/hr	Calculated based on heating value and steady-state flow
Flared Gas Flow Rate with Safety Factor	0%	%	Safety factor
	355.14	scf/hr	Flow with safety factor
	3.11	MMscf/yr	
Short-Term Safety Factor	0%	-	Applied to emissions to account for variations in heat content.
Heating Rate	0.7058	MMBtu/hr	
Flare pilot	30	scf/hr	Mfg. Spec Sheet
	0%		Safety factor
	30	scf/hr	Pilot flow with safety factor
	3.00E-05	MMscf/hr	
Pipeline Gas HHV	1020	Btu/scf	Facility specification
Flare Heat Input	0.031	MMBtu/hr	
	0.26	MMscf/yr	
Heating Rate + Pilot	0.74	MMBtu/hr	

Emission Rates Per Unit

	NO_X	CO	VOC[1]	SO_2[2]	H_2S	HAPs[1]	Units	Notes
Emission Factors	0.1380	0.2755					lb/MMBtu	TNRCC RG-109 (high Btu; other)
							lb H_2S/Mscf	
				8.57E-05			lb S/hr	
			4.80		-	0.327	tpy	Condensate Tanks, Produced Water
Pilot Emissions	0.0042	0.008	-	1.71E-04	-	-	lb/hr	
	0.018	0.037	-	7.51E-04	-	-	tpy	
Process Emissions	0.10	0.19	-	-	-	-	lb/hr	
			0.055	-	-	3.74E-03	lb/hr	
	0.43	0.85	0.240	-	-	1.64E-02	tpy	
Total Emissions	***0.10***	***0.20***	***5.48E-02***	***1.71E-04***	***-***	***3.74E-03***	lb/hr	
	0.45	***0.89***	***2.40E-01***	***7.51E-04***	***-***	***1.64E-02***	tpy	

GHG Calculations

	CO_2[3]	N_2O[3]	CH_4[3]	CO_2e[3]		
	53.06	0.0001	0.001		kg/MMBtu	40 CFR 98 Subpart Tables
	1	298	25		GWP	40 CFR 98 Table A-1
	361.62	0.00068	0.0068	361.63	tpy	
	361.62	0.20	0.17	362.00	tpy CO2e	

[1] The ECD controls Condensate tanks, produced water tank, gunbarrel, condensate loading, and produced water loading emissions during downtime. 95.00% DRE

[2] Fuel sulfur content is assumed to be 2 gr/100 Scf

[3] N2O, CH4, and CO2 tpy Emission Rate = EF * Fuel Usage * Fuel Heat Value *2.20462 lb/kg * 1 ton/2000 lb

CO2e tpy Emission Rate = CO2 Emission Rate + N2O Emission Rate * GWP Factor + CH4 Emission Rate * GWP Factor

"-" Indicates emissions of this pollutant are not expected.

Parameters	Value	Unit	Note
Input heat rate	1.60	MMBtu/hr	
Exhaust temp	1,200	°F	Manufacturer spec
Stack height	13.00	ft	Manufacturer spec
Stack diameter	5.00	ft	Manufacturer spec
Exhaust flow (Actual)	1738	acfm	Flow (acfm) = Flow (scfm) * (Stack Temp + 460) / 528 * 29.92 / Site Bar. Pres. / (100% - Moisture%)
Exhaust flow (Actual)	28.97	acfs	Flow (acfs) - Flow (acfm) / 60s/min
Exhaust velocity	1.48	ft/sec	Exhaust flow / stack area
O_2 F factor	8,710	dscf/MMBtu	Method 9
Moisture	10	%	Nominal
Exhaust flow (Dry)	445.4	dscfm	Flow (dscfm) = heat input * O2 F * [20.9 / (20.9 - O2%)]
O_2 %	10	%	
Site Elevation	3,037	ft MSL	
Pressure at Elevation	26.78	in Hg	

Delaware G&P - Red Raider Compressor Station

Glycol Dehydrator Emissions

Unit: DEHY-1
Description: Glycol Dehydrator
Control Equipment: BTEX Condenser
Dry Gas Flow Rate: 150 MMscfd
Pump Circulation: 30.00 gpm

Uncontrolled Emissions[1]

Unit	VOC		H_2S		Methane		CO_2		Total HAP		n-Hexane		Benzene		Toluene		Ethylbenzene		Xylenes	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Dehy-1 (Flash Vent)	305.47	1337.97	-	-	671.41	2940.79	5.92	25.92	6.59	28.86	5.48	24.00	0.78	3.40	0.32	1.39	0.0021	0.0093	0.014	0.062
Dehy-1 (Regenerator)	31.56	138.22	-	-	4.47	19.56	0.45	1.98	5.08	22.25	1.33	5.83	2.80	12.28	0.92	4.03	0.0031	0.013	0.022	0.10
DEHY-1 Total	337.03	1476.18	-	-	675.88	2960.35	6.37	27.90	11.67	51.11	6.81	29.83	3.58	15.68	1.24	5.42	0.0052	0.023	0.036	0.16

Controlled Emissions[2]

Unit	VOC		H_2S		Methane		CO_2		Total HAP		n-Hexane		Benzene		Toluene		Ethylbenzene		Xylenes	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Dehy-1 (Flash Vent)[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dehy-1 (Regenerator)[2]	0.63	2.76	-	-	0.089	0.39	0.0090	0.040	0.10	0.44	0.027	0.12	0.056	0.25	0.018	0.081	6.14E-05	2.69E-04	4.44E-04	1.95E-03
DEHY-1 Total	0.63	2.76	-	-	0.089	0.39	0.0090	0.040	0.10	0.44	0.027	0.12	0.056	0.25	0.018	0.081	6.14E-05	2.69E-04	4.44E-04	1.95E-03

Notes

[1] Emissions are calculated using BR&E ProMax.

[2] Flash tank emissions are sent to station suction, still column to BTEX, BTEX non-condensables are sent to reboiler stack with glow plug with 98% DRE.

Delaware G&P - Red Raider Compressor Station

Fugitives

Unit: FUG

Annual Operating Hours: 8,760

Facility-wide Fugitive Emissions Per Piece of Equipment					
Subcomponent		**Emission Factor[1] (lb/hr/comp)**	**VOC Content[2] (wt%)**	**HAP Content[2] (wt%)**	**Subcomponent Counts[3]**
Valves	Gas	9.92E-03	21.61%	0.39%	393
	Light Oil	5.51E-03	99.84%	15.56%	136
	Water/Oil	2.16E-04	0.0035%	0.0035%	136
Flanges	Gas	8.60E-04	21.61%	0.39%	393
	Light Oil	2.43E-04	99.84%	15.56%	136
	Water/Oil	6.39E-06	0.0035%	0.0035%	136
Connectors	Gas	4.41E-04	21.61%	0.39%	2423
	Light Oil	4.63E-04	99.84%	15.56%	332
	Water/Oil	2.43E-04	0.0035%	0.0035%	332
Other	Gas	1.94E-02	21.61%	0.39%	0
	Light Oil	1.65E-02	99.84%	15.56%	0
	Water/Oil	3.09E-02	0.0035%	0.0035%	0
Pump Seals	Gas	5.29E-03	21.61%	0.39%	0
	Light Oil	2.87E-02	99.84%	15.56%	3
	Water/Oil	5.29E-05	0.0035%	0.0035%	3
Open Ended Lines	Gas	4.41E-03	21.61%	0.39%	87
	Light Oil	3.09E-03	99.84%	15.56%	12
	Water/Oil	5.51E-04	0.0035%	0.0035%	12
				Hourly VOC Emission Rate (lb/hr)[4]	2.29
				Annual VOC Emission Rate (tpy)[5]	10.02
				Hourly HAP Emission Rate (lb/hr)[4]	0.187
				Annual HAP Emission Rate (tpy)[5]	0.82

[1] Emission factors from Table 2-4 of EPA Protocol for Equipment Leak Emission Estimates, 1995.

[2] Weight percent of gas and liquid components from gas and liquid streams generated in a ProMax simulation of this facility.

[3] Component counts are based on estimated design.

[4] Hourly Emissions [lb/hr] = Emissions Factor [lb/hr/component] * Weight Content of Chemical Component [%] * Subcomponent Count.

[5] Annual Emissions [ton/yr] = Hourly Emissions [lb/hr] * Operating Hours [hr/yr] * 1/2000 [ton/lb].

Delaware G&P - Red Raider Compressor Station
SSM/M Emission Calculation Inputs

Compressor Blowdowns

Compressor Name	Quantity of Compressors (#)	Quantity of Compressors Simultaneously (#)	Total Volume (scf/event)[1]	Hours / Blowdown (hr/event)	Number of Events/yr
Waukesha 16V275GL Compressor Engine	2	2	1365.0	1	208
Caterpillar 3612A4 Compressor Engine	6	6	1365.0	1	624

[1] Blowdown volumes provided by Delaware G&P

Dehydrator Blowdowns

Dehydrator/Amine	Volume of Gas per Blowdown (scf/event)	# Blowdowns / year (# /year)	Hours / Blowdown (hr/event)	Number of Units (#)
42" Contactor	21,870	2	1	1
30" Contactor	9,025	2	1	1

Filter Coalescer Blowdowns

Input Data	Value	Units
Volume of gas per blowdown	6900	scf/event
Number of Filter Coalescers	1	Units
Number of Blowdowns per unit per year	2	events/yr
Duration of Event	1	hr/event

Scrubbers

Input Data	Value	Units
Volume of Gas Per Blowdown	33800	scf/event
Number of Scrubbers	5	Units
Number of Blowdowns per unit per year	6	events/yr
Duration of Event	1	hr/event
Simultaneous unit blowdowns	5	

Pump Blowdowns

Input Data	Value	Units
Volume of gas per blowdown	16	scf/event
Number of pumps	2	Units
Number of blowdowns per unit per year	5	events/yr
Hours per event	1	hr/event
Simultaneous unit blowdowns	2	Units

Reboiler Maintenance

Input Data	Value	Units
Volume of Gas Released during Reboiler Maintenance	65	scf/event
Number of Reboilers	1	-
Duration of Event	1	hr/event
Maintenance Events per year	2	event/ year
Actual Pressure	15.2	psia
Maximum Temperature	100	°F
Annual Temperature	80	°F
Simultaneous Events	1	events

Pipeline Maintenance

Input Data	Value	Units
Pipeline Diameter	12	inches
Pipeline Length	11058	ft
Duration of Event	0.25	hr/event
Maintenance events per year	2	events/yr
Actual Pressure	100	psia
Maximum Temperature	100	°F
Annual Temperature	80	°F
Pipeline volume vented	54874	scf/event

Tank Maintenance

Input Data	Value	Units
Number of tanks	3	Units
Molecular Weight of Vapors	70	lb/lb-mol
Duration of tank purging/degassing	24	hr/event
Volume of gas released during degassing event	4322.83	scf/event
Tank Height	21.5	ft
Tank Diameter	16	ft
Number of tank purging/degassing events per tank per year	4	event/yr

Delaware G&P - Red Raider Compressor Station

SSM/M Summary

Description	VOC		H_2S		Total HAPs	
	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Compressor Blowdowns	130.34	6.78	-	-	2.33	0.12
Coalescer Blowdowns	82.36	0.082	-	-	1.47	0.0015
Scrubber Blowdowns	2,017.12	1.21	-	-	36.00	0.022
Dehydrator Blowdowns	368.75	0.74	-	-	6.58	0.013
Pump Blowdowns	0.38	4.77E-04	-	-	0.007	8.52E-06
Pipeline Maintenance	654.95	0.33	-	-	11.69	0.006
Tank Degassing	127.48	0.87	-	-	31.87	0.22
Reboiler Maintenance	0.78	0.0008	-	-	0.014	1.38E-05
TOTAL	**3,382.15**	**10.00**	**--**	**--**	**89.95**	**0.38**

Delaware G&P - Red Raider Compressor Station

Waukesha 16V275GL Compressor Engine

Basis of Calculation:
Emissions from blowdowns are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of blowdown (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# compressors blowndown simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of blowdown (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# compressors blowndown at site (units)] x [frequency of events

Compressor BlowDown Emissions

Estimated Gas Vented per BlowDown Event [1] =	1,365	scf/event
Compressors at Site =	2	units
Compressors Blowndown Simultaneously =	2	units
Assumed BlowDown Duration =	1	hrs/event
Compressor BlowDowns in One Year =	208	events/yr
Molecular Weight of Stream =	21	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
Carbon Dioxide	0.31308	4.72E-01	2.45E-02	--	**--**	**--**
Hydrogen Sulfide	0.00000	0.00E+00	0.00E+00	--	--	--
Nitrogen	1.22866	1.85E+00	9.63E-02	--	--	--
Methane	59.89087	9.03E+01	4.70E+00	--	--	--
Ethane	16.95830	2.56E+01	1.33E+00	--	--	--
Propane	11.42849	1.72E+01	8.96E-01	--	--	--
i-butane	2.13880	3.23E+00	1.68E-01	--	--	--
n-butane	4.74664	7.16E+00	3.72E-01	--	--	--
i-pentane	1.31592	1.98E+00	1.03E-01	--	--	--
n-pentane	1.40491	2.12E+00	1.10E-01	--	--	--
n-hexane	0.34780	5.24E-01	2.73E-02	--	--	--
Cyclohexane	0.13841	2.09E-01	1.09E-02	--	--	--
n-heptane	0.05030	7.58E-02	3.94E-03	--	--	--
methylcyclohexane	0.00000	0.00E+00	0.00E+00	--	--	--
2,2,4-trimethylpentane	0.00000	0.00E+00	0.00E+00	--	--	--
benzene	0.02407	3.63E-02	1.89E-03	--	--	--
toluene	0.01277	1.93E-02	1.00E-03	--	--	--
ethylbenzene	0.00013	1.91E-04	9.95E-06	--	--	--
o-xylene	0.00000	0.00E+00	0.00E+00	--	--	--
m-xylene	0.00071	1.07E-03	5.57E-05	--	--	--
p-xylene	0.00013	1.91E-04	9.95E-06	--	--	--
Total VOC	**21.61**	**32.58**	**1.69**	**--**	**--**	**--**
H_2S	**0.0000**	**0.00E+00**	**0.00E+00**	**--**	**--**	**--**
Total HAP	**0.39**	**0.58**	**0.030**	**--**	**--**	**--**

Delaware G&P - Red Raider Compressor Station

Caterpillar 3612A4 Compressor Engine

Basis of Calculation:
Emissions from blowdowns are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of blowdown (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# compressors blowndown simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of blowdown (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# compressors blowndown at site (units)] x [frequency of events (events/yr/unit)] / [379.5 (scf/lb-mol)] /

Compressor BlowDown Emissions

Estimated Gas Vented per BlowDown Event [1] =	1,365	scf/event
Compressors at Site =	6	units
Compressors Blowndown Simultaneously =	6	units
Assumed BlowDown Duration =	1	hrs/event
Compressor BlowDowns in One Year =	624	events/yr
Molecular Weight of Stream =	21	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
Carbon Dioxide	0.31308	1.42E+00	7.36E-02	--	**--**	**--**
Hydrogen Sulfide	0.00000	0.00E+00	0.00E+00	--	--	--
Nitrogen	1.22866	5.56E+00	2.89E-01	--	--	--
Methane	59.89087	2.71E+02	1.41E+01	--	--	--
Ethane	16.95830	7.67E+01	3.99E+00	--	--	--
Propane	11.42849	5.17E+01	2.69E+00	--	--	--
i-butane	2.13880	9.68E+00	5.03E-01	--	--	--
n-butane	4.74664	2.15E+01	1.12E+00	--	--	--
i-pentane	1.31592	5.95E+00	3.10E-01	--	--	--
n-pentane	1.40491	6.36E+00	3.30E-01	--	--	--
n-hexane	0.34780	1.57E+00	8.18E-02	--	--	--
Cyclohexane	0.13841	6.26E-01	3.26E-02	--	--	--
n-heptane	0.05030	2.28E-01	1.18E-02	--	--	--
methylcyclohexane	0.00000	0.00E+00	0.00E+00	--	--	--
2,2,4-trimethylpentan	0.00000	0.00E+00	0.00E+00	--	--	--
benzene	0.02407	1.09E-01	5.66E-03	--	--	--
toluene	0.01277	5.78E-02	3.00E-03	--	--	--
ethylbenzene	0.00013	5.74E-04	2.98E-05	--	--	--
o-xylene	0.00000	0.00E+00	0.00E+00	--	--	--
m-xylene	0.00071	3.21E-03	1.67E-04	--	--	--
p-xylene	0.00013	5.74E-04	2.98E-05	--	--	--
Total VOC	**21.61**	**97.75**	**5.08**	--	--	--
H_2S	**0.0000**	**0.0000**	**0.0000**	--	--	--
Total HAP	**0.39**	**1.74**	**0.091**	--	--	--

[1] This is a representative estimate of the amount of gas vented per blow down event.

Delaware G&P - Red Raider Compressor Station

Compressor Blowdowns

Hours per event: 1

Compressor	Number of Compressors	Volume per Compressor Event (scf/event)	Annual events per Compressor	Annual Release (scf/yr)	Hourly Volume (scf/hr)	Molecular Weight (lb/lb-mol)
Waukesha 16V275GL Compressor Engine	2	1365	104	283920	2730	21
Caterpillar 3612A4 Compressor Engine	6	1365	104	851760	8190	21

	VOC		H_2S		Total HAP	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Waukesha 16V275GL Compressor Engine	32.58	1.69	0.00E+00	0.00E+00	0.58	0.030
Caterpillar 3612A4 Compressor Engine	97.75	5.08	0.00E+00	0.00E+00	1.74	0.091
TOTAL	130.34	6.78	0.000	0.00E+00	2.33	0.121

Delaware G&P - Red Raider Compressor Station

Pipeline Maintenance

Basis of Calculation:
Emissions from pipeline maintenance operations are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions for each Unit (lb/hr) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] * [events per hour (event/hr) / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions for each Unit (tpy) = [Volume of gas in pipe (scf/event)] x [MW of stream

Pipeline Maintenance Emissions

Pipeline Volume Vented =	54,873.54	scf/yr
Molecular Weight of Stream =	21	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
Carbon Dioxide	3.13E-01	9.49E+00	4.74E-03	--	--	--
Hydrogen Sulfide	0.00E+00	0.00E+00	0.00E+00	--	--	--
Nitrogen	1.23E+00	3.72E+01	1.86E-02	--	--	--
Methane	5.99E+01	1.82E+03	9.08E-01	--	--	--
Ethane	1.70E+01	5.14E+02	2.57E-01	--	--	--
Propane	1.14E+01	3.46E+02	1.73E-01	--	--	--
i-butane	2.14E+00	6.48E+01	3.24E-02	--	--	--
n-butane	4.75E+00	1.44E+02	7.19E-02	--	--	--
i-pentane	1.32E+00	3.99E+01	1.99E-02	--	--	--
n-pentane	1.40E+00	4.26E+01	2.13E-02	--	--	--
n-hexane	3.48E-01	1.05E+01	5.27E-03	--	--	--
Cyclohexane	1.38E-01	4.20E+00	2.10E-03	--	--	--
n-heptane	5.03E-02	1.52E+00	7.62E-04	--	--	--
methylcyclohexane	0.00E+00	0.00E+00	0.00E+00	--	--	--
2,2,4-trimethylpentane	0.00E+00	0.00E+00	0.00E+00	--	--	--
benzene	2.41E-02	7.30E-01	3.65E-04	--	--	--
toluene	1.28E-02	3.87E-01	1.94E-04	--	--	--
ethylbenzene	1.27E-04	3.85E-03	1.92E-06	--	--	--
o-xylene	0.00E+00	0.00E+00	0.00E+00	--	--	--
m-xylene	7.11E-04	2.15E-02	1.08E-05	--	--	--
p-xylene	1.27E-04	3.85E-03	1.92E-06	--	--	--
Total VOC	**21.61**	**654.95**	**0.33**	--	--	--
H_2S	**0.00**	**0.000**	**0.00**	--	--	--
Total HAP	**0.39**	**11.69**	**0.006**	--	--	--

[1] This is a representative estimate of the amount of gas vented per blowdown event.

Delaware G&P - Red Raider Compressor Station

Reboiler Maintenance

Basis of Calculation:
Emissions from reboiler maintenance activities are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of Gas Vented (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# Reboilers worked on simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of Gas Vented (scf/event)] x [MW of stream

Reboiler Maintenance Emissions

Estimated Gas Vented per Event [1] =	65	scf/event
Reboilers at Site =	1	units
Reboilers Maintenance Events Occurring Simultaneously =	1	events
Assumed Reboiler Maintenance Duration =	1	hrs/event
Reboiler Maintenance Activities in One Year =	2	events/yr
Molecular Weight of Stream =	21	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
Carbon Dioxide	3.13E-01	1.12E-02	1.12E-05	--	--	--
Hydrogen Sulfide	0.00E+00	0.00E+00	0.00E+00	--	--	--
Nitrogen	1.23E+00	4.41E-02	4.41E-05	--	--	--
Methane	5.99E+01	2.15E+00	2.15E-03	--	--	--
Ethane	1.70E+01	6.09E-01	6.09E-04	--	--	--
Propane	1.14E+01	4.10E-01	4.10E-04	--	--	--
i-butane	2.14E+00	7.68E-02	7.68E-05	--	--	--
n-butane	4.75E+00	1.70E-01	1.70E-04	--	--	--
i-pentane	1.32E+00	4.72E-02	4.72E-05	--	--	--
n-pentane	1.40E+00	5.04E-02	5.04E-05	--	--	--
n-hexane	3.48E-01	1.25E-02	1.25E-05	--	--	--
Cyclohexane	1.38E-01	4.97E-03	4.97E-06	--	--	--
n-heptane	5.03E-02	1.81E-03	1.81E-06	--	--	--
methylcyclohexane	0.00E+00	0.00E+00	0.00E+00	--	--	--
2,2,4-trimethylpentane	0.00E+00	0.00E+00	0.00E+00	--	--	--
benzene	2.41E-02	8.64E-04	8.64E-07	--	--	--
toluene	1.28E-02	4.59E-04	4.59E-07	--	--	--
ethylbenzene	1.27E-04	4.56E-06	4.56E-09	--	--	--
o-xylene	0.00E+00	0.00E+00	0.00E+00	--	--	--
m-xylene	7.11E-04	2.55E-05	2.55E-08	--	--	--
p-xylene	1.27E-04	4.56E-06	4.56E-09	--	--	--
Total VOC	**21.61**	**0.78**	**7.76E-04**	**--**	**--**	**--**
H_2S	**0.00**	**0.00**	**0.00**	**--**	**--**	**--**
Total HAP	**0.39**	**0.014**	**1.38E-05**	**--**	**--**	**--**

[1] This is a representative estimate of the amount of gas vented per reboiler maintenance event.

Delaware G&P - Red Raider Compressor Station

Filter Coalescer Blowdowns

Basis of Calculation:
Emissions from blowdowns are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of blowdown (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of blowdown (scf/event)] x [MW of

Filter Coalescer BlowDown Emissions

Estimated Gas Vented per BlowDown Event [1] =	6,900	scf/event
Units at Site =	1	units
Units Blowndown Simultaneously =	1	units
Assumed BlowDown Duration =	1	hrs/event
Unit BlowDowns in One Year =	2	events/yr
Molecular Weight of Stream =	21	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
Carbon Dioxide	3.13E-01	1.19E+00	1.19E-03	--	--	--
Hydrogen Sulfide	0.00E+00	0.00E+00	0.00E+00	--	--	--
Nitrogen	1.23E+00	4.68E+00	4.68E-03	--	--	--
Methane	5.99E+01	2.28E+02	2.28E-01	--	--	--
Ethane	1.70E+01	6.46E+01	6.46E-02	--	--	--
Propane	1.14E+01	4.36E+01	4.36E-02	--	--	--
i-butane	2.14E+00	8.15E+00	8.15E-03	--	--	--
n-butane	4.75E+00	1.81E+01	1.81E-02	--	--	--
i-pentane	1.32E+00	5.02E+00	5.02E-03	--	--	--
n-pentane	1.40E+00	5.35E+00	5.35E-03	--	--	--
n-hexane	3.48E-01	1.33E+00	1.33E-03	--	--	--
Cyclohexane	1.38E-01	5.28E-01	5.28E-04	--	--	--
n-heptane	5.03E-02	1.92E-01	1.92E-04	--	--	--
methylcyclohexane	0.00E+00	0.00E+00	0.00E+00	--	--	--
2,2,4-trimethylpentane	0.00E+00	0.00E+00	0.00E+00	--	--	--
benzene	2.41E-02	9.17E-02	9.17E-05	--	--	--
toluene	1.28E-02	4.87E-02	4.87E-05	--	--	--
ethylbenzene	1.27E-04	4.84E-04	4.84E-07	--	--	--
o-xylene	0.00E+00	0.00E+00	0.00E+00	--	--	--
m-xylene	7.11E-04	2.71E-03	2.71E-06	--	--	--
p-xylene	1.27E-04	4.84E-04	4.84E-07	--	--	--
Total VOC	**21.61**	**82.36**	**0.082**	**--**	**--**	**--**
H_2S	**0.00**	**0.00**	**0.00**	**--**	**--**	**--**
Total HAP	**0.39**	**1.47**	**0.0015**	**--**	**--**	**--**

[1] This is a representative estimate of the amount of gas vented per blowdown event.

Delaware G&P - Red Raider Compressor Station

Scrubber Blowdown

Basis of Calculation:
Emissions from blowdowns are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of blowdown (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of blowdown (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown at site

Scrubber BlowDown Emissions

Estimated Gas Vented per BlowDown Event [1] =	33,800	scf/event
Units at Site =	5	units
Units Blowndown Simultaneously =	5	units
Assumed BlowDown Duration =	1	hrs/event
Unit BlowDowns in One Year =	6	events/yr
Molecular Weight of Stream =	21	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
Carbon Dioxide	3.13E-01	2.92E+01	1.75E-02	--	--	--
Hydrogen Sulfide	0.00E+00	0.00E+00	0.00E+00	--	--	--
Nitrogen	1.23E+00	1.15E+02	6.88E-02	--	--	--
Methane	5.99E+01	5.59E+03	3.35E+00	--	--	--
Ethane	1.70E+01	1.58E+03	9.50E-01	--	--	--
Propane	1.14E+01	1.07E+03	6.40E-01	--	--	--
i-butane	2.14E+00	2.00E+02	1.20E-01	--	--	--
n-butane	4.75E+00	4.43E+02	2.66E-01	--	--	--
i-pentane	1.32E+00	1.23E+02	7.37E-02	--	--	--
n-pentane	1.40E+00	1.31E+02	7.87E-02	--	--	--
n-hexane	3.48E-01	3.25E+01	1.95E-02	--	--	--
Cyclohexane	1.38E-01	1.29E+01	7.75E-03	--	--	--
n-heptane	5.03E-02	4.70E+00	2.82E-03	--	--	--
methylcyclohexane	0.00E+00	0.00E+00	0.00E+00	--	--	--
2,2,4-trimethylpentane	0.00E+00	0.00E+00	0.00E+00	--	--	--
benzene	2.41E-02	2.25E+00	1.35E-03	--	--	--
toluene	1.28E-02	1.19E+00	7.15E-04	--	--	--
ethylbenzene	1.27E-04	1.18E-02	7.11E-06	--	--	--
o-xylene	0.00E+00	0.00E+00	0.00E+00	--	--	--
m-xylene	7.11E-04	6.63E-02	3.98E-05	--	--	--
p-xylene	1.27E-04	1.18E-02	7.11E-06	--	--	--
Total VOC	**21.61**	**2,017.12**	**1.21**	--	--	--
H_2S	**0.00**	**0.00**	**0.00**	--	--	--
Total HAP	**0.39**	**36.00**	**0.022**	--	--	--

[1] This is a representative estimate of the amount of gas vented per blowdown event.

Delaware G&P - Red Raider Compressor Station

Pump Blowdowns

Basis of Calculation:
Emissions from blowdowns are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of blowdown (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of blowdown (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown at site (units)] x [frequency of events (events/yr/unit)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Pump BlowDown Emissions

Estimated Gas Vented per BlowDown Event [1] =	16	scf/event
Units at Site =	2	units
Units Blowndown Simultaneously =	2	units
Assumed BlowDown Duration =	1	hrs/event
Unit BlowDowns in One Year =	5	events/yr
Molecular Weight of Stream =	21	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
Carbon Dioxide	3.13E-01	5.53E-03	6.92E-06	--	--	--
Hydrogen Sulfide	0.00E+00	0.00E+00	0.00E+00	--	--	--
Nitrogen	1.23E+00	2.17E-02	2.71E-05	--	--	--
Methane	5.99E+01	1.06E+00	1.32E-03	--	--	--
Ethane	1.70E+01	3.00E-01	3.75E-04	--	--	--
Propane	1.14E+01	2.02E-01	2.52E-04	--	--	--
i-butane	2.14E+00	3.78E-02	4.73E-05	--	--	--
n-butane	4.75E+00	8.39E-02	1.05E-04	--	--	--
i-pentane	1.32E+00	2.33E-02	2.91E-05	--	--	--
n-pentane	1.40E+00	2.48E-02	3.10E-05	--	--	--
n-hexane	3.48E-01	6.15E-03	7.68E-06	--	--	--
Cyclohexane	1.38E-01	2.45E-03	3.06E-06	--	--	--
n-heptane	5.03E-02	8.89E-04	1.11E-06	--	--	--
methylcyclohexane	0.00E+00	0.00E+00	0.00E+00	--	--	--
2,2,4-trimethylpentane	0.00E+00	0.00E+00	0.00E+00	--	--	--
benzene	2.41E-02	4.25E-04	5.32E-07	--	--	--
toluene	1.28E-02	2.26E-04	2.82E-07	--	--	--
ethylbenzene	1.27E-04	2.24E-06	2.80E-09	--	--	--
o-xylene	0.00E+00	0.00E+00	0.00E+00	--	--	--
m-xylene	7.11E-04	1.26E-05	1.57E-08	--	--	--
p-xylene	1.27E-04	2.24E-06	2.80E-09	--	--	--
Total VOC	**21.61**	**0.38**	**4.77E-04**	**--**	**--**	**--**
H_2S	**0.00**	**0.00**	**0.00**	**--**	**--**	**--**
Total HAP	**0.39**	**0.007**	**8.52E-06**	**--**	**--**	**--**

[1] This is a representative estimate of the amount of gas vented per blowdown event.

Delaware G&P - Red Raider Compressor Station

Tank Degassing

Basis of Calculation:
Emissions from tank degassing are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of gas vented (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# tank degassing activities occurring simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)] + Clingage volume (scf/event) x Liquid density (lb/scf) / event duration (hr/event) x [# tank degassing activities occurring simultaneously (units)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of gas vented (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# tanks at site (units)] x [frequency of events (events/yr/unit)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)] + Clingage volume (scf/event) x Liquid density (lb/scf) / Frequency of event (events/yr/unit) / 2,000 (lb/ton) x [# tanks at site (units)]

Tank Degassing Emissions - Non-Forced Ventilation

Estimated Gas Vented per Degassing Event =	4,323	scf/event
Number of Tanks =	3	units
Tank Degassing Events Occurring Simultaneously =	3	units
Assumed Degassing Event Duration =	24	hrs/event
Tank Degassing Events in One Year =	4	events/yr
Molecular Weight of Stream =	43	lb/lb-mol
Is Forced Ventilation used?	No	
Control Type =	No	

Clingage-to-vessel Volume		
Clingage volume [1] =	0.51	scf
Clingage thickness [2] =	0.0004	ft
Diameter =	16	ft
Height =	21.5	ft
Liquid Density [1] =	43.00	lb/scf

[1] The roof of the tank is not included in the clingage volume since no liquid will reach the roof. Liquid density is from ProMax for condensate.

[2] Clingage thickness per TCEQ Maintenance, Startup and Shutdown (MSS) Guidance Document for terminals and chemical plants.
http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/mss/mss-guidance.pdf

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
Total VOC	**100**	**127.48**	**0.87**			
Total HAP	**25**	**31.87**	**0.22**			

[1] HAP content is conservatively assumed to be 25% of the vented liquid vapor analysis.

Delaware G&P - Red Raider Compressor Station

Dehydrator Blowdowns

Basis of Calculation:
Emissions from blowdowns are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Estimated blowdown volume (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] / [hour/event] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Estimated blowdown volume (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] * [event/yr] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

The hourly volume is calculated from the sum of the blowdown volumes from each component of the dehydrator (i.e. the contactor, scrubber, flash tank, and filters).

Dehydrator BlowDown Emissions

Estimated Hourly BlowDown Volume [1] =	30,895	scf/event
Number of Units =	1	units
Assumed BlowDown Duration =	1	hr/event
Blowdowns Per Year =	4	event/yr
Molecular Weight of Stream =	21	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
Carbon Dioxide	3.13E-01	5.34E+00	1.07E-02	--	--	--
Hydrogen Sulfide	0.00E+00	0.00E+00	0.00E+00	--	--	--
Nitrogen	1.23E+00	2.10E+01	4.19E-02	--	--	--
Methane	5.99E+01	1.02E+03	2.04E+00	--	--	--
Ethane	1.70E+01	2.89E+02	5.79E-01	--	--	--
Propane	1.14E+01	1.95E+02	3.90E-01	--	--	--
i-butane	2.14E+00	3.65E+01	7.30E-02	--	--	--
n-butane	4.75E+00	8.10E+01	1.62E-01	--	--	--
i-pentane	1.32E+00	2.25E+01	4.49E-02	--	--	--
n-pentane	1.40E+00	2.40E+01	4.79E-02	--	--	--
n-hexane	3.48E-01	5.94E+00	1.19E-02	--	--	--
Cyclohexane	1.38E-01	2.36E+00	4.72E-03	--	--	--
n-heptane	5.03E-02	8.58E-01	1.72E-03	--	--	--
methylcyclohexane	0.00E+00	0.00E+00	0.00E+00	--	--	--
2,2,4-trimethylpentane	0.00E+00	0.00E+00	0.00E+00	--	--	--
benzene	2.41E-02	4.11E-01	8.22E-04	--	--	--
toluene	1.28E-02	2.18E-01	4.36E-04	--	--	--
ethylbenzene	1.27E-04	2.17E-03	4.33E-06	--	--	--
o-xylene	0.00E+00	0.00E+00	0.00E+00	--	--	--
m-xylene	7.11E-04	1.21E-02	2.43E-05	--	--	--
p-xylene	1.27E-04	2.17E-03	4.33E-06	--	--	--
Total VOC	**21.61**	**368.75**	**0.74**	**--**	**--**	**--**
H_2S	**0.00**	**0.00**	**0.00**	**--**	**--**	**--**
Total HAP	**0.39**	**6.58**	**0.013**	**--**	**--**	**--**

Stream Information: Dehydrator Blowdowns

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.

Documentation used to support calculation in this permit application

- Current version of AP-42 located at: http://www.epa.gov/ttn/chief/ap42/index.html. Specific sections used in this application:
  - Subsection 1.4 – Natural Gas External Combustion Sources-Natural Gas (Table 1.4-1, 1.4-2 & 1.4-3) **[Units ECD-1 and RBL-1]**
  - Subsection 3.2 – Natural Gas-Fired Reciprocating Engines (Table 3.2-2) **[Units ENG-1 through ENG-8]**
  - Subsection 13.2.2 – Unpaved Roads (Table 13.2.2-2) **[Unit HAUL]**
- Compressor Manufacturer Specifications **[Units ENG-1 through ENG-8]**
- TCEQ TNRCC RG-109 Flare Guidance documentation **[Unit ECD-1]**
- Manley Gas Testing, Inc.'s Extended Gas analysis. **[Unit DEHY-1 and inlet gas analysis for ProMax input]**
- 40 CFR Subpart C (Table C-1 and C-2) **[Units ENG-1 through ENG-8, RBL-1, and ECD-1]**

ICE CATALYST SIZING PROGRAM

rev 2.1.1

Report Date: 4/18/2023

Customer	Enlink Midstream	Housing	MCC3-G10-3430C3-15509
Sales Person	KW	Element	MCCZ-7140-3-400
Project	Red Raider/Reveille	Contact	Travis Burke
Engine Name	Waukesha 16V275GL 5000 BHP @ 1000 RPM		

Engine Power	5000.0	BHP	ACFM	32101.0	CU. FT/MIN	Exhaust O2	6.1	%
Exhaust Mass Flow	55158.0	LBS/HR	ACFH	1926060	CU. FT/HR	Exhaust CO2	6.4	%
Process Temperature	864.0	F	SCFM	12627.5	CU. FT/MIN	Exhaust H2O	12.2	%
Exhaust Pressure	14.5	PSI	SCFH	757650	CU. FT/HR	Exhaust N2	75.3	%
Exhaust Density	0.0286	LBS/FT^3	Std Temp	68.0	F	Max Pressure Drop	12.0	in wc
Molecular Weight	28.06	AMU	Std Pressure	14.6959	PSI	Propane in Fuel	5.57	%

ACS Part Name	RN15.400X24.750X3.500-400				
OEM Part Name	MCCZ-7140-3-400				
Type	Propane Oxidation	Layers	1		
Geometry	Rectangular	Modules/Layer	6	Cell Count	400cpsi
X	15.400in	Guard Bed	No	Depth	3.500in
Y	24.750in				

Open Area	14.250	ft^2	Part Volume	0.693	ft^3	Part Weight	50	lbs
Linear Velocity	2253	ft/min	Total Volume	4.156	ft^3	Total Weight	303	lbs
Pressure Drop	4.0	in wc	Space Velocity	182292	GHSV			

Inlet Emissions

	g/bhp-hr	lb/hr	tons/year	ppmv	ppmvd	ppmvd%O2
NOx	0.300	3.31	14.49	36.56	41.63	17.67
CO	2.380	26.24	114.99	476.35	542.45	230.25
H2CO	0.280	3.09	13.53	52.27	59.52	25.27
VOC+H2CO	1.020	11.24	49.28	146.34	166.65	70.74

Target Emissions

	min %DRE	g/bhp-hr	lb/hr	tons/year	ppmv	ppmvd	ppmvd%O2
NOx	0.00	<0.300	<3.31	<14.49	<36.56	<41.63	<17.67
CO	75.63	<0.580	<6.39	<28.02	<116.09	<132.19	<56.11
H2CO	91.79	<0.023	<0.25	<1.11	<4.29	<4.89	<2.08
VOC+H2CO	36.96	<0.643	<7.09	<31.07	<83.11	<94.64	<40.17

Emissions with Catalyst

	%DRE	g/bhp-hr	lb/hr	tons/year	ppmv	ppmvd	ppmvd%O2
NOx	0.00	<0.300	<3.31	<14.49	<36.56	<41.63	<17.67
CO	75.63	<0.580	<6.39	<28.02	<116.09	<132.19	<56.11
H2CO	91.79	<0.023	<0.25	<1.11	<4.29	<4.89	<2.08
VOC+H2CO	36.96	<0.643	<7.09	<31.07	<83.11	<94.64	<40.17

Safety Value: 2 VOC Molecular Weight: 44.1 O2 Reference Value: 15

ICE CATALYST SIZING PROGRAM

rev 2.1.1

Report Date: 4/18/2023

Customer	Enlink Midstream	Housing	MCC3-G10-3430C3-15509
Sales Person	KW	Element	MCCZ-7140-3-400
Project	Red Raider/Reveille	Contact	Travis Burke
Engine Name	Caterpillar G3612 A4 Caterpillar G3612 A4 3750 BHP @ 1000 RPM		

Engine Power	3750.0	BHP	ACFM	23872.0	CU. FT/MIN	Exhaust O2	7.7	%
Exhaust Mass Flow	42986.0	LBS/HR	ACFH	1432320	CU. FT/HR	Exhaust CO2	6.6	%
Process Temperature	820.0	F	SCFM	9713.3	CU. FT/MIN	Exhaust H2O	9.4	%
Exhaust Pressure	14.5	PSI	SCFH	582800	CU. FT/HR	Exhaust N2	76.3	%
Exhaust Density	0.0300	LBS/FT^3	Std Temp	68.0	F	Max Pressure Drop	12.0	in wc
Molecular Weight	28.43	AMU	Std Pressure	14.6959	PSI	Propane in Fuel	5.57	%

ACS Part Name	RN15.400X24.750X3.500-400				
OEM Part Name	MCCZ-7140-3-400				
Type	Propane Oxidation	Layers	1		
Geometry	Rectangular	Modules/Layer	5	Cell Count	400cpsi
X	15.400in	Guard Bed	No	Depth	3.500in
Y	24.750in				

Open Area	11.875	ft^2	Part Volume	0.693	ft^3	Part Weight	50	lbs
Linear Velocity	2010	ft/min	Total Volume	3.464	ft^3	Total Weight	252	lbs
Pressure Drop	3.5	in wc	Space Velocity	168267	GHSV			

Inlet Emissions

	g/bhp-hr	lb/hr	tons/year	ppmv	ppmvd	ppmvd%O2
NOx	0.300	2.48	10.87	35.64	39.36	18.73
CO	3.050	25.22	110.52	595.20	657.22	312.71
H2CO	0.190	1.57	6.88	34.58	38.19	18.17
VOC+H2CO	1.130	9.34	40.95	151.09	166.84	79.38

Target Emissions

	min %DRE	g/bhp-hr	lb/hr	tons/year	ppmv	ppmvd	ppmvd%O2
NOx	0.00	<0.300	<2.48	<10.87	<35.64	<39.36	<18.73
CO	80.98	<0.580	<4.80	<21.02	<113.19	<124.98	<59.47
H2CO	87.89	<0.023	<0.19	<0.83	<4.19	<4.62	<2.20
VOC+H2CO	43.10	<0.643	<5.32	<23.30	<81.03	<89.48	<42.57

Emissions with Catalyst

	%DRE	g/bhp-hr	lb/hr	tons/year	ppmv	ppmvd	ppmvd%O2
NOx	0.00	<0.300	<2.48	<10.87	<35.64	<39.36	<18.73
CO	80.98	<0.580	<4.80	<21.02	<113.19	<124.98	<59.47
H2CO	87.89	<0.023	<0.19	<0.83	<4.19	<4.62	<2.20
VOC+H2CO	43.10	<0.643	<5.32	<23.30	<81.03	<89.48	<42.57

Safety Value: 2 VOC Molecular Weight: 44.1 O2 Reference Value: 15

G3612

GAS COMPRESSION APPLICATION

GAS ENGINE SITE SPECIFIC TECHNICAL DATA

CATERPILLAR®

ENGINE SPEED (rpm):	1000	RATING STRATEGY:	STANDARD
COMPRESSION RATIO:	7.6	RATING LEVEL:	CONTINUOUS
AFTERCOOLER TYPE:	SCAC	FUEL SYSTEM:	GAV
AFTERCOOLER - STAGE 2 INLET (°F):	130		WITH AIR FUEL RATIO CONTROL
AFTERCOOLER - STAGE 1 INLET (°F):	174	**SITE CONDITIONS:**	
JACKET WATER OUTLET (°F):	190	FUEL:	Nat Gas
ASPIRATION:	TA	FUEL PRESSURE RANGE(psig): (See note 1)	58.0-70.3
COOLING SYSTEM:	JW+1AC, OC+2AC	FUEL METHANE NUMBER:	84.7
CONTROL SYSTEM:	ADEM4	FUEL LHV (Btu/scf):	905
EXHAUST MANIFOLD:	DRY	ALTITUDE(ft):	500
COMBUSTION:	LOW EMISSION	INLET AIR TEMPERATURE(°F):	77
NOx EMISSION LEVEL (g/bhp-hr NOx):	0.3	STANDARD RATED POWER:	3750 bhp@1000rpm
SET POINT TIMING:	18		

				MAXIMUM RATING	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE		
RATING		**NOTES**	**LOAD**	**100%**	**100%**	**75%**	**50%**
ENGINE POWER	(WITHOUT FAN)	(2)	bhp	3750	3750	2813	1875
INLET AIR TEMPERATURE			°F	77	77	77	77
ENGINE DATA							
FUEL CONSUMPTION (LHV)		(3)	Btu/bhp-hr	6800	6800	7003	7465
FUEL CONSUMPTION (HHV)		(3)	Btu/bhp-hr	7543	7543	7768	8280
AIR FLOW (@inlet air temp, 14.7 psia)	(WET)	(4)(5)	ft3/min	9251	9251	7013	4802
AIR FLOW	(WET)	(4)(5)	lb/hr	41017	41017	31095	21293
FUEL FLOW (60ºF, 14.7 psia)			scfm	470	470	363	258
INLET MANIFOLD PRESSURE		(6)	in Hg(abs)	99.2	99.2	75.7	53.1
EXHAUST TEMPERATURE - ENGINE OUTLET		(7)	°F	840	840	894	957
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia)	(WET)	(8)(5)	ft3/min	23936	23936	18904	13581
EXHAUST GAS MASS FLOW	(WET)	(8)(5)	lb/hr	42304	42304	32089	21999
EMISSIONS DATA - ENGINE OUT							
NOx (as NO2)		(9)(10)	g/bhp-hr	0.30	0.30	0.30	0.30
CO		(9)(10)	g/bhp-hr	2.50	2.50	2.50	2.50
THC (mol. wt. of 15.84)		(9)(10)	g/bhp-hr	4.49	4.49	4.65	4.67
NMHC (mol. wt. of 15.84)		(9)(10)	g/bhp-hr	0.42	0.42	0.43	0.43
NMNEHC (VOCs) (mol. wt. of 15.84)		(9)(10)(11)	g/bhp-hr	0.28	0.28	0.29	0.29
HCHO (Formaldehyde)		(9)(10)	g/bhp-hr	0.19	0.19	0.19	0.21
CO2		(9)(10)	g/bhp-hr	423	423	438	468
EXHAUST OXYGEN		(9)(12)	% DRY	11.5	11.5	11.3	10.9
HEAT REJECTION							
HEAT REJ. TO JACKET WATER (JW)		(13)	Btu/min	40888	40888	32639	27887
HEAT REJ. TO ATMOSPHERE		(13)	Btu/min	17674	17674	16883	13955
HEAT REJ. TO LUBE OIL (OC)		(13)	Btu/min	18701	18701	17070	15164
HEAT REJ. TO A/C - STAGE 1 (1AC)		(13)(14)	Btu/min	30425	30425	14447	2708
HEAT REJ. TO A/C - STAGE 2 (2AC)		(13)(14)	Btu/min	7352	7352	5372	3527

COOLING SYSTEM SIZING CRITERIA			
TOTAL JACKET WATER CIRCUIT (JW+1AC)	(14)(15)	Btu/min	76923
TOTAL STAGE 2 AFTERCOOLER CIRCUIT (OC+2AC)	(14)(15)	Btu/min	30160
A cooling system safety factor of 0% has been added to the cooling system sizing criteria.			

CONDITIONS AND DEFINITIONS

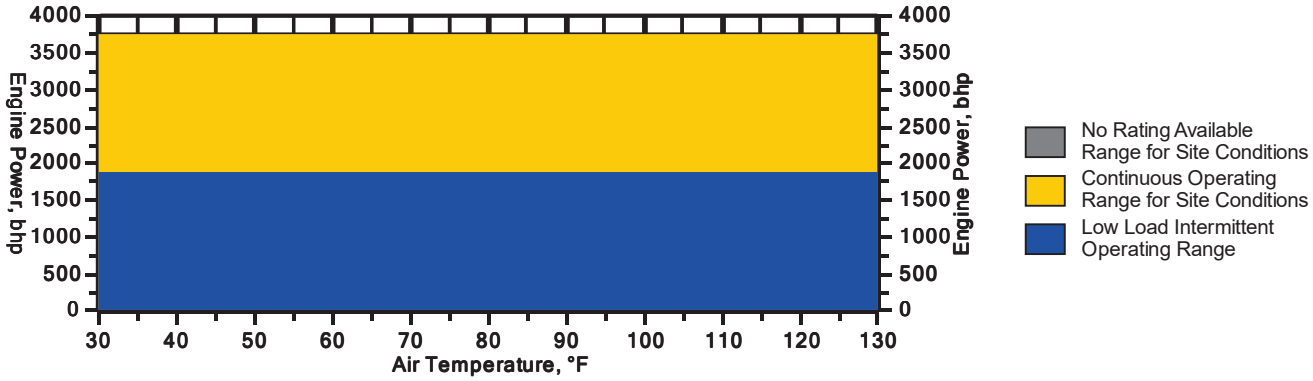
Engine rating obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site inlet air temperature. 100% rating at maximum inlet air temperature is the maximum engine capability for the specified fuel at site altitude and maximum site inlet air temperature. Maximum rating is the maximum capability at the specified aftercooler inlet temperature for the specified fuel at site altitude and reduced inlet air temperature. Lowest load point is the lowest continuous duty operating load allowed. No overload permitted at rating shown.

For notes information consult page three.

PREPARED BY:
Data generated by Gas Engine Rating Pro Version 6.09.01
Ref. Data Set EM1418-05-001, Printed 14Jan2019

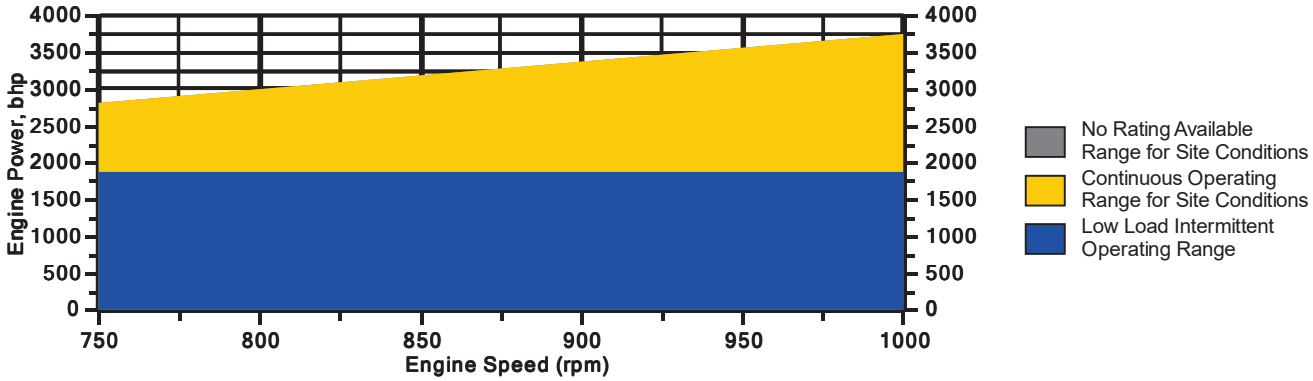
Engine Power vs. Inlet Air Temperature

Data represents temperature sweep at 500 ft and 1000 rpm



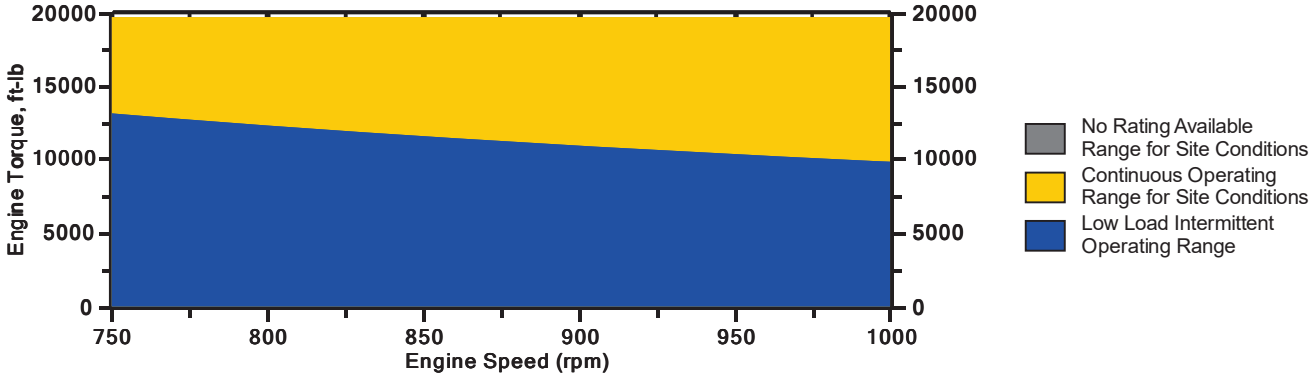
Engine Power vs. Engine Speed

Data represents speed sweep at 500 ft and 77 ºF



Engine Torque vs. Engine Speed

Data represents speed sweep at 500 ft and 77 ºF



Note: At site conditions of 500 ft and 77°F inlet air temp., constant torque can be maintained down to 750 rpm. The minimum speed for loading at these conditions is 750 rpm.

NOTES

1. Fuel pressure range specified is to the engine gas shutoff valve (GSOV). Additional fuel train components should be considered in pressure and flow calculations.

2. Engine rating is with two engine driven water pumps. Tolerance is ± 3% of full load.

3. Fuel consumption tolerance is ± 2.5% of full load data.

4. Air flow value is on a 'wet' basis. Flow is a nominal value with a tolerance of ± 5 %.

5. Inlet and Exhaust Restrictions must not exceed A&I limits based on full load flow rates from the standard technical data sheet.

6. Inlet manifold pressure is a nominal value with a tolerance of ± 5 %.

7. Exhaust temperature is a nominal value with a tolerance of (+)63°F, (-)54°F.

8. Exhaust flow value is on a "wet" basis. Flow is a nominal value with a tolerance of ± 6 %.

9. Emissions data is at engine exhaust flange prior to any after treatment.

10. Values listed are higher than nominal levels to allow for instrumentation, measurement, and engine-to-engine variations. They indicate the maximum values expected under steady state conditions. Fuel methane number cannot vary more than ± 3. THC, NMHC, and NMNEHC do not include aldehydes. An oxidation catalyst may be required to meet Federal, State or local CO or HC requirements.

11. VOCs - Volatile organic compounds as defined in US EPA 40 CFR 60, subpart JJJJ

12. Exhaust Oxygen level is the result of adjusting the engine to operate at the specified NOx level. Tolerance is ± 0.5.

13. Heat rejection values are nominal. Tolerances, based on treated water, are ± 10% for jacket water circuit, ± 50% for radiation, ± 20% for lube oil circuit, and ± 5% for aftercooler circuit.

14. Aftercooler heat rejection includes an aftercooler heat rejection factor for the site elevation and inlet air temperature specified. Aftercooler heat rejection values at part load are for reference only. Do not use part load data for heat exchanger sizing.

15. Cooling system sizing criteria are maximum circuit heat rejection for the site, with applied tolerances.

Constituent	Abbrev	Mole %	Norm
Water Vapor	H2O	0.0000	0.0000
Methane	CH4	92.2700	92.2700
Ethane	C2H6	2.5000	2.5000
Propane	C3H8	0.5000	0.5000
Isobutane	iso-C4H1O	0.0000	0.0000
Norbutane	nor-C4H1O	0.2000	0.2000
Isopentane	iso-C5H12	0.0000	0.0000
Norpentane	nor-C5H12	0.1000	0.1000
Hexane	C6H14	0.0500	0.0500
Heptane	C7H16	0.0000	0.0000
Nitrogen	N2	3.4800	3.4800
Carbon Dioxide	CO2	0.9000	0.9000
Hydrogen Sulfide	H2S	0.0000	0.0000
Carbon Monoxide	CO	0.0000	0.0000
Hydrogen	H2	0.0000	0.0000
Oxygen	O2	0.0000	0.0000
Helium	HE	0.0000	0.0000
Neopentane	neo-C5H12	0.0000	0.0000
Octane	C8H18	0.0000	0.0000
Nonane	C9H20	0.0000	0.0000
Ethylene	C2H4	0.0000	0.0000
Propylene	C3H6	0.0000	0.0000
TOTAL (Volume %)		100.0000	100.0000

Fuel Makeup:	Nat Gas
Unit of Measure:	English

Calculated Fuel Properties

Caterpillar Methane Number:	84.7
Lower Heating Value (Btu/scf):	905
Higher Heating Value (Btu/scf):	1004
WOBBE Index (Btu/scf):	1168
THC: Free Inert Ratio:	21.83
Total % Inerts (% N2, CO2, He):	4.38%
RPC (%) (To 905 Btu/scf Fuel):	100%
Compressibility Factor:	0.998
Stoich A/F Ratio (Vol/Vol):	9.45
Stoich A/F Ratio (Mass/Mass):	15.75
Specific Gravity (Relative to Air):	0.600
Fuel Specific Heat Ratio (K):	1.313

CONDITIONS AND DEFINITIONS

Caterpillar Methane Number represents the knock resistance of a gaseous fuel. It should be used with the Caterpillar Fuel Usage Guide for the engine and rating to determine the rating for the fuel specified. A Fuel Usage Guide for each rating is included on page 2 of its standard technical data sheet.

RPC always applies to naturally aspirated (NA) engines, and turbocharged (TA or LE) engines only when they are derated for altitude and ambient site conditions.

Project specific technical data sheets generated by the Caterpillar Gas Engine Rating Pro program take the Caterpillar Methane Number and RPC into account when generating a site rating.

Fuel properties for Btu/scf calculations are at 60F and 14.696 psia.

Caterpillar shall have no liability in law or equity, for damages, consequently or otherwise, arising from use of program and related material or any part thereof.

FUEL LIQUIDS

Field gases, well head gases, and associated gases typically contain liquid water and heavy hydrocarbons entrained in the gas. To prevent detonation and severe damage to the engine, hydrocarbon liquids must not be allowed to enter the engine fuel system. To remove liquids, a liquid separator and coalescing filter are recommended, with an automatic drain and collection tank to prevent contamination of the ground in accordance with local codes and standards.

To avoid water condensation in the engine or fuel lines, limit the relative humidity of water in the fuel to 80% at the minimum fuel operating temperature.

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

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

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from $lb/10^6$ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

[b] Expressed as NO_2. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_X emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_X emission factor.

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

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

Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
CO_2[b]	120,000	A
Lead	0.0005	D
N_2O (Uncontrolled)	2.2	E
N_2O (Controlled-low-NO_X burner)	0.64	E
PM (Total)[c]	7.6	D
PM (Condensable)[c]	5.7	D
PM (Filterable)[c]	1.9	B
SO_2[d]	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $lb/10^6$ scf to 1b/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

[b] Based on approximately 100% conversion of fuel carbon to CO_2. $CO_2[lb/10^6 \text{ scf}] = (3.67)(CON)(C)(D)$, where CON = fractional conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.76), and D = density of fuel, 4.2×10^4 $lb/10^6$ scf.

[c] All PM (total, condensible, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM_{10}, $PM_{2.5}$ or PM_1 emissions. Total PM is the sum of the filterable PM and condensible PM. Condensible PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

[d] Based on 100% conversion of fuel sulfur to SO_2. Assumes sulfur content is natural gas of 2,000 grains/10^6 scf. The SO_2 emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO_2 emission factor by the ratio of the site-specific sulfur content (grains/10^6 scf) to 2,000 grains/10^6 scf.

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

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

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

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

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $lb/10^6$ scf to lb/MMBtu, divide by 1,020. Emission Factors preceeded with a less-than symbol are based on method detection limits.

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

[c] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[d] The sum of individual organic compounds may exceed the VOC and TOC emission factors due to differences in test methods and the availability of test data for each pollutant.

Table 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

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES
(Continued)

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
Acenaphthylene[k]	5.53 E-06	C
Acetaldehyde[k,l]	8.36 E-03	A
Acrolein[k,l]	5.14 E-03	A
Benzene[k]	4.40 E-04	A
Benzo(b)fluoranthene[k]	1.66 E-07	D
Benzo(e)pyrene[k]	4.15 E-07	D
Benzo(g,h,i)perylene[k]	4.14 E-07	D
Biphenyl[k]	2.12 E-04	D
Butane	5.41 E-04	D
Butyr/Isobutyraldehyde	1.01 E-04	C
Carbon Tetrachloride[k]	<3.67 E-05	E
Chlorobenzene[k]	<3.04 E-05	E
Chloroethane	1.87 E-06	D
Chloroform[k]	<2.85 E-05	E
Chrysene[k]	6.93 E-07	C
Cyclopentane	2.27 E-04	C
Ethane	1.05 E-01	C
Ethylbenzene[k]	3.97 E-05	B
Ethylene Dibromide[k]	<4.43 E-05	E
Fluoranthene[k]	1.11 E-06	C
Fluorene[k]	5.67 E-06	C
Formaldehyde[k,l]	5.28 E-02	A
Methanol[k]	2.50 E-03	B
Methylcyclohexane	1.23 E-03	C
Methylene Chloride[k]	2.00 E-05	C
n-Hexane[k]	1.11 E-03	C
n-Nonane	1.10 E-04	C

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES
(Continued)

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
n-Octane	3.51 E-04	C
n-Pentane	2.60 E-03	C
Naphthalene[k]	7.44 E-05	C
PAH[k]	2.69 E-05	D
Phenanthrene[k]	1.04 E-05	D
Phenol[k]	2.40 E-05	D
Propane	4.19 E-02	C
Pyrene[k]	1.36 E-06	C
Styrene[k]	<2.36 E-05	E
Tetrachloroethane[k]	2.48 E-06	D
Toluene[k]	4.08 E-04	B
Vinyl Chloride[k]	1.49 E-05	C
Xylene[k]	1.84 E-04	B

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

[b] Emission factors were calculated in units of (lb/MMBtu) based on procedures in EPA Method 19. To convert from (lb/MMBtu) to (lb/10^6 scf), multiply by the heat content of the fuel. If the heat content is not available, use 1020 Btu/scf. To convert from (lb/MMBtu) to (lb/hp-hr) use the following equation:

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

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

[d] Based on 99.5% conversion of the fuel carbon to CO_2. CO_2 [lb/MMBtu] = (3.67)(%CON)(C)(D)(1/h), where %CON = percent conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.75), D = density of fuel, 4.1 E+04 lb/10^6 scf, and

Table 13.2.2-2. CONSTANTS FOR EQUATIONS 1a AND 1b

Constant	Industrial Roads (Equation 1a)			Public Roads (Equation 1b)		
	PM-2.5	PM-10	PM-30*	PM-2.5	PM-10	PM-30*
k (lb/VMT)	0.15	1.5	4.9	0.18	1.8	6.0
a	0.9	0.9	0.7	1	1	1
b	0.45	0.45	0.45	-	-	-
c	-	-	-	0.2	0.2	0.3
d	-	-	-	0.5	0.5	0.3
Quality Rating	B	B	B	B	B	B

*Assumed equivalent to total suspended particulate matter (TSP)
"-" = not used in the emission factor equation

Table 13.2.2-2 also contains the quality ratings for the various size-specific versions of Equation 1a and 1b. The equation retains the assigned quality rating, if applied within the ranges of source conditions, shown in Table 13.2.2-3, that were tested in developing the equation:

Table 13.2.2-3. RANGE OF SOURCE CONDITIONS USED IN DEVELOPING EQUATION 1a AND 1b

Emission Factor	Surface Silt Content, %	Mean Vehicle Weight		Mean Vehicle Speed		Mean No. of Wheels	Surface Moisture Content, %
		Mg	ton	km/hr	mph		
Industrial Roads (Equation 1a)	1.8-25.2	1.8-260	2-290	8-69	5-43	4-17[a]	0.03-13
Public Roads (Equation 1b)	1.8-35	1.4-2.7	1.5-3	16-88	10-55	4-4.8	0.03-13

[a] See discussion in text.

As noted earlier, the models presented as Equations 1a and 1b were developed from tests of traffic on unpaved surfaces. Unpaved roads have a hard, generally nonporous surface that usually dries quickly after a rainfall or watering, because of traffic-enhanced natural evaporation. (Factors influencing how fast a road dries are discussed in Section 13.2.2.3, below.) The quality ratings given above pertain to the mid-range of the measured source conditions for the equation. A higher mean vehicle weight and a higher than normal traffic rate may be justified when performing a worst-case analysis of emissions from unpaved roads.

The emission factors for the exhaust, brake wear and tire wear of a 1980's vehicle fleet (*C*) was obtained from EPA's MOBILE6.2 model [23]. The emission factor also varies with aerodynamic size range

October 2000
RG-109 (Draft)

Air Permit Technical Guidance for Chemical Sources:

Flares and Vapor Oxidizers

printed on recycled paper

Air Permits Division

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Waste Stream	Destruction/Removal Efficiency (DRE)		
VOC	98 percent (generic) 99 percent for compounds containing no more than 3 carbons that contain no elements other than carbon and hydrogen in addition to the following compounds: methanol, ethanol, propanol, ethylene oxide and propylene oxide		
H_2S	98 percent		
NH_3	case by case		
CO	case by case		
Air Contaminants	**Emission Factors**		
thermal NO_x	steam-assist:	high Btu	0.0485 lb/MMBtu
		low Btu	0.068 lb/MMBtu
	other:	high Btu	0.138 lb/MMBtu
		low Btu	0.0641 lb/MMBtu
fuel NO_x	NO_x is 0.5 wt percent of inlet NH_3, other fuels case by case		
CO	steam-assist:	high Btu	0.3503 lb/MMBtu
		low Btu	0.3465 lb/MMBtu
	other:	high Btu	0.2755 lb/MMBtu
		low Btu	0.5496 lb/MMBtu
PM	none, required to be smokeless		
SO_2	100 percent S in fuel to SO_2		

*The only exeption ot this is if inorganics might be emitted from the flare. In the case of landfills, the AP-42 PM factor may be used. In other cases, the emissions should be based on the composition of the waste stream routed to the flare.

MANLEY GAS TESTING, INC.

P.O. DRAWER 193 ODESSA, TEXAS 79760
OFFICE(432)367-3024 FAX(432)367-1166 E-MAIL: MANLEYGAST@AOL.COM

CHARGE..... 166 - 0 - 0 DATE SAMPLED..... 01-18-23
RECORD NO ... 19
TEST NUMBER.. 26807 DATE RUN 01-20-23

METER NUMBER ...
A SAMPLE OF ... CORRAL CONDENSATE
RECEIVED FROM .. ENLINK PERMIAN LLC.
LOCATION ..... FT. WORTH TEXAS

PRESSURE ..... 10 PSIG TEMPERATURE ..... 58 F

FRACTIONAL ANALYSIS
CALCULATED @ 14.696 PSIA AND 60F

	MOLE%	LIQUID%	WEIGHT%
NITROGEN.....	0.00	0.00	0.00
CARBON DIOXIDE.	0.00	0.00	0.00
METHANE.....	0.17	0.07	0.03
ETHANE.....	0.44	0.29	0.15
PROPANE.....	1.72	1.15	0.85
ISO-BUTANE.....	1.00	0.79	0.65
NOR-BUTANE.....	4.08	3.14	2.67
ISO-PENTANE....	4.32	3.83	3.50
NOR-PENTANE....	7.56	6.64	6.12
HEXANES+	80.71	84.09	86.03
	100.00	100.00	100.00

TOTAL SP. GRAVITY.... 0.6848
TOTAL VAPOR PRESS.. 21.939
TOTAL MOLECULAR WT.. 89.082

** HEXANES+ CALCULATIONS **

SP. GRAVITY C6+ .. 0.7006 VAPOR PRESS C6+ .. 2.208 CF/GAL C6+ .. 23.341
MOLECULAR WT C6+. 94.958 ..... LB/GAL C6+ .. 5.841

ANALYSIS BASED ON GPA STANDARDS 2177-20 & 2145-16

DISTRIBUTION / REMARKS :

T. LEBLANC / B. BROWN / S.TIRMZI / A. ORTIZ

RUN BY: K.CASWELL APPROVED KC [1]

R

MANLEY GAS TESTING INC.

120 DOCK ROAD - ODESSA, TEXAS-432-367-3024

A SAMPLE OF CORRAL CONDENSATE (1/18/23)

CAPILLARY EXTENDED
C-6+ ANALYSIS
(NORMALIZED TO 100%)

COMPONENT	MOL%	LIQ%	WT%
NEOHEXANE	0.24	0.24	0.22
2,3DMC4+CYC5	1.33	1.09	1.05
2MPENTANE	7.56	7.52	6.86
3MPENTANE	4.41	4.32	4.00
N-HEXANE	13.79	13.57	12.50
2,2 DMPENTANE	0.00	0.00	0.00
MCYCLOPENTANE	6.90	5.86	6.12
2,4 DMPENTANE	0.05	0.06	0.06
2,2,3 TMBUTANE	0.00	0.00	0.00
BENZENE	1.65	1.11	1.36
3,3 DMPENTANE	0.12	0.13	0.13
CYCLOHEXANE	9.18	7.49	8.13
2MHEXANE	3.97	4.42	4.18
2,3 DMPENTANE	0.99	1.07	1.04
3MHEXANE	5.86	6.44	6.18
DIMCYCPENTANES(GROUPED)	4.52	4.52	4.66
N-HEPTANE	8.48	9.37	8.94
MCYCLOHEXANE	12.54	12.08	12.96
2,2DMHEXANE	1.01	1.25	1.22
2,3,3TMPENTANE	0.00	0.00	0.00
TOLUENE	3.58	2.88	3.47
2,3DMHEXANE	0.31	0.38	0.37
2M3EPENTANE	0.00	0.00	0.00
2MHEPTANE	3.53	4.35	4.24
4MHEPTANE	0.15	0.18	0.18
3,4DMHEXANE	0.00	0.00	0.00
3MHEPTANE	1.62	1.98	1.95
TRIMCYCPENTANES(GROUPED)	0.27	0.29	0.31
DIMCYCHEXANES(GROUPED)	2.50	2.77	2.95
N-OCTANE	1.54	1.89	1.85
2,3,5TRIMHEXANE	0.30	0.41	0.41
2,2,4TRIMHEXANE	0.03	0.03	0.03
2,2DIMHEPTANE	0.01	0.02	0.02
2,2,3TRIMHEXANE	0.05	0.06	0.06
2,5DIMHEPTANE	0.00	0.00	0.00
I-NONANE	0.00	0.00	0.00
2,4DIMHEPTANE	0.00	0.00	0.00
E-CYCHEXANE	0.47	0.51	0.56
3,3DIMHEPTANE	0.18	0.24	0.25
2,6DIMHEPTANE	0.06	0.08	0.08
E-BENZENE	0.09	0.08	0.10
2,3DIMHEPTANE	0.03	0.04	0.04
M-XYLENE	0.65	0.60	0.72
P-XYLENE	0.13	0.12	0.14
3,4DIMHEPTANE	0.12	0.16	0.16
3EHEPTANE	0.03	0.04	0.05

MANLEY GAS TESTING INC.
120 DOCK ROAD - ODESSA, TEXAS-432-367-3024

A SAMPLE OF CORRAL CONDENSATE (1/18/23)

CAPILLARY EXTENDED
C-6+ ANALYSIS
(NORMALIZED TO 100%)

4MOCTANE	0.10	0.13	0.13
3MOCTANE	0.04	0.06	0.06
O-XYLENE	0.07	0.07	0.08
IC4CYCPENTANE	0.03	0.04	0.04
N-NONANE	0.18	0.24	0.24
I-DECANE	0.04	0.05	0.05
1E1MCYC6	0.05	0.06	0.06
IC3BENZENE	0.04	0.04	0.05
2,3DMOCTANE	0.20	0.29	0.30
3EOCTANE	0.33	0.48	0.50
NC4CYCC6	0.05	0.06	0.07
NC3BENZENE	0.02	0.02	0.02
M+P E-TOLUENE	0.03	0.03	0.04
O-E-TOLUENE	0.06	0.07	0.08
2,2DMOCTANE	0.16	0.23	0.23
TERTBUTYLBENZENE	0.03	0.04	0.05
1,3,5TMBENZENE	0.01	0.01	0.01
3,6DMOCTANE	0.03	0.04	0.04
IC4BENZENE	0.05	0.06	0.07
N-DECANE	0.02	0.04	0.04
UNKNOWN C-6'S	0.00	0.00	0.00
UNKNOWN C-7'S	0.00	0.00	0.00
UNKNOWN C-8'S	0.03	0.04	0.04
UNKNOWN C-9'S	0.16	0.22	0.22
UNK C10'S THRU C14'S	0.02	0.03	0.03
UNK C15'S THRU C16'S	0.00	0.00	0.00
UNK C17'S THRU C20'S	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00

COMPONENT GROUPINGS (PARAFFINS-NAPTHENES-AROMATICS)

	MOL%	LIQ%	WT%
TOTAL C-6'S	45.06	41.20	40.24
TOTAL C-7'S	40.11	40.97	41.62
TOTAL C-8'S	12.37	14.51	14.71
TOTAL C-9'S	1.53	2.00	2.05
TOTAL C-10'S	0.91	1.29	1.35
TOTAL C-11 THRU C-14	0.02	0.03	0.03
TOTAL C-15 THRU C-16	0.00	0.00	0.00
TOTAL C-17 THRU C-20	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00

SP. GRAV. C6+ = 0.7230
MOL. WT. C6+ = 95.030
GAL/LB. C6+ = 15.800
CF/GAL. C6+ = 24.139
LB/GAL. C6+ = 6.028

MOL% 6+ AROMATICS = 6.41

MANLEY GAS TESTING, INC.

P.O. DRAWER 193 ODESSA, TEXAS 79760
OFFICE(432)367-3024 FAX(432)367-1166 E-MAIL: MANLEYGAST@AOL.COM

CHARGE..... 23 - 5319
REC. NO. 0
TEST NUMBER.. 61221
SAMPLE TYPE.. SPOT

DATE SAMPLED..... 01-18-23
DATE RUN..... 01-19-23

STATION NO. ...
PRODUCER ..... ENLINK
SAMPLE NAME.... CORRAL CANYON BEFORE DEHY
RECEIVED FROM.. ENLINK MIDSTREAM
LOCATION ..... MIDLAND TEXAS

FLOWING PRESSURE ..... 1053 PSIG

FLOWING TEMPERATURE ..... 58 F

SAMPLED BY: 182

CYLINDER NO. .. MGT-030

* FRACTIONAL ANALYSIS
CALCULATED @ 14.650 PSIA AND 60F

	MOL%	GPM (REAL)
HYDROGEN SULFIDE...	0.0000	
NITROGEN.....	0.9174	
CARBON DIOXIDE.....	0.1488	
METHANE.....	78.0879	
ETHANE.....	11.7966	3.148
PROPANE.....	5.4211	1.490
ISO-BUTANE.....	0.7697	0.251
NOR-BUTANE.....	1.7082	0.537
ISO-PENTANE.....	0.3815	0.140
NOR-PENTANE.....	0.4073	0.148
HEXANES	0.2989	0.130
HEPTANES + ...	0.0626	0.027
TOTALS	100.0000	5.871

'Z' FACTOR (DRY) = 0.9964
'Z' FACTOR (WET) = 0.9960

..CALCULATED SPECIFIC GRAVITIES..

IDEAL, DRY..... 0.7297
IDEAL, WET 0.7278
REAL, DRY 0.7320
REAL, WET 0.7304

..CALCULATED GROSS HEATING VALUES..

BTU/CF - IDEAL, DRY 1260.8
BTU/CF - IDEAL, WET 1238.7
BTU/CF - REAL, DRY 1265.4
BTU/CF - REAL, WET 1243.7

* BASED ON GPA STANDARDS 2261-20 / 2145-16 / 2172-19

DISTRIBUTION AND REMARKS:

T. LEBLANC / B. BROWN / S. TIRMZI / A. ORTIZ / L. GUELKER

ANALYZED BY: CM

APPROVED:

MANLEY GAS TESTING INC.
120 DOCK ROAD - ODESSA, TEXAS-432-367-3024

A SAMPLE OF CORRAL CANYON INLET BEFORE DEHY - 01-18-23

CAPILLARY EXTENDED
C-6+ ANALYSIS
(NORMALIZED TO 100%)

COMPONENT	MOL%	WT%
NEOHEXANE	1.249	1.232
2,3DMC4+CYC5	6.520	5.601
2MPENTANE	20.459	20.196
3MPENTANE	10.162	10.032
N-HEXANE	23.353	23.054
2,2 DMPENTANE	0.216	0.248
MCYCLOPENTANE	9.689	9.341
2,4 DMPENTANE	0.047	0.054
2,2,3 TMBUTANE	0.000	0.000
BENZENE	1.783	1.596
3,3 DMPENTANE	0.097	0.111
CYCLOHEXANE	9.516	9.174
2MHEXANE	1.636	1.878
2,3 DMPENTANE	0.696	0.799
3MHEXANE	1.684	1.933
DIMCYCPENTANES(GROUPED)	3.222	3.624
N-HEPTANE	2.916	3.347
MCYCLOHEXANE	4.675	5.258
2,2DMHEXANE	0.141	0.185
2,3,3TMPENTANE	0.000	0.000
TOLUENE	0.803	0.847
2,3DMHEXANE	0.021	0.027
2M3EPENTANE	0.253	0.331
2MHEPTANE	0.000	0.000
4MHEPTANE	0.045	0.059
3,4DMHEXANE	0.010	0.013
3MHEPTANE	0.138	0.180
TRIMCYCPENTANES(GROUPED)	0.023	0.030
DIMCYCHEXANES(GROUPED)	0.356	0.457
N-OCTANE	0.130	0.170
2,3,5TRIMHEXANE	0.003	0.005
2,2,4TRIMHEXANE	0.011	0.016
2,2DIMHEPTANE	0.000	0.000
2,2,3TRIMHEXANE	0.000	0.000
2,5DIMHEPTANE	0.001	0.002
I-NONANE	0.000	0.000
2,4DIMHEPTANE	0.000	0.000
E-CYCHEXANE	0.018	0.024
3,3DIMHEPTANE	0.006	0.009
2,6DIMHEPTANE	0.001	0.001
E-BENZENE	0.007	0.009
2,3DIMHEPTANE	0.000	0.000
M-XYLENE	0.039	0.048
P-XYLENE	0.007	0.008
3,4DIMHEPTANE	0.006	0.008
3EHEPTANE	0.002	0.003

MANLEY GAS TESTING INC.
120 DOCK ROAD - ODESSA, TEXAS-432-367-3024

A SAMPLE OF CORRAL CANYON INLET BEFORE DEHY - 01-18-23

CAPILLARY EXTENDED
C-6+ ANALYSIS
(NORMALIZED TO 100%)

COMPONENT	MOL%	WT%
4MOCTANE	0.004	0.006
3MOCTANE	0.000	0.000
O-XYLENE	0.001	0.001
IC4CYCPENTANE	0.000	0.000
N-NONANE	0.005	0.007
I-DECANE	0.000	0.000
1E1MCYC6	0.010	0.014
IC3BENZENE	0.000	0.000
2,3DMOCTANE	0.000	0.000
3EOCTANE	0.008	0.013
NC4CYCC6	0.000	0.000
NC3BENZENE	0.002	0.002
M+P E-TOLUENE	0.003	0.004
O-E-TOLUENE	0.000	0.000
2,2DMOCTANE	0.000	0.000
TERTBUTYLBENZENE	0.012	0.019
1,3,5TMBENZENE	0.000	0.000
3,6DMOCTANE	0.000	0.000
IC4BENZENE	0.007	0.011
N-DECANE	0.002	0.003
UNKNOWN C-6'S	0.000	0.000
UNKNOWN C-7'S	0.000	0.000
UNKNOWN C-8'S	0.000	0.000
UNKNOWN C-9'S	0.004	0.007
UNK C10'S THRU C14'S	0.001	0.003
UNK C15'S THRU C16'S	0.000	0.000
UNK C17'S THRU C20'S	0.000	0.000
TOTAL	100.000	100.000

COMPONENT GROUPINGS (PARAFFINS-NAPTHENES-AROMATICS)

	MOL%	WT%
TOTAL C-6'S	82.731	80.226
TOTAL C-7'S	15.992	18.099
TOTAL C-8'S	1.189	1.542
TOTAL C-9'S	0.058	0.084
TOTAL C-10'S	0.029	0.046
TOTAL C-11 THRU C-14	0.001	0.003
TOTAL C-15 THRU C-16	0.000	0.000
TOTAL C-17 THRU C-20	0.000	0.000
TOTAL	100.000	100.000

* C6+ CHARACTERIZATION

MOL.WEIGHT = 87.299
SP.GRAVITY = 3.0142
BTU/FT3(DRY) = 4726.681
BTU/FT3(WET) = 4645.314
CU.FT./GAL = 25.652
GAL/CU.FT. = 0.038983
MOL% C6+ AROMATICS = 2.664

2.Technical

ECD - 30" OD x 102" OAL x 1.6 MMBTU/HR	ECD30STD

Data	Parameter
Size	30" OD x 102" OAL
Capacity (Third Party Verified)	11 MSCFD @ 10 oz/in using SG 1.52/2500 BTU/SCF
Heat Duty Rating	1.6 MMBTU/HR Max
Burner Size	88 Orifices, 19"L x 16" W
Stack	Un-insulated
Stack Internal Operating Temperature	500-1200°F
Inlet Temp	-20-1200°F
Pressure Rating	Atmospheric
Electrical Classification	Non-Hazardous
Wind Load	N/A, <20' OAL
Estimated Weight (No Concrete Block):	810 lbs

Connection Schedule	QTY	Size	Type
Waste Gas Inlet	1	3"	NPT
Pilot Gas (7 psig setpoint)	1	1/4"	NPT
Handhole Cover	1	8"	Assembly
Aux Pilot Automation (plugged)	1	3/4"	NPT

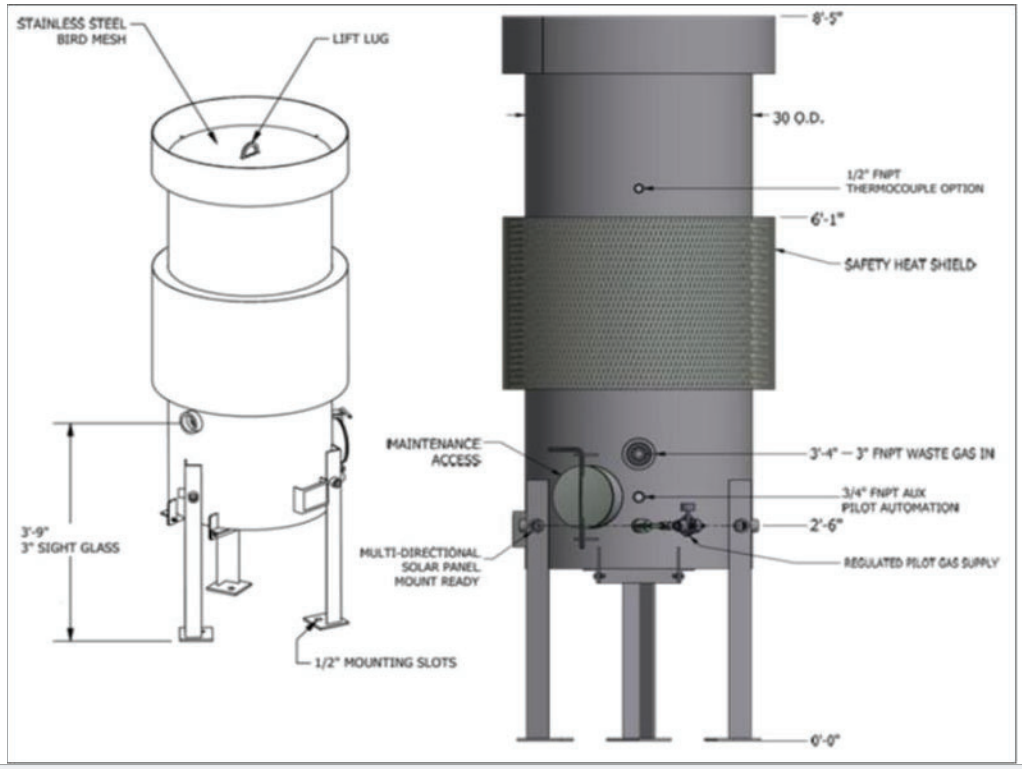
Paint	
External	Coated with silicone resin, Hi-Heat Industrial Black

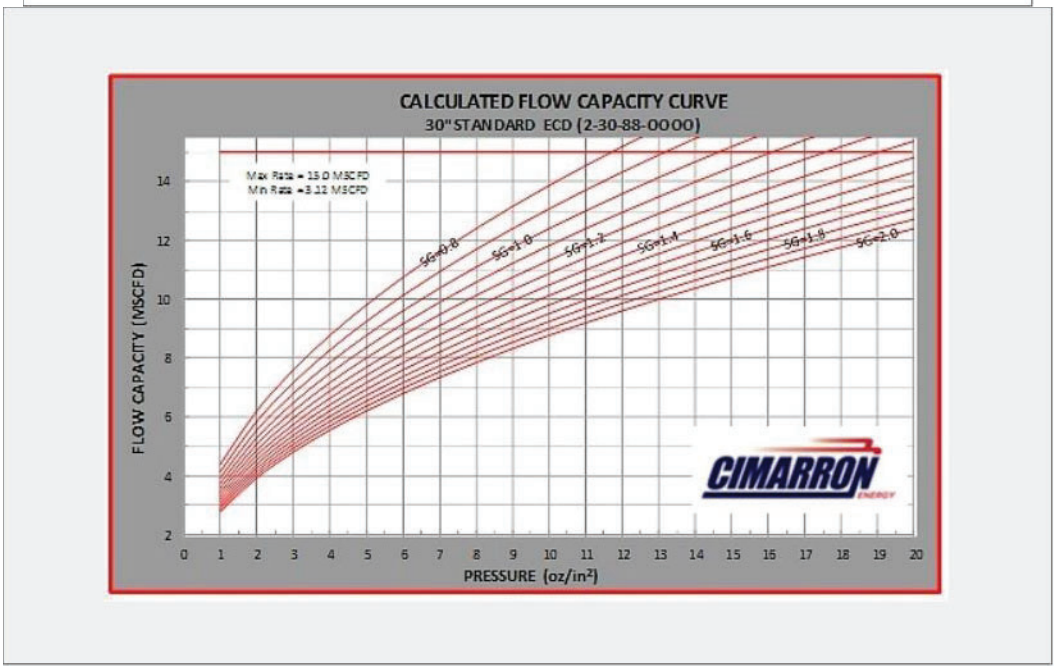
Notes
Pilot Consumption: Propane: 15 SCFH @ 4 psig, Natural Gas: 30 SCFH @ 8 - 10 psig (per ignitor)
OOOO (Quad O) Certified. >99.99% TVOC DRE when operating within flow rate guidelines.
Meets all EPA and CDPHE Regulations. Certified USEPA 40 CFR 60, App. A, Source Emissions Test Methods.

Accessories - Included

Description	OEM	OEM Model #	QTY
2" Flame Arrestor	Generic	N/A	1
Stainless Steel Burner Jets	Generic	Generic	88
Pilot Regulator, 1/4"	Fisher	67CR-206	1
Pilot Isolation Ball Valve 1/4 STL 2000# FP	Chemoil	2027WC-02	1
4'x4'x6" Concrete Block	Generic	Generic	1

Unit Illustrations (For information only, actual drawings to be provided upon purchase)

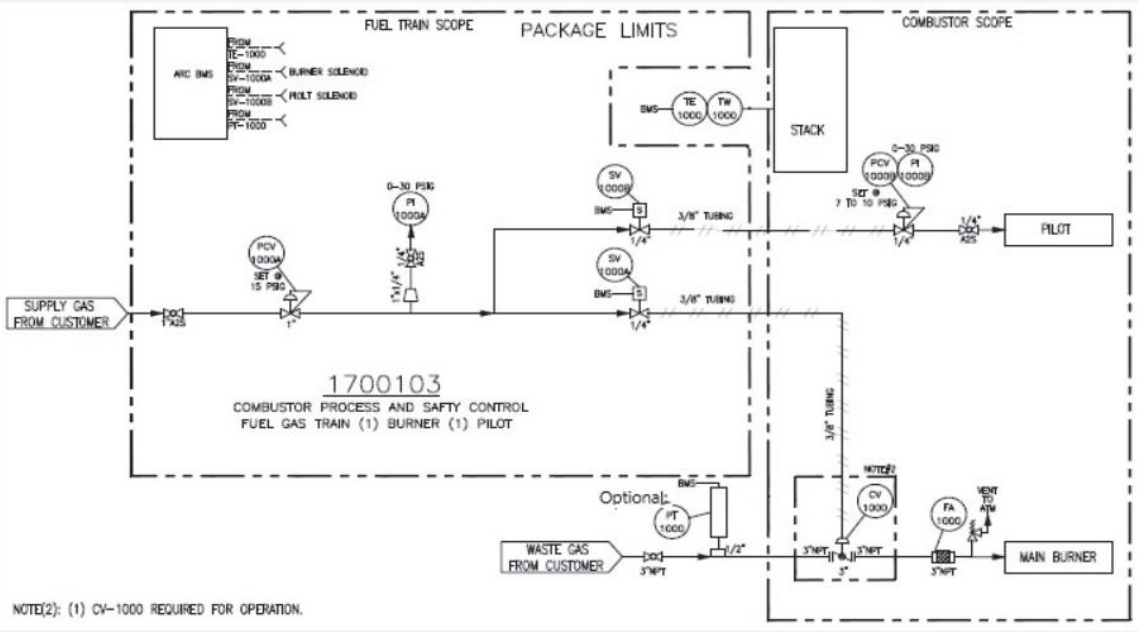




Fuel Train: ECD Process & Safety Control	24VDC: 1700103 12VDC: 1700103-12VDC

Notes
Requires a BMS for full functionality. A temperature sensor (sold separately) will generate a signal to the pilot solenoid and/or waste gas ESD to shut in the event a high temperature setpoint is met on the stack. Includes a pressure transducer (sold separately) will generate a signal to the pilot solenoid and/or waste gas ESD to shut in the event sensed pressure falls below the minimum setpoint. Isolation Valves, Inline Filters, Wiring Kit included. Components ship loose unless factory installation on unit option purchased.

Description	OEM	Syteline PN	QTY
Regulator, 1",5-20#,3/8"	Fisher 627-492	115905	1
Solenoid, 3-Way, 1/4" NPT, 24VDC(12VDC as Option)	ASCO EF	24V: 149571 12V: 145846	1
Solenoid, 2-Way, 1/4" NPT, 24VDC, (12VDC as Option)	ASCO EF	24V: 159548 12V: 159547	1
Gauge, Pressure 30 PSIG, Liquid Filled	Generic	13683	2
Valve, Ball, 1/4" NPT, 200#, FP, CS	Generic, 1/4" A2S	116471	1
Valve, Ball, 1" NPT, 200#, FP, CS	Generic, 1" A2S	143269	1



ECD - 48" OD x 139" OAL x 2 MMBTU/HR	ECD48

Data	Parameter
Size	48" OD x 139" OAL
Capacity (Third Party Verified)	30 MSCFD @ 10 oz/in using SG 1.52/2500 BTU/SCF
Heat Duty Rating	2 MMBTU/HR Max
Burner Size	210 Orifices, 26"L x 27" W
Stack	Un-insulated
Stack Internal Operating Temperature	500-1200°F
Inlet Temp	-20-1200°F
Pressure Rating	Atmospheric
Electrical Classification	Non-Hazardous
Wind Load	N/A, <20' OAL
Estimated Weight (No Concrete Block):	1750 lbs

Connection Schedule	QTY	Size	Type
Waste Gas Inlet	1	3"	NPT
Pilot Gas (7 psig setpoint)	1	1/4"	NPT
Handhole Cover	1	8"	Assembly
Aux Pilot Automation (plugged)	1	3/4"	NPT

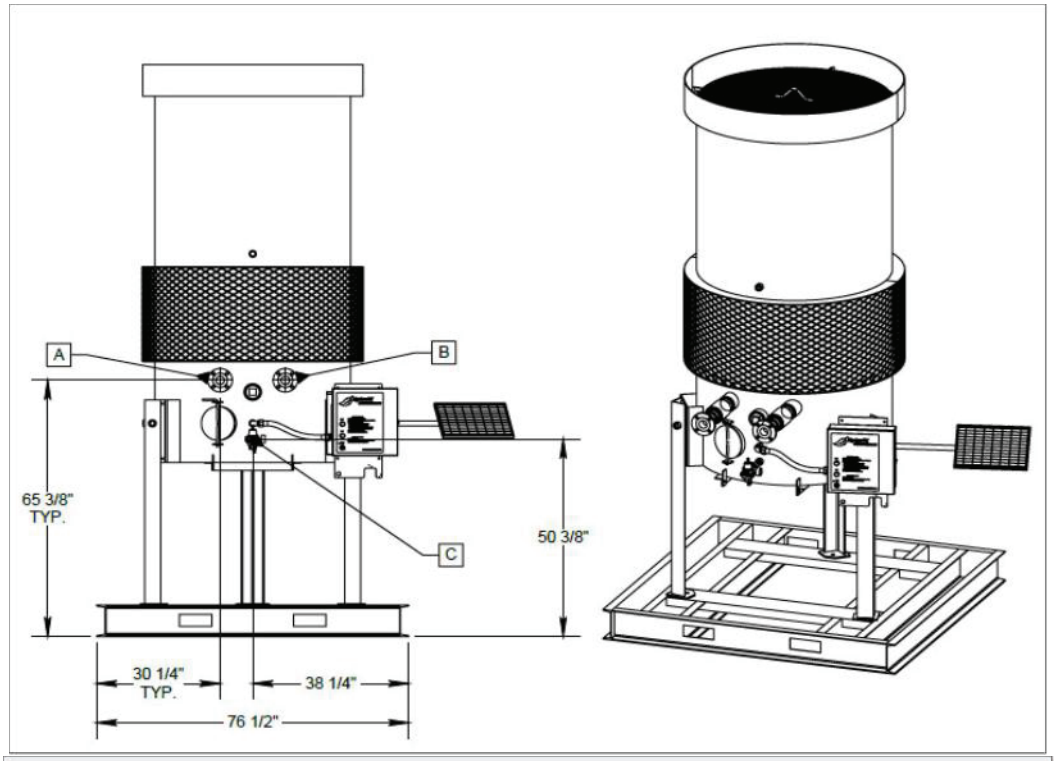
Paint	
External	Coated with silicone resin, Hi-Heat Industrial Black

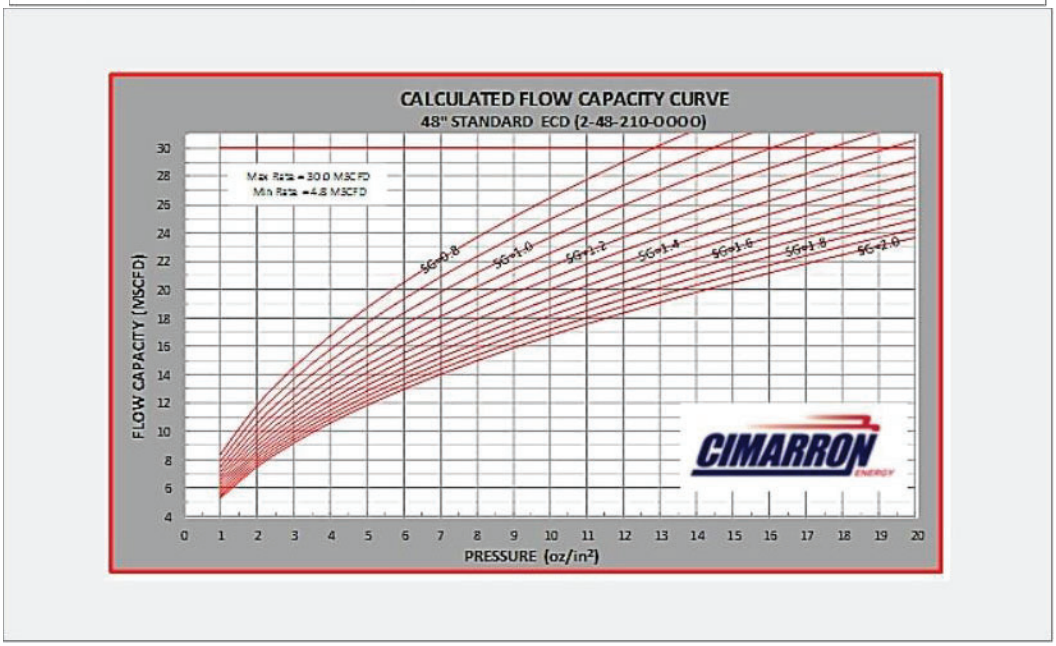
Notes
Pilot Consumption: Propane: 15 SCFH @ 4 psig, Natural Gas: 30 SCFH @ 8 - 10 psig (per ignitor)
OOOO (Quad O) Certified. >99.99% TVOC DRE when operating within flow rate guidelines.
Meets all EPA and CDPHE Regulations. Certified USEPA 40 CFR 60, App. A, Source Emissions Test Methods.

Accessories - Included

Description	OEM	OEM Model #	QTY
2" Flame Arrestor	Generic	N/A	1
Stainless Steel Burner Jets	Generic	Generic	210
Pilot Regulator, 1/4"	Fisher	67CR-206	1
Pilot Isolation Ball Valve 1/4 STL 2000# FP	Chemoil	2027WC-02	1
6'x6'x6" Concrete Block	Generic	Generic	1

Unit Illustrations (For information only, actual drawings to be provided upon purchase)

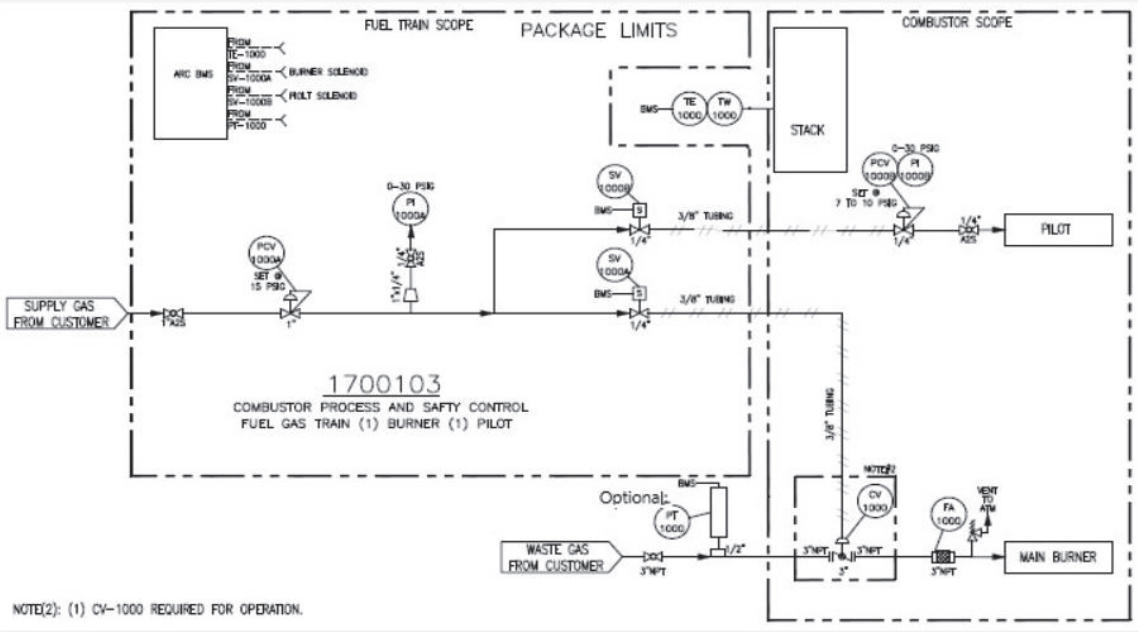




Fuel Train: ECD Process & Safety Control	24VDC: 1700103 12VDC: 1700103-12VDC

Notes
Requires a BMS for full functionality. A temperature sensor (sold separately) will generate a signal to the pilot solenoid and/or waste gas ESD to shut in the event a high temperature setpoint is met on the stack. Includes a pressure transducer (sold separately) will generate a signal to the pilot solenoid and/or waste gas ESD to shut in the event sensed pressure falls below the minimum setpoint. Isolation Valves, Inline Filters, Wiring Kit included. Components ship loose unless factory installation on unit option purchased.

Description	OEM	Syteline PN	QTY
Regulator, 1",5-20#,3/8"	Fisher 627-492	115905	1
Solenoid, 3-Way, 1/4" NPT, 24VDC(12VDC as Option)	ASCO EF	24V: 149571 12V: 145846	1
Solenoid, 2-Way, 1/4" NPT, 24VDC, (12VDC as Option)	ASCO EF	24V: 159548 12V: 159547	1
Gauge, Pressure 30 PSIG, Liquid Filled	Generic	13683	2
Valve, Ball, 1/4" NPT, 200#, FP, CS	Generic, 1/4" A2S	116471	1
Valve, Ball, 1" NPT, 200#, FP, CS	Generic, 1" A2S	143269	1



ECD - 60" x 13' x 6.1 MMBTU/HR	ECD60

Data	Parameter
Size	60" OD x 13'
Capacity (Third Party Verified)	57.6 MSCFD @ 10 oz/in using SG 1.52/2500 BTU/SCF
Heat Duty Rating	6.1 MMBTU/HR Max
Burner Size	440 Orifices, 34"L x 41" W
Stack	Insulated
Stack Internal Operating Temperature	600-1200°F
Inlet Temp	-20-1200°F
Pressure Rating	Atmospheric
Electrical Classification	Non-Hazardous
Wind Load	N/A, <20' OAL
Estimated Weight (No Concrete Block):	2150 lbs

Connection Schedule	QTY	Size	Type
Waste Gas Inlet	1	3"	NPT
Pilot Gas (7 psig setpoint)	1	1/4"	NPT
Handhole Cover	1	8"	Assembly
Aux Pilot Automation (plugged)	1	3/4"	NPT

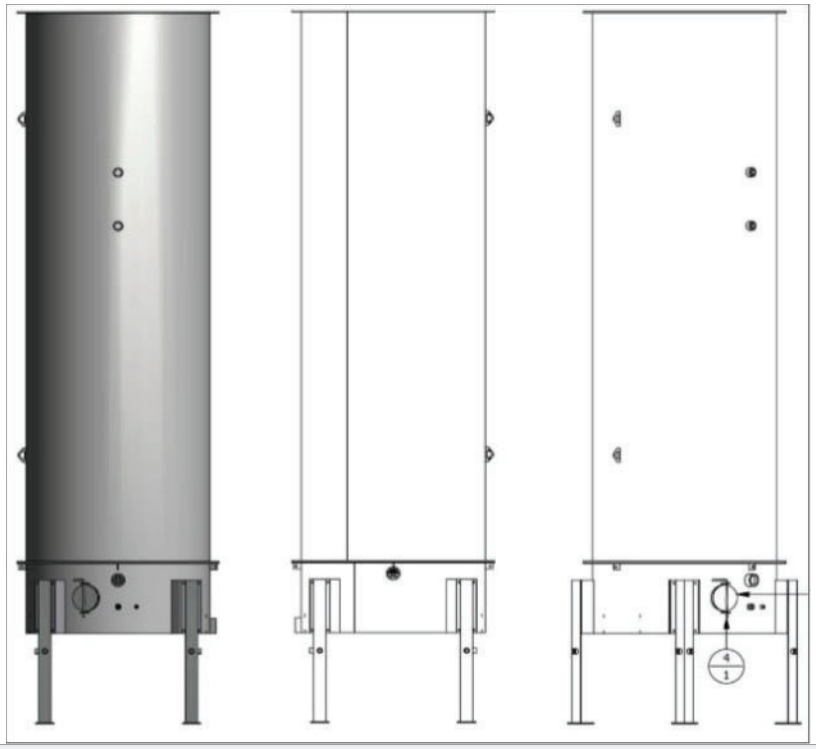
Paint	
External	Coated with silicone resin, Hi-Heat Industrial Black

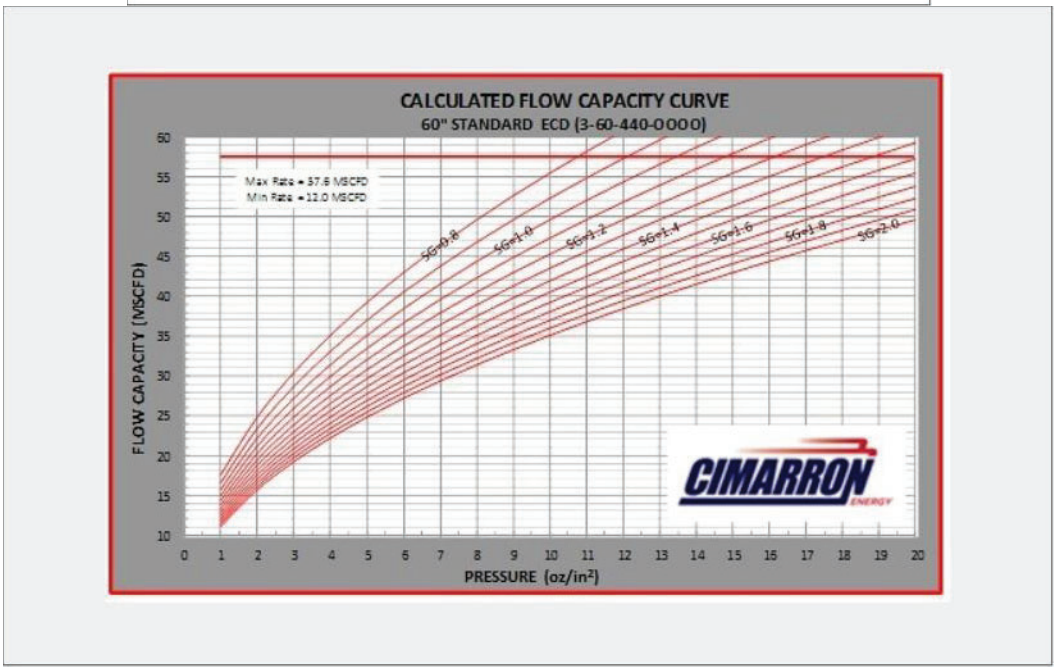
Notes
Pilot Consumption: Propane: 15 SCFH @ 4 psig, Natural Gas: 30 SCFH @ 8 - 10 psig (per ignitor)
OOOO (Quad O) Certified. >99.99% TVOC DRE when operating within flow rate guidelines.
Meets all EPA and CDPHE Regulations. Certified USEPA 40 CFR 60, App. A, Source Emissions Test Methods.

Accessories - Included

Description	OEM	OEM Model #	QTY
3" Flame Arrestor	Generic	N/A	1
Stainless Steel Burner Jets	Generic	Generic	440
Pilot Regulator, 1/4"	Fisher	67CR-206	1
Pilot Isolation Ball Valve 1/4 STL 2000# FP	Chemoil	2027WC-02	1
8'x8'x8" Concrete Block	Generic	Generic	1

Unit Illustrations (For information only, actual drawings to be provided upon purchase)

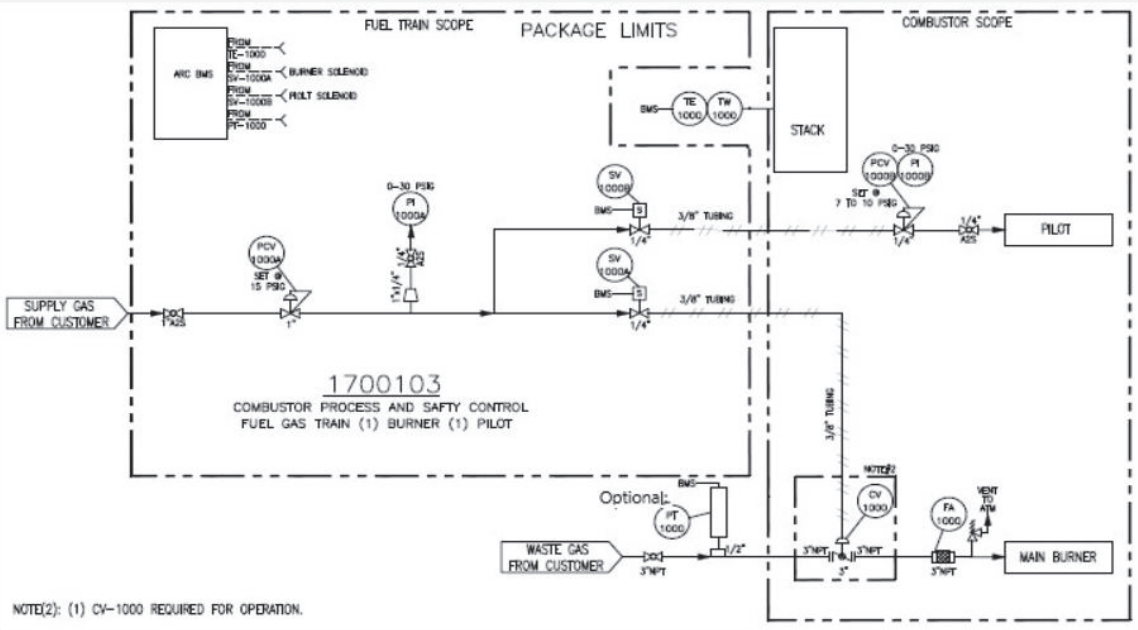




Fuel Train: ECD Process & Safety Control	24VDC: 1700103 12VDC: 1700103-12VDC

Notes
Requires a BMS for full functionality. A temperature sensor (sold separately) will generate a signal to the pilot solenoid and/or waste gas ESD to shut in the event a high temperature setpoint is met on the stack. Includes a pressure transducer (sold separately) will generate a signal to the pilot solenoid and/or waste gas ESD to shut in the event sensed pressure falls below the minimum setpoint. Isolation Valves, Inline Filters, Wiring Kit included. Components ship loose unless factory installation on unit option purchased.

Description	OEM	Syteline PN	QTY
Regulator, 1",5-20#,3/8"	Fisher 627-492	115905	1
Solenoid, 3-Way, 1/4" NPT, 24VDC(12VDC as Option)	ASCO EF	24V: 149571 12V: 145846	1
Solenoid, 2-Way, 1/4" NPT, 24VDC, (12VDC as Option)	ASCO EF	24V: 159548 12V: 159547	1
Gauge, Pressure 30 PSIG, Liquid Filled	Generic	13683	2
Valve, Ball, 1/4" NPT, 200#, FP, CS	Generic, 1/4" A2S	116471	1
Valve, Ball, 1" NPT, 200#, FP, CS	Generic, 1" A2S	143269	1



ECD - Knockout Pot - 20"x36" with Sandpiper Pump	DRIP2036SP

Vessel Connections	QTY	Size	Type
Inlet/Outlet	2	3"	3000# NPT
Drain	1	2"	3000# NPT
Pump Gas Supply	1	3/8"	Tubing
Pump Discharge	1	1"	MNPT

Paint	
Specification	Cimarron Standard (CIM-ENG-MECH-001)
External Surface Preparation	SSPC-SP3
External Primer Coat	Not Included/Optional Adder
External Intermediate Coat	Not Included/Optional Adder
External Top Coat	Alkyd Enamel
Color	To be provided by Customer ARO
Internal	None

KO Drum

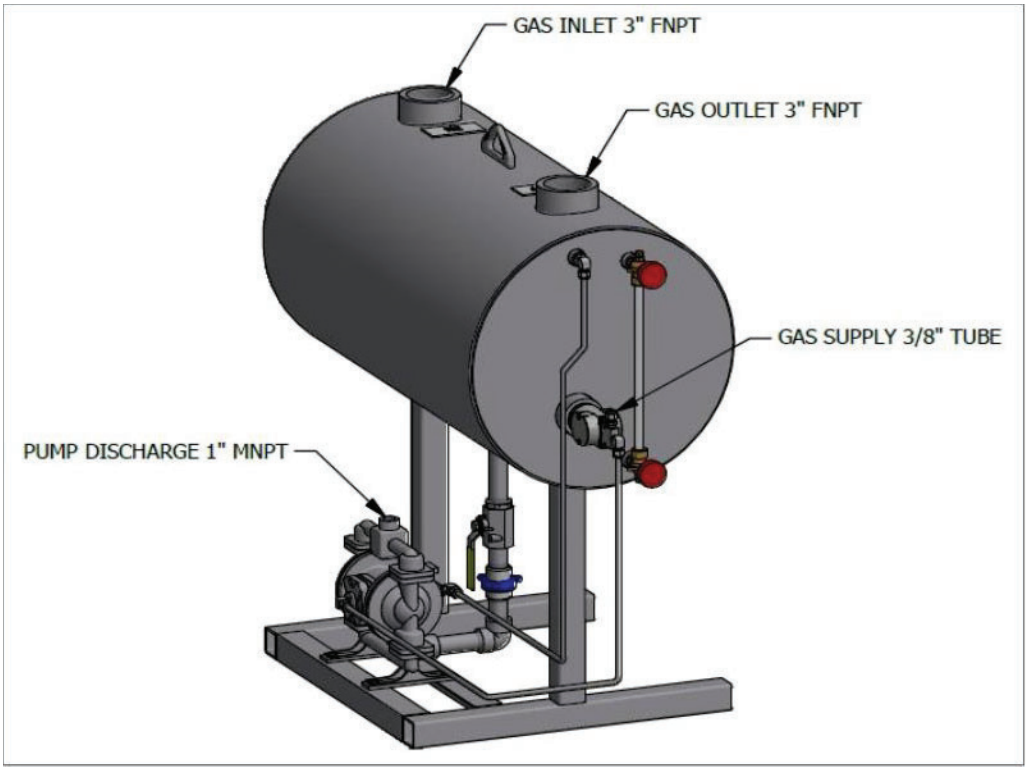
Data	Parameter
Size:	20"x36"
Rating:	15 psig @-20/200°F
ASME Code Stamped	No
NB Registered	No
Shell Material	SA-53B, ¼" Thick
Top/Base Material	SA-36
NDE	Air Test
Estimated Weight (Empty):	450

Accessories

Description	OEM	OEM Model #	QTY
GAUGE COCKS,SET,1/2"X5/8",250PSIG,BRASS	Generic	Generic	1
VALVE,BALL,1"NPT,2000#,FP,CS,W/STD,HD	Generic	Generic	1
LEVEL CONTROLLER,2",2"X6"FLOAT,500PSI,SS	Snaptrol	7400	1
PUMP,SANDPIPER,1/2"FNPT/1"MNPT,ALUMINUM	Sandpiper	G05	1

Optional Accessories Description	OEM	OEM Model #	QTY
Safety Float 3"x6" w/ Internal Mesh Pad	Generic	122356	1

Unit Illustrations (For information only, actual drawings to be provided upon purchase)



ARControl™ Burner Management System	ARC

Standard Features for the ARControl™ Product Family
• Increase controller capabilities through firmware upgrades, no need to purchase a new model. • Fully automated direct spark ignition with flame sensing capability. Control both pilot and main burner. • Customer PLC compatibility through Modbus RS-485/SCADA communications with data logging capability. • 12 / 24 VDC compatible multi-burner applications (one box can control up to 2 burners) • Class I Div 1 & Class I Div 2 approved configurations available. For Class 1 Div 1 classifications, controller to be mounted outside classified area using remote stand.

Firmware Features:	Base	Flare	BMS	Dual
Auto-Ignition	Yes	Yes	Yes	Yes
Advanced Data Logging	Yes	Yes	Yes	Yes
Modbus RTU over RS-485	Yes	Yes	Yes	Yes
Temperature Monitoring	Yes	Yes	Yes	Yes
Multiple Process Control	No	No	Yes	Yes
Temperature, Pressure, High Level Shutdown	No	No	Yes	Yes
High Temperature Shutdown	No	No	Yes	Yes
Two Pilot Control Capability	No	Yes	No	Yes
Two Burner Control Capability	No	No	No	Yes
Types of Equipment	**Flares/ECDs**	**Flares/ECDs**	**All**	**All**

Arc Burner Mangement System Individual Options

Description	SL PN
ARControl Solar Package 12VDC 12Ah	1960-160
ARControl Solar Package 12VDC 90W	150907
ARControl Solar Package 24VDC 180W	150906
ARControl Solar Package 24VDC 90W	150905

3.Documentation

The tables below list the information/documentation that is provided standard (free of charge) or can be provided as an option. Customer to ensure all necessary information and conditions submitted to Cimarron to complete deliverable.

3.1. Standard Documentation Packages (Free of Charge)

See sections 3.3 and 3.4 for pricing on documentation not included with equipment.

Engineering Documentation

Cimarron will provide the following documentation along with the equipment on this project:				
Type	Prod. Equip.	VRUs	Flares	Combustors
Piping And Instrumentation Diagram (P&ID)	Yes	Yes	Yes	Yes
Mechanical General Arrangement (GA)	Yes	Yes	Yes	Yes
ASME BPVC Sec VIII Div 1 Pressure Vessel Calcs	Yes	Yes	N/A	N/A
Ladder Logic Diagrams	No	No	Yes	No
Control Enclosures Drawings	No	No	Yes	No
Operating & Maintenance Manuals (Upon RTS) (One manual when Included, $300 ea. additional)	No	No	Yes, QTY 1	Yes, QTY 1

Fabrication Documents & Testing

Cimarron will provide the following documentation along with the equipment on this project:				
Type	Prod. Equip.	VRUs	Flares	Combustors
Visual Inspection	Yes	Yes	Yes	Yes
Dimensional Check	Yes	Yes	Yes	Yes
Factory Acceptance Test	N/A	Yes	Yes (ex. HP Line)	No
Dry Film Thickness: Painted CS Components Only	No	No	Yes	Yes
Radiography Test Documentation:	No	No	No	No
Dye Penetrant Examination Documentation:	No	No	No	No
Ultrasonic Testing Documentation:	No	No	No	No
Magnetic Particle Examination Documentation:	No	No	No	No
Hydro-Testing Chart and Calibration Certificate:	Yes	Yes	No	No
Pneumatic Testing Extent (where Applicable)	Yes	Yes	Yes	No
Hardness/Impact Testing	No	No	No	No
Heat Maps/Weld Maps	No	No	No	No
PMI	No	No	No	No
MTRs	No	No	No	No
Manufacturing Record Books (MRB)	No	No	No	No

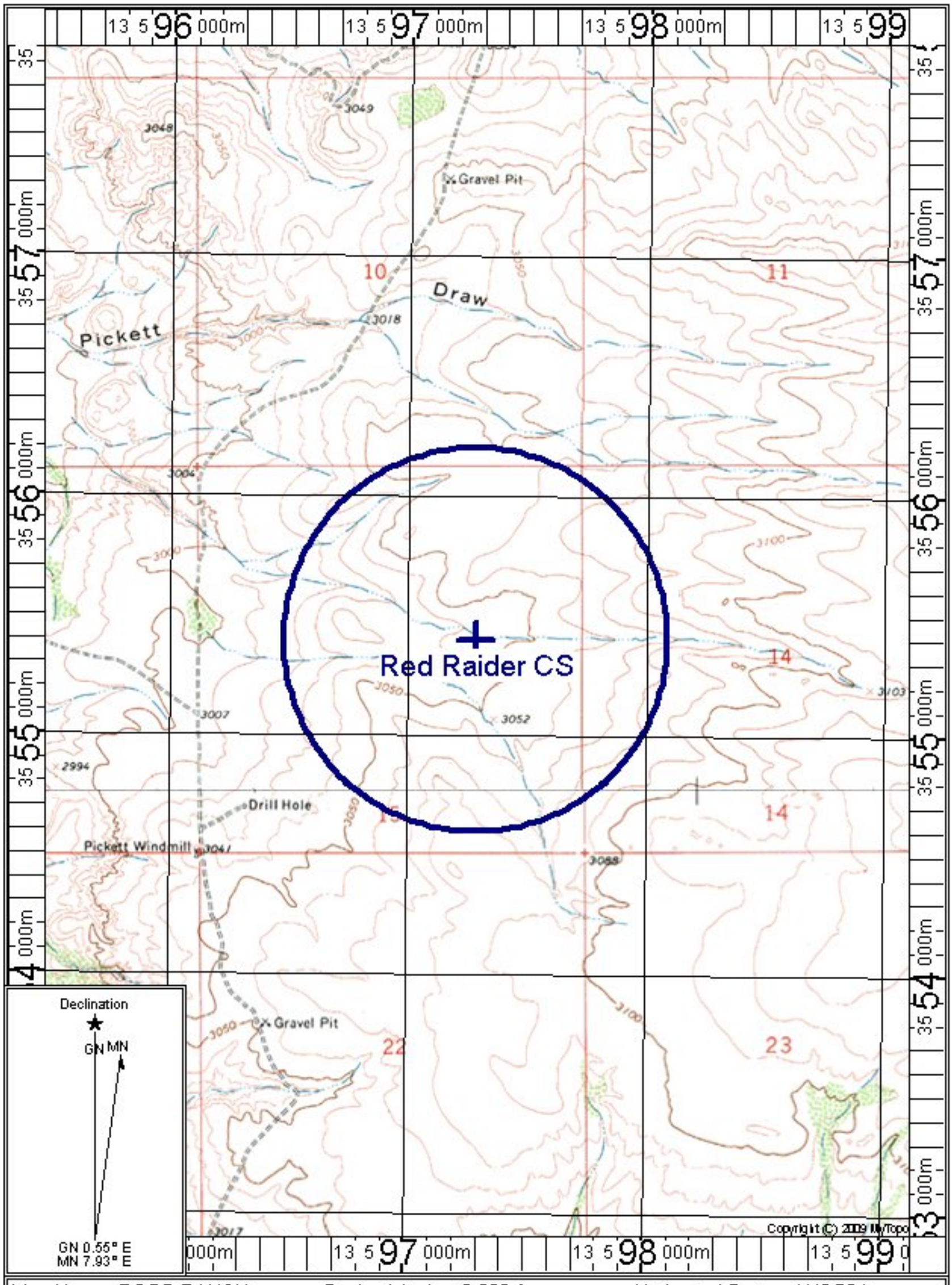
Section 8

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 is included in this section.



Map Name: ROSS RANCH
Print Date: 02/21/23

Scale: 1 inch = 2,000 ft.
Map Center: 13 0597280 E 35553

Horizontal Datum: WGS84

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.

7014 2870 0001 4722 8289

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

$0.00
US POSTAGE
3/31/2023
062S12395454
87113
000025732

Sent To: Eddy County Manager
Street & Apt. No., or PO Box No.: 101 W. Greene St. Suite 110
City, State, ZIP+4: Carlsbad, NM 88220

PS Form 3800, July 2014 — See Reverse for Instructions

7014 2870 0001 4722 8326

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

OFFICIAL

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

$0.00
US POSTAGE
3/31/2023
062S12395454
87113
000025731

Sent To: State of New Mexico
Street & Apt. No., or PO Box No.: 310 Old Santa Fe Trail
City, State, ZIP+4: Santa Fe, NM 87504

PS Form 3800, July 2014 — See Reverse for Instructions

Account: R091587 *Mill Levy does not include Special District Rates such as Penasco, Carlsbad Soil & Water, Central Valley, Eagle Draw, PVC, Cottonwood, and Hackberry

Location

Account Number R091587

Situs Address 390-5 LONGHORN ROAD

Tax Area CO_NR - CARLSBAD-OUT (Nonresidential)

Parcel Number 4-172-147-265-265

Legal Summary Quarter: NE S: 15 T: 25S R: 29E Quarter: NW S: 15 T: 25S R: 29E Quarter: SW S: 15 T: 25S R: 29E Quarter: SE S: 15 T: 25S R: 29E ALL EXEMPT

Map Number 384-15

Parcel Size 640

Owner Information

Owner Name BUREAU OF LAND MANAGEMENT

Owner Address UNITED STATES OF AMERICA

Assessment History

Actual Value (2023)	$1,152
Primary Taxable	$384
Exempt	($384)
Adjusted Taxable Total	$0

Tax Area: CO_NR **Mill Levy:** 22.566000

Type	Actual	Assessed	Acres
Exempt Land	$1,152	$384	640.000

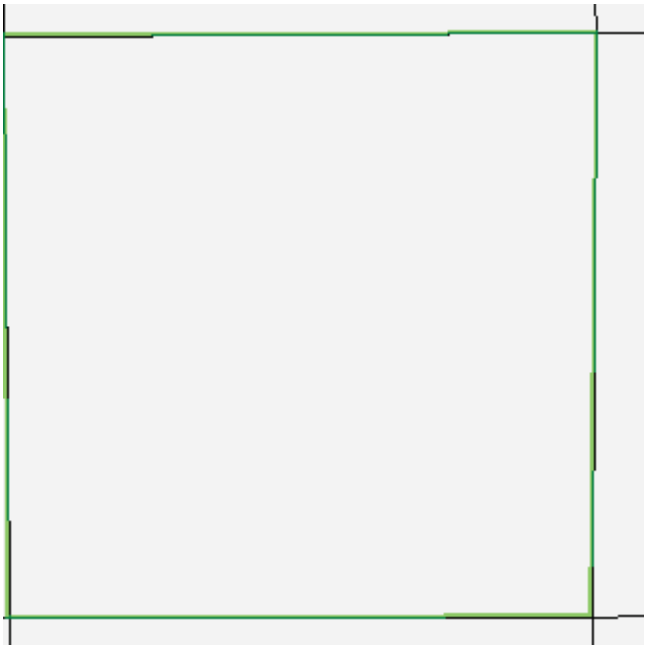
Tax History

Tax Year	Taxes
*2024	$0.00
2023	No Tax Values

* Estimated

Images

- GIS



General Posting of Notices – Certification

I, Mike Luckett, the undersigned, certify that on **{DATE}**, 4/12/23 posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in the **{CITY\TOWN\VILLAGE}** of **{COUNTY NAME}** County, State of New Mexico on the following dates:

Carlsbad Eddy

1. Facility entrance {DATE} 4/12/23 - Red Raider
2. {Location 2}{DATE} Janelle Whitlock Municipal Complex - 4/12/23
3. {Location 3}{DATE} Carlsbad Library - 4/12/23
4. {Location 4}{DATE} Carlsbad City Hall - 4/12/23

Signed this 12 day of April, 2023.

Mike C
Signature

4/12/23
Date

Mike Luckett
Printed Name

Lead Environmental Engineer
Title {APPLICANT OR RELATIONSHIP TO APPLICANT}

EMPLOYEE BENEFITS

- ✓ Health Insurance
- ✓ Dental Insurance
- ✓ Vision Insurance
- ✓ 403(b) Retirement with 5% match
- ✓ Paid Vacation
- ✓ Paid Sick Leave
- ✓ Paid Training & Certification
- ✓ Life Insurance
- ✓ Long Term Disability

CITY OF CARLSBAD MUNICIPAL COURT PENALTY ASSESSMENT LIST

NOTICE

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Total sum of all Hazardous Air Pollutants (HAPs)	5.60 pph	26.51 tpy
Green House Gas Emissions as Total CO_2e	n/a	115300.43 tpy

The standard operating schedule of the facility will be continuous.

The owner and/or operator of the Facility is:
Delaware G&P, LLC; 1722 Routh St. Suite 1300, Dallas, TX 75201

If you have any comments about the construction or operation of this facility, and you want your comment be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

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Attención
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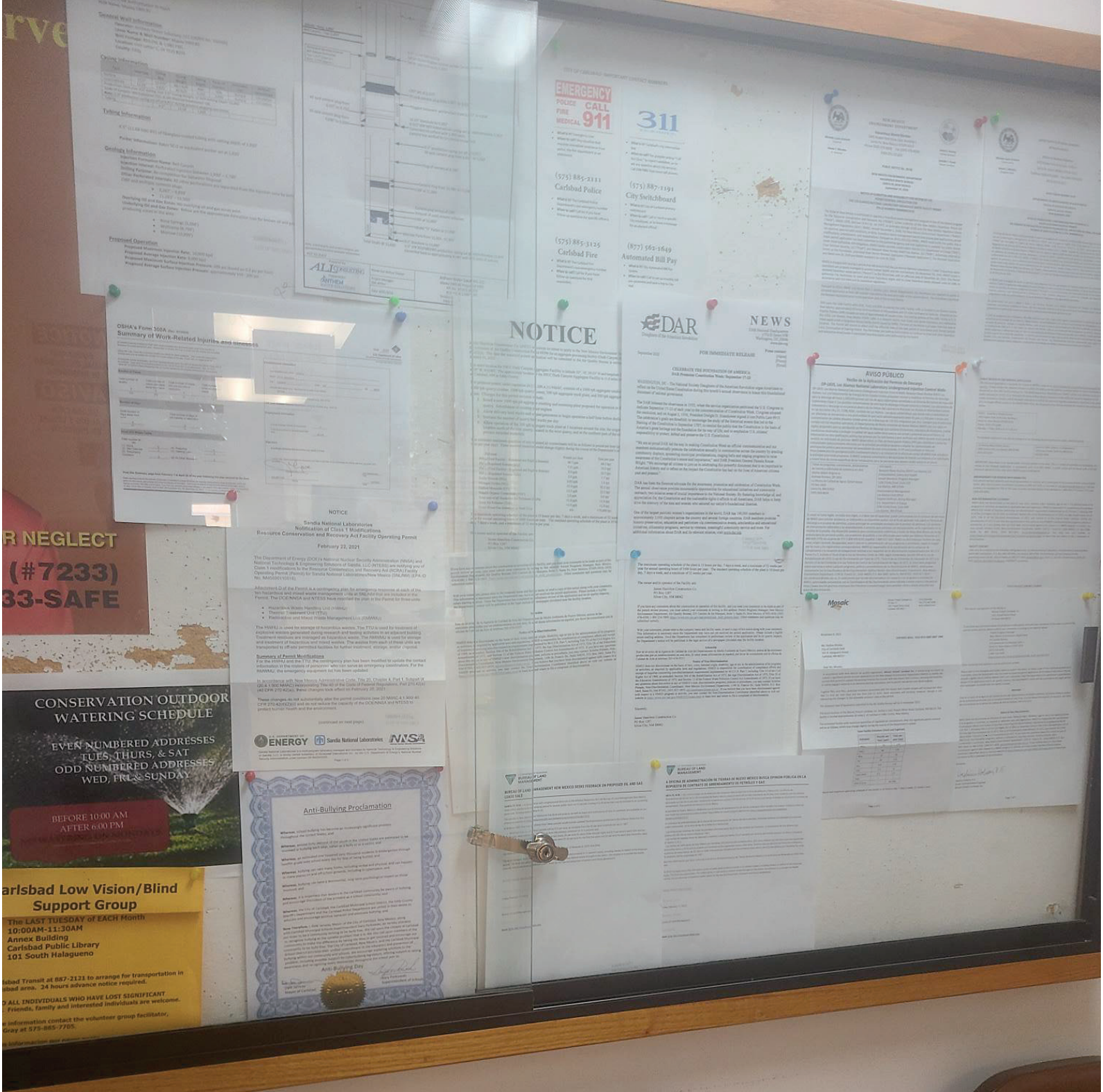
EMERGENCY
POLICE FIRE MEDICAL CALL 911
311
(575) 885-2111
Carlsbad Police
(575) 887-1191
City Switchboard
(575) 885-3125
Carlsbad Fire
(877) 562-1649
Automated Bill Pay
NOTICE
DAR
NEWS
AVISO PÚBLICO
R NEGLECT
(#7233)
33-SAFE
CONSERVATION OUTDOOR
WATERING SCHEDULE
EVEN NUMBERED ADDRESSES
TUES, THURS, & SAT
ODD NUMBERED ADDRESSES
WED, FRI, & SUNDAY
BEFORE 10:00 AM
AFTER 6:00 PM
arlsbad Low Vision/Blind
Support Group
The LAST TUESDAY of EACH Month
10:00AM-11:30AM
Annex Building
Carlsbad Public Library
101 South Halagueno
Anti-Bullying Proclamation
Anti-Bullying Day

FACEBOOK GROUP

TINYURL.COM/PARENTSINACTION
OPEN TO PARENTS IN THE CARLSBAD COMMUNITY TO DISCUSS COMMON PARENTING TOPICS & PROVIDE RESOURCES

ASK A COALITION REPRESENTATIVE FOR DETAILS OR USE THIS QR CODE FOR INSTANT ACCESS!

COALITION

SANE Program
Advocacy Center

24 Hour Sexual
Assault Crisis Line:
(575) 303-7070

This service is available 24 h
whether or not you decide to
enforcement, and there is n
for our services.

SPEAK Program
575-303-7070
1313 W Mermod

You're Invited!

YOU KNEW YOU WERE GOC
ENOUGH?
WHAT LIFE COULD BE LIKE IF
THOUT A SHADOW OF A DO
T YOU WERE GOOD ENOUGH

AVE BEEN RAISED TO BELIEVE THAT WHAT YOU FE
ANT ARE UNIMPORTANT, YOU DEVELOP INTO SON
THE SELF, PEOPLE-PLEASES, LACKS BOUNDARIES, IS
D, ANGRY, ANXIOUS, AND HAS FEW SKILLS TO CHA
LIVES. LETS GET STARTED ON YOU TODAY!!

Group and One on One coaching
with Valerie McArthur
Life Coach/ Teacher/ Mentor
specializing in Codependency

PLEASE JOIN
BY USING THE
QR CODE

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The standard operating schedule of the facility will be continuous.

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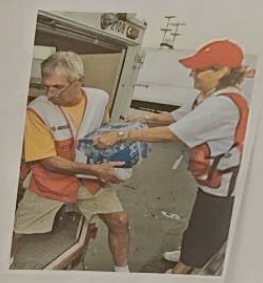
humanity
volunteer

Touch Lives Everyday



International Humanitarian Services—Coordinate fundraising for measles vaccines; educate youth about the Geneva Conventions and provide international tracing and messaging.

Fundraising—Make it financially possible for the Red Cross to deliver its lifesaving services. The Red Cross relies on volunteers and the generosity of the American public.

Leadership—Serve on a Red Cross board or decision-making committee, manage a program, or chair an activity.

National Headquarters—Utilize professional skills to support departments with national initiatives.

Join at www.redcross.org/volunteer
Questions?
Contact: corina.guerrero3@redcross.org
915-478-4508

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Do you have a safe place to stay tonight?

Are you between the ages of 12 and 17?

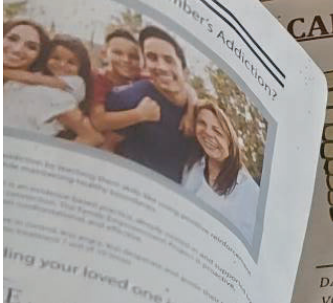
Foundry Home is a youth shelter that offers a safe place and services to youth in need.

CALL OR TEXT
24/7
888-808-2775

u are not alone!

Foundry Home
888-808-2775
2317 Jackson

About a Family Member's Addiction?



ling your loved one into recovery.

CARLSBAD

DAY AND EVENING
VOLUNTEER TUTORS
NEEDED-NO TEACHING
EXPERIENCE REQUIRED!

- High School Equivalency
- Citizenship

Located at 511 N. 12th
Open now on M,W,TH,F from 9am-2pm and TUES 1pm-6pm.
Contact Leonora Mendez for more information at
575-885-1752 or email director@myclp.org

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SECOND FRIDAY OF EVERY MONTH
FIRST COME, FIRST SERVED!
ARTESIA | 8:30 AM
CARLSBAD | 10:00 AM
EPWORTH UNITED METHODIST
1406 W. BLODGETT

NEW MEXICO STATE PARKS presents
Boating Safety Course
WEAR IT
Register Now
statewide
ONE Session


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March 29, 2023

CERTIFIED MAIL XXXX XXXX XXXX XXXX
RETURN RECEIPT REQUESTED *(certified mail is required,* ***return receipt is optional****)*

Dear County Official,
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If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

Please refer to the company name and facility name, or send a copy of this notice along with your comments, since the Department may have not yet received the permit application. Please include a legible return mailing address with your comments. Once the Department has performed a preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

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Sincerely,

Delaware G&P, LLC
1722 Routh St., Suite 1300, Dallas, TX 75201

Notice of Non-Discrimination

NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Part 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, or if you believe that you have been discriminated against with respect to a NMED program or activity, you may contact: Kathryn Becker, Non-Discrimination Coordinator, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@env.nm.gov. You may also visit our website at https://www.env.nm.gov/non-employee-discrimination-complaint-page/ to learn how and where to file a complaint of discrimination.

☆ 4-171-147-265-265

Owner:
STATE OF NEW MEXICO
Owner Address:
310 OLD SANTA FE TRAIL
SANTA FE NM 87504
Site Address:

☆ 4-172-147-265-265

Owner:
BUREAU OF LAND MANAGEMENT
Owner Address:

Site Address:

☆ 4-172-148-269-265

Owner:
BUREAU OF LAND MANAGEMENT
Owner Address:

Site Address:

☆ 4-171-148-265-265

Owner:
BUREAU OF LAND MANAGEMENT
Owner Address:

Site Address:

Affidavit of Publication

No.

State of New Mexico

County of Eddy:

Danny Scott

being duly sworn says that he is the **Publisher**

of the Artesia Daily Press, a daily newspaper of General circulation, published in English at Artesia, said county and state, and that the hereto attached

Display Ad

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/day on the same day as follows:

First Publication March 30, 2023

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Sixth Publication

Seventh Publication

Subscribed and sworn before me this

30th day of March 2023

STATE OF NEW MEXICO
NOTARY PUBLIC
Latisha Romine
Commission Number 1076338
My Commission Expires May 12, 2023

Latisha Romine

Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

NOTICE OF AIR QUALITY PERMIT APPLICATION

Delaware G&P, LLC announces its application submittal to the New Mex Environment Department for an air quality permit for the modification c compressor station facility. The expected date of application submittal to Air Quality Bureau is March 31, 2023.

The exact location for the proposed facility known as, Red Raider Compr sor Station, is at UTM Zone 13 S, UTM Easting 597,280 m, UTM Northi 3,555,400 m. The approximate location of this facility is 12.94 miles southeast of Loving, NM in Eddy county.

The proposed modification consists of adding six Caterpillar 3612A4 eng The estimated maximum quantities of any regulated air contaminant will as follows in pound per hour (pph) and tons per year (tpy) and could cha slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per yea
Particulate Matter (PM)	2.23 pph	9.78 tpy
PM 10	2.23 pph	9.78 tpy
PM 2.5	2.23 pph	9.78 tpy
Sulfur Dioxide (SO2)	1.26 pph	5.50 tpy
Nitrogen Oxides (NOx)	21.79 pph	95.45 tpy
Carbon Monoxide (CO)	41.92 pph	183.63 tpy
Volatile Organic Compounds (VOC)	49.85 pph	238.36 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	5.60 pph	26.51 tpy
Green House Gas Emissions as Total CO2e	n/a	115300.43 tp

The standard operating schedule of the facility will be continuous.

The owner and/or operator of the Facility is: Delaware G&P, LLC; 1722 R St., Suite 1300, Dallas, TX 75201

If you have any comments about the construction or operation of this fac and you want your comments to be made as part of the permit review pr you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air ty Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 8 1816. Other comments and questions may be submitted verbally. (505) 4 4300; 1 800 224-7009.

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Affidavit of Publication

No. 26493

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County of Eddy:

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Legal Ad

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STATE OF NEW MEXICO
NOTARY PUBLIC
Latisha Romine
Commission Number 1076338
My Commission Expires May 12, 2023

Latisha Romine

Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

Legal Notice

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Delaware G&P, LLC; 1722 Routh St. Suite 1300, Dallas, TX 75201

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With your comments, please refer to the company name and facility name, or send a copy of this notice along with your comments. This information is necessary since the Department may have not yet received the permit application. Please include a legible return mailing address. Once the Department has completed its preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

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From: Atiqur Rahman
To: don@carlsbadradio.com
Cc: Adam Erenstein
Subject: Public Service Announcement Request - Red Raider Compressor Station
Date: Thursday, April 13, 2023 9:39:40 AM

Dear Carlsbad Radio, KAMQ 1240 AM,

Per New Mexico Administrative Code 20.2.72.203.B NMAC and according to the Guidance for Public Notice for Air Quality Permit Applications – **(5) Notifications: Submittal of Public Service Announcement (PSA):** A public service announcement required for permits and significant permit revisions must be submitted to at least one radio or television station, which services the municipality, or county which the facility is or will be located. **Therefore, based on the above, we respectfully ask you to air the information shown below as a Public Service Announcement.**

The public service announcement request must contain the following information about the facility or proposed facility (20.2.72.203.D NMAC).

a. The name: **Red Raider Compressor Station,** location: latitude **32** deg**, 7** min, **50.86** sec and longitude **-103** deg**, 58** min, 7.19 sec. The approximate location of this facility is **12.94** miles **southeast** of **Loving** in **Eddy** county and type of business: **natural gas compressor facility.**
b. The name and principal owner or operator: **Delaware G&P, LLC** – owner and operator.
c. The type of process or change for which the permit is sought: **NSR** Permit for **natural gas compression and distribution facility.**
d. Locations where the notices have been posted in Loving, NM: **(1) Red Raider Compressor Station Facility's Entrance (2) Carlsbad City Hall (3) Carlsbad Library (4) Janell Whitloch Municipal Complex, Carlsbad, NM.**
e. The Department's address or telephone number to which comments may be directed: **Permit Programs manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1, Santa Fe, New Mexico; 87505-1816; (505) 476-4300; 1 (800) 224-7009.**

Please let me know if you have any questions.

Thank you!

Atiqur Rahman (He/Him)
Associate Consultant

P 505.266.6611 M 575.489.8334
Email: Atiqur.rahman@trinityconsultants.com
Address: 9400 Holly Avenue NE, Building 3, Suite B, Albuquerque, NM 87122

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.

The facility is a natural gas compressor station, the purpose of which is to compress natural gas along a pipeline to sales. The facility consists of inlet separators, compressor engines, reboiler, dehydrator, enclosed combustion unit, vapor combustion unit.

Low pressure field gas is gathered from various wells in the area. The gas is compressed by natural gas driven compressors (Unit ENG-1 through ENG-8). Maximum controlled and uncontrolled emissions for NOx, CO, VOC, HCHO are calculated based on emission factors from manufacturer and catalyst vendor specifications. Estimated HAP and PM emissions from the compressor engines are calculated based on AP-42 Table 3.2-2 (dated 07/00). SO2 emissions are estimated based on the assumption that fuel gas has a Sulfur content of 2 gr per 100 scf. All emission values listed in the application forms for the engines correspond to 100% load at maximum engine speed.

Condensate and water are collected from the inlet separator and compression, are separated in a gunbarrel tank (TK-407) and are stored in atmospheric storage tanks. Condensate is routed from the facility storage tanks (TK-406A & TK-406B) to remove from the facility via truck. Flash, working, and breading emissions from the condensate and produced water tanks are routed to a vapor combustor (Unit ECD-1) with an assumed 95% destruction removal efficiency.

Once the gas is compressed, it is treated using a glycol dehydration system to remove entrained water. The glycol dehydration unit (DEHY-1) incorporates three distinct sources of air emissions: (1) a gas-fired reboiler burner, (2) a glycol recovery still, and (3) a glycol flash tank. Flash tank emissions are sent to station suction. The still vent emissions go to the BTEX condenser. BTEX non-condensable is sent to reboiler stack with glow plug with 98% DRE.

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)**:**
All sources listed in the Table 2-A 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 Sour12ce after this modification.**

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	If subject, this would normally apply to the entire 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. Title V applications, see exemption at 20.2.3.9 NMAC The TSP NM ambient air quality standard was repealed by the EIB effective November 30, 2018.
20.2.7 NMAC	Excess Emissions	Yes	Facility	This regulation establishes requirements for the facility if operations at the facility result in any excess emissions. The owner or operator will operate the source at the facility having an excess emission, to the extent practicable, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions. The facility will also notify the NMED of any excess emission per 20.2.7.110 NMAC
20.2.23 NMAC	Fugitive Dust Control	No	N/A	This regulation does not apply because this application is not for a Notice of Intent.
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	This facility does not have gas burning equipment having a heat input of greater than 1,000,000 million British Thermal Units per year per unit; therefore, this regulation does not apply.
20.2.34 NMAC	Oil Burning Equipment: NO_2	No	N/A	This facility does not have oil burning equipment having a heat input of greater than 1,000,000 million British Thermal Units per year per unit; therefore, this unit does not apply.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	N/A	No	This facility does not meet the definition of a natural gas processing plant; therefore, this regulation does not apply.
20.2.37 and 20.2.36 NMAC	Petroleum Processing Facilities and Petroleum Refineries	N/A	N/A	**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	Yes	TK-406A & TK-406B	This new facility has a storage capacity greater than 65,000 gallons; therefore, this regulation is subject.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	This facility does not meet the definition of a sulfur recovery plant; therefore, this regulation does not apply.
20.2.50 NMAC	Oil and Gas Sector – Ozone Precursor Pollutants	Yes	ENG-1 through ENG-8, RBL-1, ECD-1, SSM, DEHY-1, FUG	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: 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 Units

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.)
				127 – Flowback Vessels and Preproduction Operations 113- Compressor Engines (Units ENG-1 through ENG-8) will comply with the requirements of this subpart. 114- Compressor Engines (Units ENG-1 through ENG-8) will comply with the requirements of this subpart. 115 – 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 – This facility will have equipment leaks and fugitive emissions. Thus, it will comply with this regulation. 117 – This facility is a natural gas compressor station. Thus, it is not subject to this rule. 118- Glycol Dehydrator (Unit ID: DEHY-1) has a PTE greater than 2 tpy; therefore DEHY-1 is subject to this subpart. 119- RBL-1 has a heat rating less than 20 MMBtu/hr; therefore, this subpart is not subject. 120 – This facility will truck out more than 13 times a year and is therefore subject to this subpart. 121 – This facility does not have any pig launching and receiving. Therefore, this facility is not subject to this subpart. 122 – This facility is subject to this subpart and will comply with this subpart as stated in 20.2.50.122.B(3) Table-2. 123 – This facility has less than 2 tpy maximum allowable VOC emissions. Thus, it is not subject to this subpart.
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	ENG-1 through ENG-8, RBL-1	Engines, boilers, heaters, and flares are subject. ENG-1 through ENG-8 and RBL-1 will be subject to this regulation.
20.2.70 NMAC	Operating Permits	Yes	Facility	The facility has the potential to emit more than 100 tpy of carbon monoxide; therefore, this regulation is subject.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	This facility is subject to 20.2.70 NMAC; therefore, this regulation is subject.
20.2.72 NMAC	Construction Permits	Yes	Facility	This facility is subject to 20.2.72 NMAC.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	This regulation establishes emission inventory requirements. The facility meets the applicability requirements of 20.2.73.300 NMAC. The facility will meet all applicable reporting requirements under 20.2.73.300.B.1 NMAC.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No	Facility	This facility is not a PSD source; therefore, this regulation does not apply.

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.)
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	This facility is subject to 20.2.72 NMAC; therefore, Nthis regulation applies.
20.2.77 NMAC	New Source Performance	Yes	FUG, ENG-1 through ENG-8	This regulation establishes state authority to implement new source performance standards (NSPS) for stationary sources, as amended through January 15, 2017. FUG applies as it is subject to NSPS OOOOb, and Units ENG-1 through ENG-8 will be subject to JJJJ and OOOOb when the rule is promulgated.
20.2.78 NMAC	Emission Standards for HAPS	No	N/A	This regulation establishes state authority to implement emission standards for hazardous air pollutants subject to 40 CFR Part 61. This facility does not emit hazardous air pollutants which are subject to the requirements of 40 CFR Part 61 and is therefore not subject to this regulation
20.2.79 NMAC	Permits – Nonattainment Areas	No	Facility	This regulation establishes the requirements for obtaining a nonattainment area permit. The facility is not located in a non-attainment area and therefore is not subject to this regulation.
20.2.80 NMAC	Stack Heights	No	N/A	This regulation establishes requirements for the evaluation of stack heights and other dispersion techniques. This regulation does not apply, as all stacks at the facility will follow good engineering practice.
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	DEHY-1, ENG-1 Through ENG-8	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63.

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	This regulation defines national ambient air quality standards. The facility meets all applicable national ambient air quality standards for NOx, CO, SO2, H2S, PM10, and PM2.5 under this regulation.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	ENG-1 through ENG-8, FUG	This regulation defines general provisions for relevant standards that have been set under this part. The facility is subject to this regulation because the following subparts apply: - Unit FUG is subject to NSPS OOOOb when the rule is promulgated. - Units ENG-1 Through ENG-8 are subject to JJJJ and will be subject to NSPS OOOOb when the rule is promulgated.
NSPS 40 CFR60.40a, Subpart Da	Subpart Da, Performance Standards for **Electric Utility Steam Generating Units**	No	N/A	There are no electric utility steam generating units located at this facility; therefore, the facility is not subject to this regulation.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NSPS 40 CFR60.40b Subpart Db	**Electric Utility Steam Generating Units**	No	N/A	There are no electric utility steam generating units located at this facility; therefore, the facility is not subject to this regulation.
40 CFR 60.40c, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	No	N/A	There are no small industrial commercial institutional steam generating units located at this facility; therefore, the facility is not subject to this regulation.
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	Yes	TK-406a and TK-406b	Tanks TK-406A and TK-406B have a storage capacity greater than 151,416 liters (40,000 gallons) that are used to store petroleum liquids for which construction is commenced after May 18, 1978.
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	Yes	TK-406A and TK-406B	This facility has storage vessels, emission units TK-406A and TK-406B 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.
NSPS 40 CFR 60.330 Subpart GG	**Stationary Gas Turbines**	No	N/A	There are no turbines located at this facility; therefore, this regulation does not apply.
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from **Onshore Gas Plants**	No	N/A	This is not a natural gas processing plant; therefore, this regulation does not apply.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for **Onshore Natural Gas Processing**: SO_2 Emissions	No	N/A	This is not a natural gas processing plant; therefore, this regulation does not apply.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NSPS 40 CFR Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution for which construction, modification or reconstruction commenced after August 23, 2011 and before September 18, 2015	No	N/A	This facility is a new facility and therefore is not subject to this regulation. The storage tanks have a potential to emit less than 6 tpy; therefore, the tanks are not subject to this regulation.
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 and before November 15, 2021	No	N/A	The storage tanks have a potential to emit less than 6 tpy; therefore, the tanks are not subject to this regulation.
NSPS 40 CFR Part 60 Subpart OOOOb	Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification or Reconstruction Commenced After November 15, 2021	Yes	ENG-1 Through ENG-8, FUG	This regulation is applicable to natural gas compressor stations constructed after November 15, 2021. The facility is subject to this regulation because the following subparts apply: - Unit FUG is subject to NSPS OOOOb when the rule is promulgated. - Units ENG-1 Through ENG-8 are subject to JJJJ and will be subject to NSPS OOOOb when the rule is promulgated.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	This facility does not have any compression internal combustion engines. Thus, it is not subject to this regulation.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Yes	ENG-1 through ENG-8	ENG-1 through ENG-8 are manufactured after June 12, 2006, and have maximum engine power greater than 500 HP. Thus, ENG-1 to ENG-8 are subject to this subpart.
NSPS 40 CFR 60 Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for Electric	No	N/A	This facility does not have any steam generating units and is therefore not subject to this regulation.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	Generating Units			
NSPS 40 CFR 60 Subpart UUUU	Emissions Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units	No	N/A	This facility does not operate any sources that are applicable to this subpart.
NSPS 40 CFR 60, Subparts WWW, XXX, Cc, and Cf	Standards of performance for Municipal Solid Waste (MSW) Landfills	No	N/A	This facility is not a municipal solid waste landfill and is therefore not subject to this regulation.
NESHAP 40 CFR 61 Subpart A	General Provisions	No	N/A	This facility is not subject to any subparts of 40 CFR 61.
NESHAP 40 CFR 61 Subpart E	National Emission Standards for **Mercury**	No	N/A	The provisions of this subpart are applicable to those stationary sources which process mercury ore to recover mercury, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and incinerate or dry wastewater treatment plant sludge
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 is a piece of equipment, which contains or encounters a fluid that is at least 10% weight of VHAP. VHAP is a substance regulated under this subpart for which a standard for equipment leaks of VHAPs has been promulgated
MACT 40 CFR 63, Subpart A	General Provisions	Yes	ENG-1 Through ENG-8	Applies if any other Subpart in 40 CFR 63 applies.
MACT 40 CFR 63.760 Subpart HH	**Oil and Natural Gas Production Facilities**	Yes	DEHY-1	The dehydrator (Unit DEHY-1) is located at an area source of HAPS and has the potential to emit less than 1 tpy (0.90 megagram per year) of benzene. Therefore, it is subject to the operating and recordkeeping requirements of §63.764(e)(1)(ii).
MACT 40 CFR 63 Subpart HHH		No	N/A	This facility is not a natural gas transmission or storage facility; therefore, this subpart does not apply.
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	Yes	RBL-1	RBL-1 is a process heater that is located at a facility that is a major source of HAPs; therefore, this subpart will apply.
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric Utility Steam Generating Unit	No	N/A	This facility does not contain a coal or oil fire electric utility steam generating units; therefore, this regulation does not apply.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (**RICE MACT**)	Yes	ENG-1 through ENG-8	ENG-1 through ENG-8 are stationary internal combustion engines that are operated at a major source HAP; therefore, these engines are subject to this subpart.
40 CFR 64	**Compliance Assurance Monitoring**	No	N/A	This facility is submitting an application pursuant of 20.2.72.200A.(1) NMAC for an NSR permit. Thus, this regulation does not apply.
40 CFR 68	**Chemical Accident Prevention**	Yes	Facility	The facility has more than a threshold quantity of a regulated substance in a process, as determined under §68.115. The owner will comply by maintaining a Risk Management Plan.
Title IV – Acid Rain 40 CFR 72	**Acid Rain**	No	N/A	This facility is not an acid rain source; therefore, this regulation is not subject.
Title IV – Acid Rain 40 CFR 73	**Sulfur Dioxide** Allowance Emissions	No	N/A	This facility is not an acid rain source; therefore, this regulation is not subject.
Title IV-Acid Rain 40 CFR 75	**Continuous Emissions Monitoring**	No	N/A	This 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	This facility is not an acid rain source; therefore, this regulation is not subject.
Title VI – 40 CFR 82	Protection of **Stratospheric Ozone**	No	N/A	This facility will have appliances containing CFCs. The owner will use only certified technicians for the maintenance, service, repair and disposal of appliances to comply with this regulation.

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.

Startup and shutdown procedures are either based on manufacturer's recommendations or based on Delaware G&P's experience with specific equipment. These procedures are designed to proactively address the potential for malfunction to the minimize emissions from the facility during events that result in shutdown and subsequent startup.

Equipment located at this facility is equipped with various safety devices and features that aid in the prevention of excess emissions in the event of an operational emergency. If an operational emergency does occur and excess emissions occur, Delaware G&P will submit the required Excess Emissions Report as per 20.2.7 NMAC. Corrective action to eliminate the excess emissions and prevent recurrence in the future will be undertaken as quickly as safety allows.

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.

There are no 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.	**X**
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.	
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.

Universal Application 4

Air Dispersion Modeling Report

Refer to and complete Section 16 of the Universal Application form (UA3) to assist your determination as to whether modeling is required. If, after filling out Section 16, you are still unsure if modeling is required, e-mail the completed Section 16 to the AQB Modeling Manager for assistance in making this determination. If modeling is required, a modeling protocol would be submitted and approved prior to an application submittal. The protocol should be emailed to the modeling manager. A protocol is recommended but optional for minor sources and is required for new PSD sources or PSD major modifications. Fill out and submit this portion of the Universal Application form (UA4), the "Air Dispersion Modeling Report", only if air dispersion modeling is required for this application submittal. This serves as your modeling report submittal and should contain all the information needed to describe the modeling. No other modeling report or modeling protocol should be submitted with this permit application.

16-A: Identification

1	Name of facility:	Red Raider Compressor Station
2	Name of company:	Delaware G&P, LLC
3	Current Permit number:	9897
4	Name of applicant's modeler:	Mingcheng Ren
5	Phone number of modeler:	(505) 266-6611
6	E-mail of modeler:	mingcheng.ren@trinityconsultants.com

16-B: Brief

1	Was a modeling protocol submitted and approved?	Yes☒	No☐
2	Why is the modeling being done?	Other (describe below)	
3	Describe the permit changes relevant to the modeling.		
	Delaware G&P, LLC seeks to authorize a facility throughput of 150 MMSCFD of natural gas, the construction and operation of two (2) Waukesha 16V275G1 compressor engines (ENG-1 and ENG-2), six (6) Caterpillar 3612A4 compressor engines (ENG-3 through ENG-8), one (1) DEHY Glycol Reboiler (RBL-1), and one (1) Enclosed Combustion Unit (ECD-1).		
4	What geodetic datum was used in the modeling?	WGS84	
5	How long will the facility be at this location?	Permanent	

6	Is the facility a major source with respect to Prevention of Significant Deterioration (PSD)?	Yes☐	No☒
7	Identify the Air Quality Control Region (AQCR) in which the facility is located	155	
8	List the PSD baseline dates for this region (minor or major, as appropriate).		
	NO_2	3/16/1988	
	SO_2	7/28/1978	
	PM_{10}	2/20/1979	
	$PM_{2.5}$	11/13/2013	
9	Provide the name and distance to Class I areas within 50 km of the facility (300 km for PSD permits).		
	Carlsbad Caverns National Park - 38.20 km		
10	Is the facility located in a non-attainment area? If so describe below	Yes☐	No☒
11	Describe any special modeling requirements, such as streamline permit requirements.		
	N/A		

16-C: Modeling History of Facility

Describe the modeling history of the facility, including the air permit numbers, the pollutants modeled, the National Ambient Air Quality Standards (NAAQS), New Mexico AAQS (NMAAQS), and PSD increments modeled. (Do not include modeling waivers).

1	Pollutant	Latest permit and modification number that modeled the pollutant facility-wide.	Date of Permit	Comments
	CO	N/A	N/A	N/A
	NO_2	N/A	N/A	N/A
	SO_2	N/A	N/A	N/A
	H_2S	N/A	N/A	N/A
	PM2.5	N/A	N/A	N/A
	PM10	N/A	N/A	N/A
	Lead	N/A	N/A	N/A
	Ozone (PSD only)	N/A	N/A	N/A
	NM Toxic Air Pollutants (20.2.72.402 NMAC)	N/A	N/A	N/A

16-D: Modeling performed for this application

For each pollutant, indicate the modeling performed and submitted with this application.
Choose the most complicated modeling applicable for that pollutant, i.e., culpability analysis assumes ROI and cumulative analysis were also performed.

1	Pollutant	ROI	Cumulative analysis	Culpability analysis	Waiver approved	Pollutant not emitted or not changed.
	CO	☒	☐	☐	☐	☐
	NO_2	☒	☒	☐	☐	☐

	SO_2	☒	☐	☐	☐	☐
	H_2S	☐	☐	☐	☐	☒
	PM2.5	☒	☒	☐	☐	☐
	PM10	☒	☒	☐	☐	☐
	Lead	☐	☐	☐	☐	☒
	Ozone	☐	☐	☐	☐	☒
	State air toxic(s) (20.2.72.402 NMAC)	☐	☐	☐	☐	☒

16-E: New Mexico toxic air pollutants modeling

1 List any New Mexico toxic air pollutants (NMTAPs) from Tables A and B in 20.2.72.502 NMAC that are modeled for this application.
N/A

2 List any NMTAPs that are emitted but not modeled because stack height correction factor. Add additional rows to the table below, if required.

Pollutant	Emission Rate (pounds/hour)	Emission Rate Screening Level (pounds/hour)	Stack Height (meters)	Correction Factor	Emission Rate/ Correction Factor
N/A	N/A	N/A	N/A	N/A	N/A

16-F: Modeling options

1	Was the latest version of AERMOD used with regulatory default options? If not explain below.	Yes☒	No☐
	N/A		

16-G: Surrounding source modeling

1	Date of surrounding source retrieval	3/13/2023

2 If the surrounding source inventory provided by the Air Quality Bureau was believed to be inaccurate, describe how the sources modeled differ from the inventory provided. If changes to the surrounding source inventory were made, use the table below to describe them. Add rows as needed.

AQB Source ID	Description of Corrections
N/A	N/A

16-H: Building and structure downwash

1	How many buildings are present at the facility?	N/A	
2	How many above ground storage tanks are present at the facility?	4	
	Was building downwash modeled for all buildings and tanks? If not explain why below.	Yes☒	No☐

3	N/A	
4	Building comments	N/A

16-I: Receptors and modeled property boundary

1	"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 a 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. A Restricted Area is required in order to exclude receptors from the facility property. If the facility does not have a Restricted Area, then receptors shall be placed within the property boundaries of the facility. Describe the fence or other physical barrier at the facility that defines the restricted area.		
	The facility will install a fence line for the restricted area.		
2	Receptors must be placed along publicly accessible roads in the restricted area. Are there public roads passing through the restricted area?	Yes☐	No☒
3	Are restricted area boundary coordinates included in the modeling files?	Yes☒	No☐

4 Describe the receptor grids and their spacing. The table below may be used, adding rows as needed.

Grid Type	Shape	Spacing	Start distance from center of facility	End distance from center of facility	Comments
Fenceline	Fenceline	25m	-	-	-
Discrete	Circular	50m	0	800	Very fine grid
Discrete	Circular	100m	800	3,000	Fine grid
Discrete	Circular	250m	3,000	6,000	Medium grid
Discrete	Circular	500m	6,000	10,000	Coarse grid
Discrete	Circular	1000m	10,000	50,000	Very coarse grid

5	Describe receptor spacing along the fence line. The facility fenceline was modeled using 25-meter grid spacing.
6	Describe the PSD Class I area receptors. The PSD Class I area receptors for Carlsbad Caverns National Park and Guadalupe Mountains National Park were retrieved from NMED AQB's MergeMaster on 4/9/2023.

16-J: Sensitive areas

1	Are there schools or hospitals or other sensitive areas near the facility? If so describe below. This information is optional (and purposely undefined) but may help determine issues related to public notice.	Yes☐	No☒
3	The modeling review process may need to be accelerated if there is a public hearing. Are there likely to be public comments opposing the permit application?	Yes☐	No☒

16-K: Modeling Scenarios

1	Identify, define, and describe all modeling scenarios. Examples of modeling scenarios include using different production rates, times of day, times of year, simultaneous or alternate operation of old and new equipment during transition periods, etc. Alternative operating scenarios should correspond to all parts of the Universal Application and should be fully described in Section 15 of the Universal Application (UA3).		
	The modeled facility operates 24 hours a day, 7 days a week, and 8760 hours a year.		
2	Which scenario produces the highest concentrations? Why?		
	N/A		
3	Were emission factor sets used to limit emission rates or hours of operation? (This question pertains to the "SEASON", "MONTH", "HROFDY" and related factor sets, not to the factors used for calculating the maximum emission rate.)	Yes☐	No☒
4	If so, describe factors for each group of sources. List the sources in each group before the factor table for that group. (Modify or duplicate table as necessary. It's ok to put the table below section 16-K if it makes formatting easier.) Sources:		

5	Hour of Day	Factor	Hour of Day	Factor								
	1		13									
	2		14									
	3		15									
	4		16									
	5		17									
	6		18									
	7		19									
	8		20									
	9		21									
	10		22									
	11		23									
	12		24									

	If hourly, variable emission rates were used that were not described above, describe them below.		
	N/A		
6	Were different emission rates used for short-term and annual modeling? If so describe below.	Yes☐	No☒

16-L: NO_2 Modeling

1	Which types of NO_2 modeling were used? Check all that apply.	
	☒	ARM2
	☐	100% NO_X to NO_2 conversion
	☐	PVMRM
	☐	OLM
	☐	Other:
2	Describe the NO_2 modeling.	
	Following NMED AQB's Modeling Guidelines, for 1-hour NO_2, the entire facility was modeled and the 98th percentile 1-hour background concentration was added to the high 8th high modeled value to compare to the design value. For annual NO_2, the entire facility was modeled, and the annual background concentration was added to the high 1st high to compare to the design value. For annual NO_2 PSD, the monitored background value was added to the modeled high first high value from the facility as a conservative approach to the increment consumption.	
3	Were default NO_2/NO_X ratios (0.5 minimum, 0.9 maximum or equilibrium) used? If not describe and justify the ratios used below.	Yes☒ No☐
	N/A	
4	Describe the design value used for each averaging period modeled.	
	1-hour: High eighth high Annual: Other (Describe): 5-year annual average	

16-M: Particulate Matter Modeling

1	Select the pollutants for which plume depletion modeling was used.	
	☐	PM2.5
	☐	PM10
	☒	None
2	Describe the particle size distributions used. Include the source of information.	
	N/A	
3	Does the facility emit at least 40 tons per year of NO_X or at least 40 tons per year of SO_2? Sources that emit at least 40 tons per year of NO_X or at least 40 tons per year of SO_2 are considered to emit significant amounts of precursors and must account for secondary formation of PM2.5.	Yes☒ No☐
4	Was secondary PM modeled for PM2.5?	Yes☐ No☒

5 If MERPs were used to account for secondary PM2.5 fill out the information below. If another method was used describe below.

NO_X (ton/yr)	SO_2 (ton/yr)	$[PM2.5]_{annual}$	$[PM2.5]_{24\text{-hour}}$
95.45	5.50	0.00078628	0.018956

16-N: Setback Distances

1	Portable sources or sources that need flexibility in their site configuration requires that setback distances be determined between the emission sources and the restricted area boundary (e.g. fence line) for both the initial location and future locations. Describe the setback distances for the initial location.
	N/A
2	Describe the requested, modeled, setback distances for future locations, if this permit is for a portable stationary source. Include a haul road in the relocation modeling.
	N/A

16-O: PSD Increment and Source IDs

1	The unit numbers in the Tables 2-A, 2-B, 2-C, 2-E, 2-F, and 2-I should match the ones in the modeling files. Do these match? If not, provide a cross-reference table between unit numbers if they do not match below.	Yes☒	No☐
	Unit Number in UA-2	Unit Number in Modeling Files	
2	The emission rates in the Tables 2-E and 2-F should match the ones in the modeling files. Do these match? If not, explain why below.	Yes☒	No☐
3	Have the minor NSR exempt sources or Title V Insignificant Activities" (Table 2-B) sources been modeled?	Yes☐	No☒
4	Which units consume increment for which pollutants?		
	All units consume increment for all pollutants at this facility.		
5	PSD increment description for sources. (for unusual cases, i.e., baseline unit expanded emissions after baseline date).	N/A	
6	Are all the actual installation dates included in Table 2A of the application form, as required? This is necessary to verify the accuracy of PSD increment modeling. If not please explain how increment consumption status is determined for the missing installation dates below.	Yes☒	No☐
	N/A		

16-P: Flare Modeling

1	For each flare or flaring scenario, complete the following			
	Flare ID (and scenario)	Average Molecular Weight	Gross Heat Release (cal/s)	Effective Flare Diameter (m)
	N/A	N/A	N/A	N/A

16-Q: Volume and Related Sources

1	Were the dimensions of volume sources different from standard dimensions in the Air Quality Bureau (AQB) Modeling Guidelines? If not please explain how increment consumption status is determined for the missing installation dates below.	Yes☐	No☐
	N/A		
2	Describe the determination of sigma-Y and sigma-Z for fugitive sources.		
	N/A		
3	Describe how the volume sources are related to unit numbers. Or say they are the same.		
	N/A		
4	Describe any open pits.		
	N/A		
5	Describe emission units included in each open pit.		
	N/A		

16-R: Background Concentrations

1	Were NMED provided background concentrations used? Identify the background station used below. If non-NMED provided background concentrations were used describe the data that was used.	Yes☒	No☐
	CO: N/A		
	NO_2: Outside Carlsbad (350151005)		
	PM2.5: Hobbs-Jefferson (350450019)		
	PM10: Hobbs-Jefferson (350250008)		
	SO_2: N/A		
	Other:		
	Comments: N/A		
2	Were background concentrations refined to monthly or hourly values? If so describe below.	Yes☐	No☒

16-S: Meteorological Data

1	Was NMED provided meteorological data used? If so select the station used. Carlsbad 2017-2021 NWS dataset	Yes☒	No☐

2	If NMED provided meteorological data was not used describe the data set(s) used below. Discuss how missing data were handled, how stability class was determined, and how the data were processed.
	N/A

16-T: Terrain

1	Was complex terrain used in the modeling? If not, describe why below.	Yes☒	No☐
2	What was the source of the terrain data?		
	USGS - TNM Download (v2.0) https://apps.nationalmap.gov/downloader/ (1 arc-second DEM)		

16-U: Modeling Files

1 Describe the modeling files:

File name (or folder and file name) "Folder name" – "sub-folder name" – "file name"	Pollutant(s)	Purpose (ROI/SIA, cumulative, culpability analysis, other)
"SIL" – "CO" – CO_SIL.ami	CO	SIA
"SIL" – "NO2" – NO2_SIL.ami	NO_2	SIA
"SIL" – "PM10" – PM10_SIL.ami	PM_{10}	SIA
"SIL" – "PM25" – PM25_SIL.ami	$PM_{2.5}$	SIA
"SIL" – "SO2" – SO2_SIL.ami	SO_2	SIA
"SIL Class 1" – "NO2" – NO2.ami	NO_2	Class I SIA
"SIL Class 1" – "PM10" – PM10.ami	PM_{10}	Class I SIA
"SIL Class 1" – "PM25" – PM25.ami	$PM_{2.5}$	Class I SIA
"SIL Class 1" – "SO2" – SO2.ami	SO_2	Class I SIA
"CIA" – "PM10_24Hr" – CIA_PM10_24hr.ami	PM_{10}	CIA
"CIA" – "PM25_24hr_Annual" – PM25 CIA 24hr.ami	$PM_{2.5}$	CIA
"CIA" – "PM25_24hr_Annual" – PM25 CIA Annual.ami	$PM_{2.5}$	CIA

16-V: PSD New or Major Modification Applications

1	A new PSD major source or a major modification to an existing PSD major source requires additional analysis. Was preconstruction monitoring done (see 20.2.74.306 NMAC and PSD Preapplication Guidance on the AQB website)?	Yes☐	No☒
2	If not, did AQB approve an exemption from preconstruction monitoring?	Yes☐	No☐
3	Describe how preconstruction monitoring has been addressed or attach the approved preconstruction monitoring or monitoring exemption.		
	N/A		

4	Describe the additional impacts analysis required at 20.2.74.304 NMAC.		
	N/A		
5	If required, have ozone and secondary PM2.5 ambient impacts analyses been completed? If so describe below.	Yes☐	No☒
	N/A		

16-W: Modeling Results

1	If ambient standards are exceeded because of surrounding sources, a culpability analysis is required for the source to show that the contribution from this source is less than the significance levels for the specific pollutant. Was culpability analysis performed? If so describe below.	Yes☐	No☒
2	Identify the maximum concentrations from the modeling analysis. Rows may be modified, added and removed from the table below as necessary.		

Pollutant, Time Period and Standard	Modeled Facility Concentration ($\mu g/m^3$)	Modeled Concentration with Surrounding Sources ($\mu g/m^3$)	Secondary PM ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Cumulative Concentration ($\mu g/m^3$)	Value of Standard ($\mu g/m^3$)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
CO 8-hr SIL	166.87	-	-	-	-	500	33.4%	597480	3555450	3052.13
CO 1-hr SIL	216.71	-	-	-	-	2000	10.8%	597480	3555450	3052.13
NO_2 Annual SIL	4.12	-	-	-	-	1	Significant	597259	3555496	3046.46
NO_2 24-hr SIL	44.64	-	-	-	-	5	Significant	597530	3555450	3054.00
NO_2 1-hr SIL	100.88	-	-	-	-	7.52	Significant	597480	3555450	3052.13
$PM_{2.5}$ Annual SIL	0.40	-	-	-	-	0.2	Significant	597259	3555562	3054.92
$PM_{2.5}$ 24-hr SIL	3.74	-	-	-	-	1.2	Significant	597530	3555500	3054.79
PM_{10} Annual SIL	0.40	-	-	-	-	1	39.6%	597259	3555562	3054.92
PM_{10} 24-hr SIL	5.03	-	-	-	-	5	Significant	597530	3555450	3054.00
SO_2 Annual SIL	0.22	-	-	-	-	1	22.3%	597259	3555562	3054.92
SO_2 24-hr SIL	2.80	-	-	-	-	5	56.0%	597530	3555450	3054.00
SO_2 3-hr SIL	6.06	-	-	-	-	25	24.3%	597480	3555450	3052.13
SO_2 1-hr SIL	6.34	-	-	-	-	7.8	81.3%	597480	3555450	3052.13
NO_2 Annual Class I SIL	0.002	-	-	-	-	0.1	2.4%	558179	3558860	3599.21
$PM_{2.5}$ Annual Class I SIL	0.00027	-	-	-	-	0.05	0.5%	558179	3558860	3599.21

Pollutant, Time Period and Standard	Modeled Facility Concentration ($\mu g/m^3$)	Modeled Concentration with Surrounding Sources ($\mu g/m^3$)	Secondary PM ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Cumulative Concentration ($\mu g/m^3$)	Value of Standard ($\mu g/m^3$)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
$PM_{2.5}$ 24-hr Class I SIL	0.00597	-	-	-	-	0.27	2.2%	558179	3558860	3599.21
PM_{10} Annual Class I SIL	0.00027	-	-	-	-	0.2	0.1%	558179	3558860	3599.21
PM_{10} 24-hr Class I SIL	0.01023	-	-	-	-	0.3	3.4%	558177	3559070	3604.76
SO_2 Annual Class I SIL	0.00015	-	-	-	-	0.1	0.2%	558179	3558860	3599.21
SO_2 24-hr Class I SIL	0.00570	-	-	-	-	0.2	2.9%	558177	3559070	3604.76
SO_2 3-hr Class I SIL	0.03069	-	-	-	-	1	3.1%	558177	3559070	3604.76
NO_2 Annual NMAAQS	4.12	-	-	9.3	13.42	94.0	14%	597259	3555496	3046.46
NO_2 1-hr NNAQS	95.59	-	-	54.50	150.09	188.03	80%	597530	3555450	3054.00
$PM_{2.5}$ Annual NAAQS	0.40	2.00	0.00079	7.10	9.10	12	76%	597259	3555562	3054.92
$PM_{2.5}$ 24-hr NAAQS	2.02	5.49	0.019	16.50	22.01	35	63%	597630	3555500	3062.57
PM_{10} 24-hr NAAQS	4.42	11.66	-	37.30	48.96	150	33%	597530	3555450	3054.00
NO_2 Annual PSD Class II	4.12	-	-	9.3	13.42	25	54%	597259	3555496	3046.46
$PM_{2.5}$ Annual PSD Class II	0.40	1.76	0.00079	-	1.77	4	44%	597259	3555562	3054.92
$PM_{2.5}$ 24-hr PSD Class II	2.93	7.48	0.019	-	7.50	9	83%	597130	3555750	3053.31
PM_{10} 24-hr PSD Class II	4.42	11.20	-	-	11.20	30	37%	597530	3555450	3054.00

16-X: Summary/conclusions

1	A statement that modeling requirements have been satisfied and that the permit can be issued.
	This modeling analysis demonstrates that operation of the facility described in this report neither causes nor contributes to any exceedances of applicable air quality standards. The permit can be issued based on this modeling analysis.

From:	Mustafa, Sufi A., ENV
To:	Adam Erenstein
Cc:	Peters, Eric, ENV; Mingcheng Ren; Lance Green
Subject:	RE: [EXTERNAL] RE: Modeling Protocol: Red Raider Compressor Station
Date:	Monday, April 10, 2023 6:09:06 PM
Attachments:	image002.png image003.png

Adam
This modeling protocol is acceptable.
Thank you.

Sufi A. Mustafa, Ph.D.
Manager Air Dispersion Modeling and Emission Inventory Section
New Mexico Environment Department's Air Quality Bureau
Office: (505) 629 6186
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Suite 1
Santa Fe, New Mexico, 87505
https://www.env.nm.gov/air-quality/

"Innovation, Science, Collaboration, Compliance"

From: Adam Erenstein <AErenstein@trinityconsultants.com>
Sent: Friday, March 31, 2023 3:33 PM
To: Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>
Cc: Peters, Eric, ENV <eric.peters@env.nm.gov>; Mingcheng Ren <Mingcheng.Ren@trinityconsultants.com>; Lance Green <Lance.Green@enlink.com>
Subject: [EXTERNAL] RE: Modeling Protocol: Red Raider Compressor Station

Hi Sufi,
Attached is the modeling protocol for the Red Raider Compressor Station for your review. Please contact me if you have any questions. Have a great weekend!

Regards,

Adam Erenstein
Principal Consultant, Manager of Consulting Services

P 505.266.6611 M 480.760.3860
NEW ADDRESS: 9400 Holly Avenue NE, Building 3, Suite B, Albuquerque, NM 87122
Email: aerenstein@trinityconsultants.com

AIR DISPERSION MODELING PROTOCOL

NSR Application Modeling Protocol

Delaware G&P, LLC
Red Raider Compressor Station

Prepared By:

Mingcheng Ren – Consultant

TRINITY CONSULTANTS
9400 Holly Avenue NE
Building 3, Suite B
Albuquerque, NM 87122
(603) 866-0968

March 2023

Project 233201.0051

Trinity Consultants

1. INTRODUCTION

1.1 Purpose of Modeling

Red Raider Compressor Station (the facility) is a natural gas compressor station for the transport of natural gas owned and operated by Delaware G&P, LLC (Delaware). The facility will collect and store condensate and produced water generated at the inlet separator and compressors, which will be transported offsite via truck. The facility is located approximately 12.94 miles southeast of Loving, New Mexico, in Eddy County.

Delaware is submitting an application pursuant to 20.2.72.200.A NMAC for an initial NSR Permit. With this application, Delaware seeks to authorize facility throughput of 150 MMSCFD of natural gas, the construction and operation of two (2) Waukesha 16V275G1 compressor engines (ENG-1 and ENG-2), one (1) dehydrator, one (1) DEHY Glycol Reboiler (RBL-1), six (6) Caterpillar 3612A4 compressor engines (ENG-3 through ENG-8), one (1) Enclosed Combustion Unit (ECD-1), one (1) 750 bbl gunbarrel tank, two (2) 1000 bbl condensate tanks, and one (1) 1000 bbl produced water tank. Emissions will also result from associated fugitives, malfunctions, condensate and produced water loading, and SSM.

Delaware seeks to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS), New Mexico Ambient Air Quality Standards (NMAAQS), and PSD Increment standards as applicable for the following pollutants and averaging periods: NO_2 (1-hour and annual), CO (1-hour and 8-hour), SO_2 (1-hour, 3-hour, 24-hour, and annual), $PM_{2.5}$ (24-hour and annual), and PM_{10} (24-hour and annual).

1.2 Facility Description and Location

The approximate UTM coordinates of the facility are 597,280 meters east and 3,555,400 meters north with WGS84 datum Zone 13 at an elevation of approximately 3,051 feet above mean sea level.

2. PROPOSED MODELING

2.1 Model Input Options

The latest version of the AERMOD dispersion model (version 22112) will be used for this analysis. The model will be run in regulatory mode with all default options. The ARM2 method will be used to convert NO_X to NO_2. Default minimum and maximum ambient ratios will be utilized.

Table 1 shows the emission sources and stack parameters for the facility including the new units (ENG-1 through ENG-8, RBL-1, and ECD-1).

Table 1- Emission sources and stack parameters to be included in the air dispersion modeling.

Unit Number	NO_x lb/hr	CO lb/hr	SO_x lb/hr	PM_{10} lb/hr	$PM_{2.5}$ lb/hr	H_2S lb/hr	Height ft	Temp F	Velocity ft/s	Diam. ft
ENG-1	3.31	6.39	0.19	0.35	0.35	-	35	864	88.06	2.50
ENG-2	3.31	6.39	0.19	0.35	0.35	-	35	864	88.06	2.50
ENG-3	2.48	4.80	0.14	0.25	0.25	-	28	820	127.05	2.00
ENG-4	2.48	4.80	0.14	0.25	0.25	-	28	820	127.05	2.00
ENG-5	2.48	4.80	0.14	0.25	0.25	-	28	820	127.05	2.00
ENG-6	2.48	4.80	0.14	0.25	0.25	-	28	820	127.05	2.00
ENG-7	2.48	4.80	0.14	0.25	0.25	-	28	820	127.05	2.00
ENG-8	2.48	4.80	0.14	0.25	0.25	-	28	820	127.05	2.00
RBL-1	0.20	0.16	0.011	0.015	0.015	-	9.2	1400	26.6	0.8
ECD-1	0.10	0.20	0.00017	-	-	-	13	1200	1.48	5

If applicable, a downwash analysis using the latest version of BPIP will be conducted and incorporated into the modeling analysis to account for potential effluent downwash due to structures at the facility.

2.2 Receptor Grid Description and Elevation Data

The center point of the facility will be designated at 597,280 meters east and 3,555,400 meters north. This center point will serve as the center point for a variable-density circular receptor grid. The facility fenceline will be modeled using 25-meter grid spacing. A 50-meter grid spacing will extend out to 800 meters in each direction from the facility center point for a very fine grid resolution. A 100-meter grid spacing will extend from 800 meters to 3,000 meters in each direction for a fine grid resolution. A 250-meter grid spacing will extend from 3,000 meters to 6,000 meters in each direction for a medium grid resolution. A 500-meter grid spacing will extend from 6,000 meters to 10,000 meters in each direction for a coarse grid resolution. A 1000-meter grid spacing will extend from 10,000 meters to 50,000 meters in each direction for a very coarse grid resolution. It is expected that the highest impacts from the proposed source will be at or near the facility property.

For the Class I area analysis, a grid spacing of 1000 m is used for receptors over the Class I area obtained from New Mexico Environment Department's Air Quality Bureau (NMED).

The elevations of receptors and facility sources will be determined using the most recent NED data currently available obtained from USGS (1 arc-second DEM).

2.3 Meteorological Data

We will use the Carlsbad NWS dataset for five meteorological years (2017-2021) available on the NMED website. The Carlsbad OS dataset will not be used because this dataset is currently not available on the NMED website.

2.4 Significance Analysis (SIL) and Cumulative Impact Analysis (CIA)

The modeled ground-level concentrations will be compared to the corresponding significant impact levels (SILs) to determine whether any modeled ground-level concentrations at any receptor locations are greater than the SIL (i.e., "significant" receptors). If the significance analysis reveals that modeled ground-level concentrations for a particular pollutant and averaging period are greater than the applicable SIL, a Cumulative Impact Analysis (CIA) will be performed at the significant receptors. The CIA will include impacts from the facility sources and background concentrations/surrounding sources if applicable.

If necessary, the background concentration used for NO_2 will be from the Carlsbad Monitor (5ZR). The background concentration for $PM_{2.5}$ and PM_{10} will be the Hobbs-Jefferson Monitor (5ZS). The inclusion of background concentrations will follow the guidance shown in Table 20: "Modeling the Design Value Summary (Default Modeling)" from the Modeling Guidelines.

For SO_2 modeling, based on the NMED Modeling Guidelines, if the facility is in the Pecos-Permian Basin Intrastate AQCR (AQCR 155), we will model the facility and surrounding sources (because representative monitoring may not be available).

For PM2.5 and PM10 modeling, we will include modeling the facility and nearby sources and adding secondary formation (if applicable) and a background concentration. For modeling nearby sources, all sources within 10 km of the facility will be included in the model. An inventory of the surrounding sources will be obtained from the NMED. Based on EPA's Guidance for PM2.5 Permit Modeling and NMED'S Modeling Guidelines, sources that emit at least 40 tons per year of NO_X or at least 40 tons per year of SO_2 are considered to emit significant amounts of precursors. Sources with significant increases of PM2.5 precursors must qualitatively and/or quantitatively account for the secondary formation of PM2.5. The secondary formation of PM2.5 will be calculated in this modeling following the NMED Modeling Guidelines.

2.5 PSD Increment Analysis

If the results of the ROI analysis for NO_X, SO_2, or PM_{10} indicate concentrations greater than significance levels, PSD increment analysis will be conducted for the appropriate averaging periods. If required, the PSD increment analysis will be conducted including all PSD increment consuming and expanding sources within 25 km of the facility, plus sources emitting over 1000 pounds per hour within 50 km of the facility. These surrounding sources' information will be obtained from NMED-AQB. The predicted maximum concentrations will be compared to the appropriate Class II PSD Standard.

2.6 Class I Areas Analysis

The nearest Class I area is Carlsbad Caverns National Park at 38.2 km from the facility. Pollutants will be modeled for significance using the Carlsbad Caverns receptor grid. Class I area analysis will be performed if concentrations are greater than Class I significance levels as the national park is inside of the 100 km inclusion zone for PSD major sources.

Section 17

Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

To show compliance with existing NSR permits conditions, you must submit a compliance test history. The table below provides an example.

N/A – This Facility has not been constructed yet.

Section 22: Certification

Company Name: _____

I, _____, 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 ____ day of _____, _____, upon my oath or affirmation, before a notary of the State of

_____.

_____ _____
*Signature Date

_____ _____
Printed Name Title

Scribed and sworn before me on this ____ day of _____, _____.

My authorization as a notary of the State of _____ expires on the

_____ day of _____, _____.

_____ _____
Notary's Signature Date

_____
Notary's Printed Name

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